SFG3778

Environmental and Social Management Plan
for
Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project

Jiangxi PMO

November 2017

Project name: Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project

Entrusted by: Jiangxi Provincial Water Investment Group, PMO of World Bank-Financed Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project

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Chapter I Project Introduction

1.1 Project Background

The 13th Five Year Plan (FYP) of Jiangxi Province proposes to create a powerful modern agricultural province. The prerequisite of agricultural development is to guarantee the safety of rural drinking water and to ensure a healthy water environment. Therefore, when establishing its 13th FYP, Jiangxi Province has proposed water supply and wastewater management in rural areas as a prioritized task and as one of the poverty alleviation measures across the province. The provincial government clearly stated in the 13th FYP that by the end of 2020, 90% of the rural population across the province will have access to piped water supply, wastewater management rate at County level will be up to 85% and wastewater management in rural areas below County level will enjoy substantial improvement. Since 2009, Jiangxi Provincial Water Investment Group has established an integrated urban and rural water supply model, with the government as the liability party and the company as the investment party. With the help of overall planning and reallocation of public service resources in less-developed economic regions, it has improved the safety of drinking water in rural areas and the utilization rate of water resources. Using reasonable layouts of water source locations, water plants and pipe networks, it allows for the further urbanization and development of the industrial park.

Jiangxi Provincial Water Investment Group had applied for a loan of 200 million USD from the World Band for the *Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project*, with an estimated total investment of about 2.4 billion RMB. The locations of the project are distributed across the 7 counties of Fuzhou, Ji'an, Jiujiang, Jingdezhen etc, including Yongxin County of Ji'an City, Jinxi County, Linchuan County, Nanfeng County and Dongxiang District of Fuzhou City, Xiushui County of Jiujiang City and Leping City of Jingdezhen City. The main construction work include urban water supply, rural water supply and rural wastewater management.

Refer to Figure 1.1-1 for the locations of the project.

Refer to Table 1.1-1 for details on the construction work.

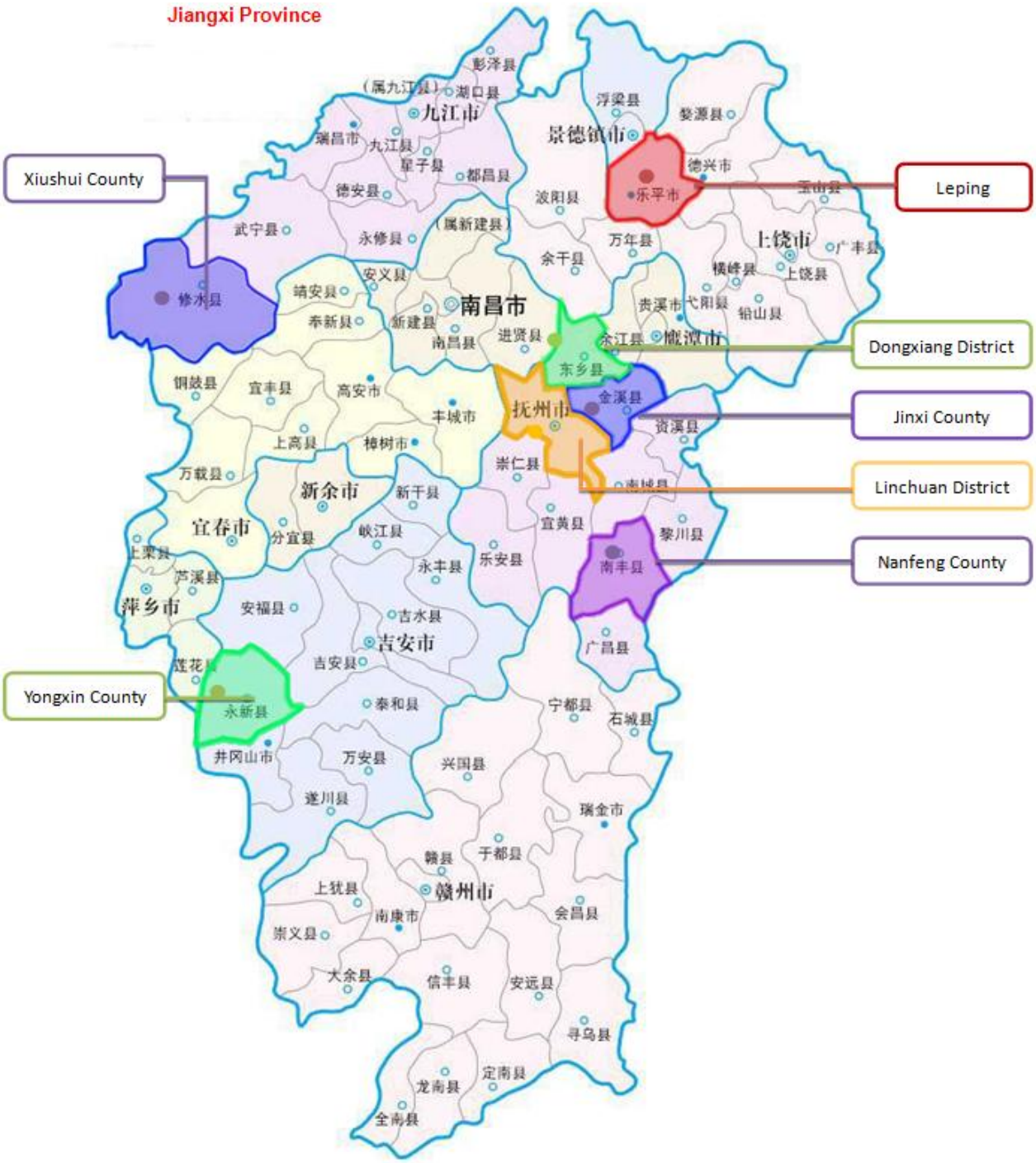


Figure 1.1-1 Distribution map of World Bank-Financed Jiangxi Provincial Integrated Rural and Urban Water Supply and Wastewater Management Project.

Table 1.1-1 Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project

No	Type	Subproject Name	Project Nature	Content and Construction Scale	Investment (10,000RMB)
I. Construction and Renovation of Water Supply Infrastructure					
1	Improvement of urban water supply facilities				
1.1	Renovation and new construction of urban waterworks	New Construction of Urban Waterworks in Yongxin County	New construction	New construction of one auto-flowing pontoon of 100,000 m^3/d and 21.5 km DN1200 muddy water pipe; new waterworks construction in southern city, 50,000 m^3/d in the short term and 100,000 m^3/d in the long term; new construction of 11.2 km DN900 main delivery pipe of clean water, with the county area as its service scope	20,299.84
		New Construction of Urban Waterworks in Linchuan District	New construction	New construction of water intake engineering, 55,000 m^3/d pumping house in the short term; new construction of two DN800 raw water pipes of 2.4 km; new construction of waterworks, 50,000 m^3/d in the short term, with the urban area as its service scope	9,198
		New Construction of Urban Waterworks in Dongxiang District	New construction	New construction of water intake engineering, 42,000 m^3/d pumping house; new construction of DN800 raw water pipe of 17.4 km; new construction of waterworks, 40,000 m^3/d in the short term; with the county area as its service scope	8,685.25
		Extension of Urban Waterworks in Xiushui County	Extension/new construction	New construction of water intake engineering, extending the pumping house to 105,000 m^3/d from 85,000 m^3/d; new construction of 22.6 km DN1200 raw water pipe, extending the waterworks to 100,000 m^3/d from 50,000 m^3/d, covering 29403 households,with the county area as its service scope	10,953.29
		Extension of Urban Waterworks in Leping City	Extension/new construction	New construction of water intake engineering, pumping house of 120,000 m^3/d of the total scale of water intake; new construction of 36.9 km DN1000 raw water pipe, extending the waterworks to 100,000 m^3/d from 50,000 m^3/d, with the county area as its service scope	13,341.77

No	Type	Subproject Name	Project Nature	Content and Construction Scale	Investment (10,000RMB)
1.2	Renovation and new construction of urban water supply pipe network	Renovation of Urban Pipe Network of Tap Water in Yongxin County	Renovation	Renovation of 6.97 km DN100~DN500 water supply pipe network, new construction of 41.3 km DN300~DN800 water supply pipe network, with the county area as its service scope	5,873.35
		Renovation and New Construction of Urban Pipe Network of Tap Water in Linchuan District	Renovation/new construction	Renovation of 13.4 km DN200~DN600 pipe network, new construction of 22.9 km DN200~DN1000 pipe network, with the urban area as its service scope	7,306.56
		Renovation of Urban Pipe Network of Tap Water in Dongxiang District	Renovation/new construction	Renovation of 16.3 km DN200~DN1000 pipe network, new construction of 6.74 km DN600~DN800 pipe network, with the county area as its service scope	8,748.75
		Renovation and New Construction of Urban Pipe Network of Tap Water in Jinxi County	Renovation/new construction	Renovation of 10.5 km DN500~DN600 pipe network, new construction of 24.1 km DN300~DN500 pipe network, with the county area as its service scope	6,680.73
		New Construction and Renovation of Urban Pipe Network in Xiushui County	Renovation/new construction	Renovation and new construction of 149 km DN200~DN1000 pipe; with the county area as its service scope	21,027.7

No	Type	Subproject Name	Project Nature	Content and Construction Scale	Investment (10,000RMB)
		New Construction and Renovation of Urban Pipe Network in Leping City	Renovation/new construction	Renovation of 15.1 km DN200~DN1000 nodular cast iron pipe and 112 m steel pipe across river; new construction of 40.9 km DN200~DN700 nodular cast iron pipe, with the county area as its service scope	9,654.28
2	Consolidation and upgrading of rural drinking water safety				
2.1	Extension of counties' pipe network	Extension of Pipe Network in Towns of Yongxin County	New construction	Extending to 40 villages in Shiqiao Town, Caifeng Town, Lianzhou Town, Huaizhong Town and Gaoqiaolou Town from the pipe network of the county's waterworks, new construction of 24.7 km DN200-DN500 pipe network, covering 16035 households	5,260.45
		Extension of Pipe Network in Towns of Jinxi County	New construction	Extending to 22 villages in Zuofang Town, Shuangtang Town and Heshi Town from the pipe network of the county's waterworks, new construction of 34.4 km DN200-DN300 pipe network	2,852.68
		Extension of Pipe Network in Towns of Linchuan District	New construction	Extending to 36 villages in Wenquan Town, Liancheng Town and Chonggang Town from the pipe network of the county's waterworks, new construction of 14 km DN200~DN300 pipe network, covering 5643 households	1,357.5
		Extension of Pipe Network in Towns of Dongxiang District	New construction	Extending to 54 villages in Dengjia Town, Gangshangji Town, Huxu Town, Pogan Town, Xushangqiao, Xiaohuang Town, Xiaogang Town from the pipe network of the county's waterworks, new construction of 40.9 km DN200~DN300 pipe network, covering 52252 households	8,520.19
		Extension of Pipe Network in Towns of Nanfeng County	New construction	Extending to 27 villages in Shishan Town, Qiawan Town and Laixi Town from the pipe network of the county's waterworks, new construction of 19.5 km DN200~DN350 pipe network, covering 6807 households	2,378.58
		Extension of Pipe Network in Towns of Leping City	New construction	Extending to 28 villages in Jiedu Town, Legang Town and Hougang Town from the pipe network of the county's waterworks, new construction of 21.3 km DN200~DN300 pipe network and two integrated booster pump stations, covering 17893 households	12,440.68

No	Type	Subproject Name	Project Nature	Content and Construction Scale	Investment (10,000RMB)
2.2	Renovation and extension of rural water supply pipe network	Consolidation and Upgrading of Rural Drinking Water Safety in Yongxin County	New construction	Laying 49.47 km pipe network in Longyuankou Town, Yange Town and Zaizhong Town; new construction of one booster pump station, covering a total of 22 villages, covering 3547 households	661.3
		New Construction and Renovation of Pipe Network in Towns of Xiushui County	New construction	New construction and renovation of pipe network of the original waterworks in Zhajin Town, Ma'ao Town, Xigang Town, Shankou Town and Gangkou Town, covering a total of 46villages, covering 23990 households, new construction of 65.5 km DN200~DN600 pipe network	8,264.85
		Extension of Pipe Network in Towns of Leping City	New construction	Extension of pipe network of the original Wukou, Lingang, Yongshan, Xingfu, Dongfanghong, Nangang, Lilin, Zhongbu and Zhenqiao waterworks in nine towns, covering a total of 77 villages, new construction of 44.3 km DN200~DN300 pipe network and 17 integrated booster pump stations, covering 55945 households	5,642.22
2.3	New construction, renovation and expansion of rural waterworks	New Construction of Waterworks in Huangtong Town of Jinxi County	New construction	New construction of one box-type water intake head, with 1,200 m^3/d of its intake scale; new construction of two DN200 raw water pipes of 90m; new construction of waterworks of 1,200 m^3/d in Huangtong Town; new construction of 8 km DN200~DN250 pipe network of waterworks and 150m DN200 steel pipe network, 4 villages in Huangtong Town as its service scope, covering 12154 households	1,983.61
		Renovation and Expansion of Waterworks in the Town of Leping City	Renovation and extension	Extending Lilin Waterworks to 10,000m^3/d from 5,000 m^3/d, 26 villages in Lilin Town as its service scope	3,964.49
II. New Construction of Rural Wastewater Treatment Facilities					
1	New construction of wastewater pipe network and treatment plant in Zhajin Town of Xiushui County		New construction	New construction of wastewater treatment plant of 2,000 m^3/d and 14.5km DN300~DN400 HDPE wastewater pipe network, covering 2,800 households	4,496.03
III. Improvement and Enhancement of Service Quality: Water Supply Pipe Storage Engineering, Layout of Pipe Network Monitoring, Information Management Sys-					

No	Type	Subproject Name	Project Nature	Content and Construction Scale	Investment (10,000RMB)
tem of Water Supply Pipe Network, etc.					

1.2 Purpose of the Environmental and Social Management Plan

The environmental and social management plan aims to establish practical measures which improve activities such as project site selection, planning, design and implementation, thus preventing, eliminating, alleviating or compensating adverse environmental impact and enhancing favorable environmental impact. Throughout the implementation of the entire project, adverse environmental impact is alleviated and managed by taking such measures, while the actual effect of alleviation measures is assessed by implementing environmental monitoring. Suggestions for the further improvement of alleviation measures are proposed based on these monitoring results.

The functions of environmental and social management plan are to propose necessary alleviation measures, monitoring measures, legal supervision methods as well as guarantees for the aforementioned measures. These are to be applied during project implementation and operation. Meanwhile, it is also a crucial tie linking environmental impact to alleviation and substitution measures during the environmental impact assessment. The environmental and social management plan stipulates technical expertise, implementation plan, institutions that perform the execution and supervision, monitoring as well as the estimation and source of investment funds for each environmental management measure. To achieve the target of reduction, methods involving environmental impact assessment report and the environmental and social management plan must be applied.

1.3 Compilation of the Environmental and Social Management Plan

The environmental and social management plan of *China Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project* was compiled by the project owner and environmental impact assessment company. The environmental and social management plan of the entire project has been compiled based strictly on national and provincial laws and regulations for environmental management. On the premise of meeting relevant Chinese laws and regulations for environmental protection, it also meets the requirements of safety guarantee policy of the World Bank.

1.4 Design of the Environmental and Social Management Plan

The environmental and social management plan is an action plan based on environmental and social impact assessments. It is established to alleviate anticipated, potential and adverse environmental and social impact during project implementation and to enhance environmental and social benefits of the project. It includes the following four main parts:

(1) Environmental impact and alleviation measures: main environmental impacts of project construction and operation periods; engineering and management measures are taken to prevent or alleviate adverse environmental impact from the project.

(2) Establishment of environmental management institutions: environmental management institutions and management systems are established to guarantee synchronous implementation of environmental protection measures, engineering construction and operation.

(3) Environmental monitoring: environmental monitoring is performed to guarantee engineering operational safety and effectiveness of environmental protection measures.

(4) Capability development (i.e. personnel training) plan: during project implementation, knowledge and skill trainings are provided for management, environment supervision, full-time or part-time environmental management personnel to guarantee implementation of environmental and social management plan.

Focusing on the characteristics of the project, two attachments have been compiled for the *Plan*, including:

(1) Implementation procedure of environmental protection: focusing on the common environmental impact of plumbing pipe network construction and other civil works (water and wastewater treatment plants) of the project during construction and operational periods, general solutions and alleviation measures are established which will be considered as environmental management requirements and included into tender documents and relevant civil contracts for the future implementation of the project;

(2) Management plan of physical cultural resources: according to requirements of physical cultural resources policy (OP4.11) of the World Bank, specific actions and protective measures are established for local physical cultural resources (include 6 ancient trees and 1 ancestral temple) which may be affected directly/indirectly during construction and operation of the project. They will also be adopted by relevant sub-category projects in the future.

Chapter II Policies, Laws and Administrative Management Framework

According to provisions of *Notice on Enhancing Environmental Impact Assessment Management of Projects with Loan from International Financial Institution*, Jiangxi Provincial Integrated Rural and Urban Water Supply and Wastewater Management Project must implement Chinese laws, regulations and standards for environmental protection as well as its environmental impact assessment system. While implementing relevant Chinese laws and regulations for environmental protection, it shall also abide by the technical requirements of international financial institutions.

2.1 Policies, Laws and Regulations for Environmental Protection

2.1.1 National Laws and Regulations

(1) *Environmental Protection Law of the People's Republic of China* (Implemented on Dec. 26,1989 and revised on April 24, 2014);

(2) *Environmental Impact Assessment Law of the People's Republic of China* (Implemented on September 1, 2003 and revised on July 2, 2016);

(3) *Water and Soil Conservation Law of the People's Republic of China* (Implemented on June 29, 1991 and revised on December 25, 2010);

(4) *Land Management Law of the People's Republic of China* (Implemented on January 1, 1987 and revised on August 28, 2004);

(5) *Air Pollution Control Law of the People's Republic of China* (Implemented on June 1, 1988 and revised on August 29, 2015);

(6) *Environmental Noise Pollution Control Law of the People's Republic of China* (Implemented on March 1, 1997);

(7) *Water Pollution Control Law of the People's Republic of China* (Implemented on May 11, 1984 and revised on February 28, 2008);

(8) *Solid Waste Polluting Environment Control Law of the People's Republic of China* (Implemented on April 1, 1996 and revised on November 7, 2016);

(9) *Regulations for Environmental Protection Management of Construction Projects the Sate Council Decree No. 253* (Implemented on November 29, 1998);

2.1.2 Local Laws and Regulations and Administrative Provisions

(1) *Jiangxi Province Regulation for Pollution Prevention and Control* (Implemented on January 1, 2009);

(2) *Jiangxi Province Regulation for Environmental Pprotection of Construction Projects* (Implemented on April 29, 1995 and revised on September 17, 2010);

(3) *Jiangxi Province Methods for Implementing Land Management Law of the People's Republic of China* (Implemented in December 1986).

(4) *Jiangxi Province Technical Guidance (trial) for Rural Diffused and Domestic Pollution Control*, 2011.

(5) *Jiangxi Province Prevention and Control Methods for Water Source Pollution of Domestic Potable Water* (Implemented on August 1, 2006);

(6) *Jiangxi Province Regulation for Water Resource* (Implemented on March 30, 2006);

2.1.3 Technical Specifications

(1) *Technical Guidelines for Environmental Impact Assessment General Principle* (HJ2.1-2011), implemented on January 1, 2017;

(2) *Control Standards for Soil and Water Erosion on Development and Construction Projects* (GB50434-2008), implemented on July 1, 2008;

(3) *Notice on Practically Enhance Risk Prevention and Strict Environmental Impact Assessment Management* Ministry of Environmental Protection Issued [2012] No. 98, implemented on July 3, 2012;

2.1.5 Safety Guarantee Policy of the World Bank

The safety guarantee policy serves as the due diligence of the World Bank on the social and environmental impacts attributed by World Bank- financed projects. It includes the analysis of potential impact and measures to alleviate negative impact. According to the assessed project impact, this project involves the following safety guarantee policies of the World Bank:

(1) Environmental assessment (OP/BP 4.01)

(2) Physical cultural resources (OP/BP 4.11)

(3) Non-voluntary immigration (OP/BP 4.12)

(4) Dam safety (OP/BP 4.37)

(5) Information disclosure (BP17.50)

In addition, environmental quality and pollutant discharge standard of this project shall also fulfill the standards and requirements stated in *General EHS Guidelines*, *Water and EHS Guidelines* and *Waste Management Facility EHS Guidelines.*

2.2 Assessment Standards

2.2.1 Environmental Quality Standards

2.2.1.1 Air Quality Standards

(1) Ambient air: Classified under Category II, ambient air quality zone shall follow Level II standard in *Ambient Air Quality Standards* (GB3095-2012). Refer to the following Table for *Ambient Air Quality Standards* (GB3095-2012)

Table 2.2-1 *Ambient Air Quality Standards* (GB3095-2012)

Pollutant name	Sampling time	Level II standard value (mg/Nm^3)
TSP	Daily average	0.30

2.2.1.2 Environmental Quality Standards for Surface Water

Surface water in assessment zone follows Category II and III standard in *Environmental Quality Standards for Surface Water* (GB3838－2002). Refer to Table 2.2-2 for standard values.

Table 2.2-2 Environmental Quality Standards for Surface Water (Excerpt)

Unit: mg/L (exclude pH)

Item	**pH**	**COD**	**BOD_5**	**DO**	**Petroleum category**	**NH_3-N**	**Total phosphorus**
Category II standard	6-9	≤15	≤3	≥6	≤0.05	≤0.5	0.1
Category III standard	6-9	≤20	≤4	≥5	≤0.05	≤1.0	0.2

2.2.1.3 Environmental Quality Standards for Noise Level

As the project is located in a rural area, it follows Category 1 & 2 in *Environmental Quality Standards for Noise Levels* (GB3096-2008). Category 1 applies to Villages and Category 2 to towns. Refer to the following Table for standard values.

Table 2.2.-3 Current situational assessment standards of noise levels Unit: dB (A)

Period / Standard	**Daytime**	**Night-time**
Category 1	55	45
Category 2	60	55

2.2.2 Pollutant Discharge Standards

(1) Waste gas: Emission of waste gas for the project follows Level II standard in *Integrated Emission Standard of Air Pollutants* (GB16297- 1996) and discharge of air pollutant for wastewater treatment plant follows Level II standard requirements in Table 4 of *Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant* (GB18918-2002). Refer to the following table for specific standard values.

Table 2.2-4 Discharge standards of air pollutants for project Unit: mg/m^3

Pollutant	Monitoring concentration limit of intermittent discharge		Standard
	Monitoring point	Concentration (mg/m^3)	
TSP	Maximum concentration point, beyond perimeter	1.0	Level II in GB16297-1996

Table 2.2-5 Maximum concentration tolerance of emission of waste gas at boundary of town wastewater treatment plant

Pollutant	Unit	Guideline value
Ammonia	mg/m^3	1.5
Hydrogen sulfide	mg/m^3	0.06

(2) Sewage and wastewater:

In 2006, the now-defunct National Bureau of Environmental Protection issued a revision for the *Discharge Standards of Pollutants for Municipal Wastewater Treatment Plants*. The revision indicated that Standard B of Level I standard shall be followed when draining outlet water of wastewater treatment plant to Category III functional surface water (exclude classified potable water source conservation area and swimming area) in GB3838 and to Category II functional seawater in GB3097. Currently, there are no discharge standards for domestic wastewater management in rural China. As a result, discharge of domestic wastewater management in rural areas is required to have the endurance capacity of the local economy, maturity of technology, reliability of operation and other factors in consideration. The receiving water body of this project is known as Zhajin Water, which belongs to the Xiuhe source and its water quality target is Category III based on functional zone classification of water environment in Jiangxi Province. The water functional zone is considered the reserve for Zhajin in Xiushui Town and the discharge standard of project domestic sewage in rural areas adopts Standard B of Level I based on *Discharge Standard of Pollutants for Municipal Wastewater Treatment Plants*. Refer to the following table for details.

Table 2.2-6 Discharge Standards of Pollutants for Municipal Wastewater Treatment Plants Unit: mg/L (exclude pH)

Pollution factor	pH	COD	BOD_5	NH_3-N	TP
Level I standard (Standard B)	6-9	60	20	8（15）	1

(3) Noise: Noise during construction follows the standard limit in *Emission Standard of Environment Noise for Boundary of Construction Site* (GB12523-2011), refer to Table 2.2-7; periphery noise during project operational period follows standard of Category 1 & 2 zone in *Emission Standard for Industrial Enterprises Noise at Boundary* (GB 12348-2008), refer to Table 2.2-8.

Table 2.2-7 Emission Standard Limit of Environment Noise for Boundary of Construction Site

Unit: dB (A)

Daytime	Night-time
70	55

Table 2.2-8 Emission Standard Limit for Industrial Enterprises Noise at Boundary

Unit: dB (A)

Standard	Daytime	Night-time
Category 1	55	45
Category 2	60	50

Chapter III Environmental Management System

3.1 Environmental Management System

As the Owning Company of China Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project financed by the World Bank, the Water Conservation Bureau in Jiangxi Province has established a leading group (provincial project leading group or PLG for short) for the World Bank-financed Integrated Rural and Urban Water Supply and Wastewater Management Project. The PLG mainly takes charge of organizing, leading and coordinating the construction of urban and rural water supply and wastewater management project, researching and deploying project financing and implementation as well as deciding, planning, guiding and coordinating relevant issues during project preparation and implementation. The office under the PLG, mainly takes charge of the day-to-day coordination and implementation of the project, organizing and holding regular meetings regularly as well as supervising and urging project preparation and implementation.

During the project construction stage, Water Conservation Bureau in Jiangxi Province entrusted Jiangxi Provincial Water Investment Group to establish "PMO of World Bank-Financed Jiangxi Provincial Integrated Rural and Urban Water Supply and Wastewater Management Project" (provincial PMO or PPO for short). As the legal institution of project construction, it mainly takes charge of project differentiation, preparation, pre-assessment, assessment, negotiation and implementation. The PMO is under the supervision of the PLG and its office.

Each project County (city) establishes its own County (city) leading group and office to lead and coordinate the World Bank projects in areas under its jurisdiction. They are required to coordinate the construction of local integrated urban and rural water supply and wastewater management projects, and to solve relevant issues such as land requisition, relocation, immigration and environmental protection during project implementation which need to be dealt with at the governmental level.

During the project operational stage, Water Investment & Water Affairs Group undertakes operational management responsibilities of water supply sub-item under the project and the Water Investment Ecological Environment Company undertakes sewage sub-item.

As the environmental management of construction and operational periods vary greatly and have different time limits (temporal or long-term), the contractor and operation provider shall establish institutions based on the different stages and practice the model of staged responsibilities. After completing construction, the corresponding management institution shall be annulled immediately and the management institution of operational period shall commence operation. A certain overlapping period is allowed based on the specific situation. Refer to Figure 3-1 and 3-2 for environmental management institutions of construction and operational periods.

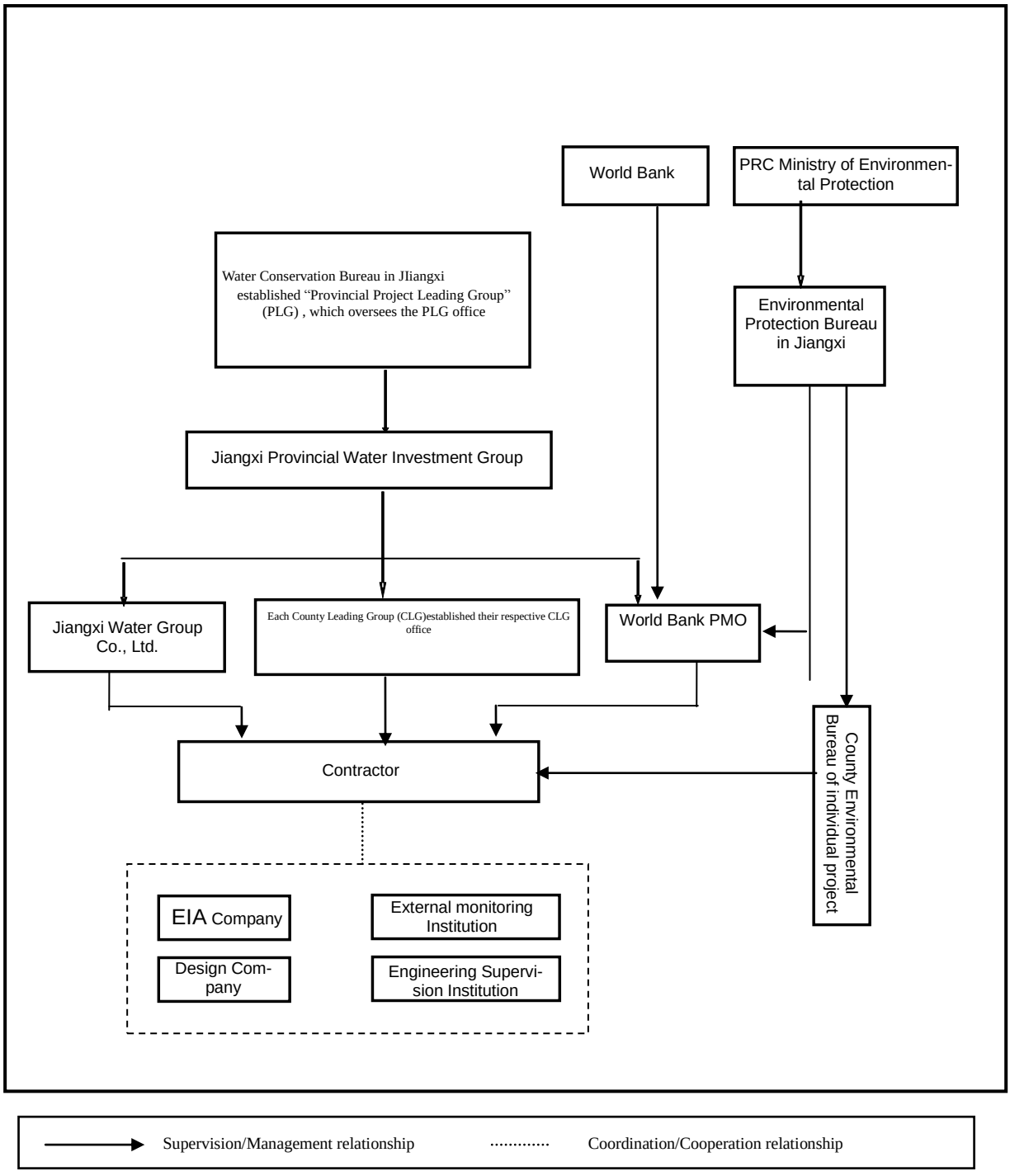


Figure 3-1 Environmental Protection Management System during construction

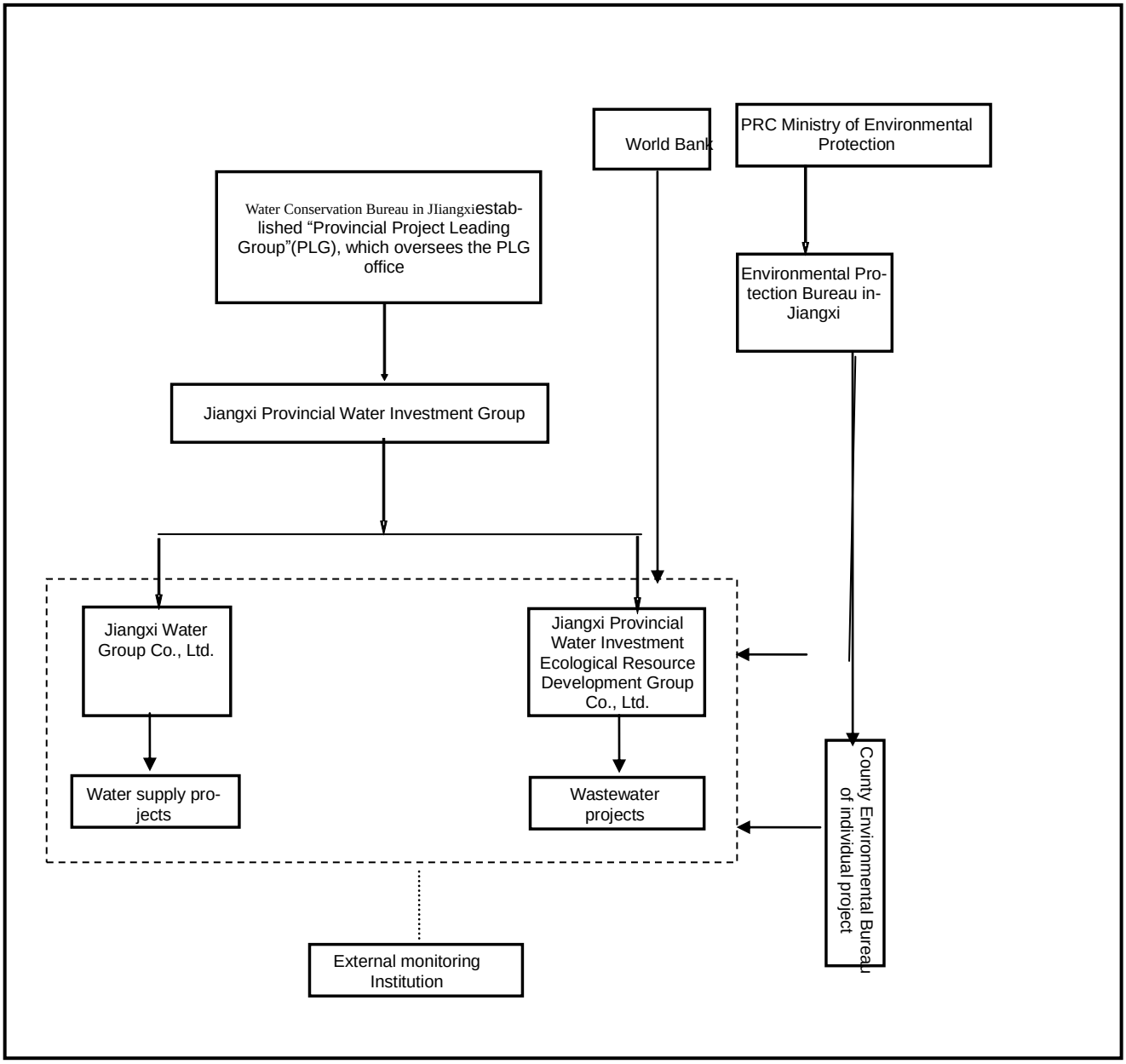


Figure 3-2 Environmental Protection Management System during operation

3.2 Capabilities and Responsibilities of Environmental Management Institutions

As environmental management varies greatly during construction and operation, different departments are responsible for the implementation of the environmental and social management plan. To ensure the seamless implementation of the project environmental and social management plan, several full- and part-time environmental management personnel have been assigned to the project owner, provincial PMO, contractor, construction supervision institution and operation provider. Refer to Table 3-1 for environmental management responsibilities and personnel allocation of each project management institution at different stages of project implementation.

Table 3-1 Environmental Management Responsibilities of Relevant Institutions

Phase	Related project party	Main environmental management responsibilities	Personnel allocation
Design and preparation	Water Conservation Bureau in Jiangxi Province (oversees PLG)	Owning company organizes and coordinates the construction of the World Bank-financed project	1
	Jiangxi Provincial Water Investment Group	Undertakes responsibilities such as project selection and arrangement of supporting funds.	1
	Provincial PMO	1. Takes charge of environmental protection management during project design and preparation stages. 2. Takes charge of coordinating and implementing environmental management issues with relevant environmental departments of the government. 3. Invites consultation institutions such as design and environmental impact assessment companies.	1
	Design company	1. Includes environmental protection measures into design plan and budget. 2. Includes alleviation measures in environmental and social management plan into technical specification of tender documents.	3
	Environmental impact assessment company	1. Provides technical support for environmental protection of engineering design. 2. Compiles project environmental impact assessment documents. 3. Establishes environmental and social management plan.	5
Construction phase	Provincial PMO	1. Takes charge of environmental protection management. Implement environmental protection funds during project constructionphase. 2. Manages and supervises environmental protection during construction phase. Investigates and resolves disturbance disturbance s caused towards residents and pollution issues during construction. 3. Takes charge of coordinating and implementing environmental management issues with relevant environmental protection departments of the government. 4. Tracks implementation of environmental and social management plan and send regular reports to relevant departments and the World Bank. 5. Handles public complaints.	1
	Integrated urban and rural	1. Manages and supervises environmental protection of	1

Phase	Related project party	Main environmental management responsibilities	Personnel allocation
	water supply PMO of Yongxin County	sub-projectprojects of Yongxin County. Investigates and resolves disturbance disturbance s caused towards residents and pollution issues during construction. 2. Takes charge of coordinating and implementing environmental management issues with local relevant environmental protection departments. 3. Tracks implementation of environmental and social management plan of Yongxin County and reports to provincial PMO regularly. 4. Handles public complaints.	
	Integrated urban and rural water supply PMO of Linchuan County	1. Manages and supervises environmental protection of sub-projectproject of Linchuan County. Investigates and resolves disturbance disturbance s caused towards residents and pollution issues during construction. 2. Takes charge of coordinating and implementing environmental management issues with local relevant environmental protection departments. 3. Tracks implementation of environmental and social management plan of Linchuan County and reports to provincial PMO regularly. 4. Handles public complaints.	1
	Integrated urban and rural water supply PMO of Jinxi County	1. Manages and supervises environmental protection of sub-project of Jinxi County. Investigates and resolves disturbance disturbances caused towards residents and pollution issues during construction. 2. Takes charge of coordinating and implementing environmental management issues with local relevant environmental protection departments. 3. Tracks implementation of environmental and social management plan of Jinxi County and reports to provincial PMO regularly. 4. Handles public complaints.	1
	Integrated urban and rural water supply PMO of Leping County	1. Manages and supervises environmental protection of sub-project of Leping County. Investigates and resolves disturbance disturbance s caused towards residents and pollution issues during construction, 2. Takes charge of coordinating and implementing environmental management issues with local relevant environmental protection departments. 3. Tracks implementation of environmental and social management plan of Leping County and report to provincial PMO regularly. 4. Handles public complaints.	1
	Integrated urban and rural water supply PMO of Nanfeng County	1. Manages and supervises environmental protection of sub-project of Nanfeng County. Investigates and resolves disturbance disturbance s caused towards residents and pollution issues during construction, 2. Takes charge of coordinating and implementing environmental management issues with local relevant environmental protection departments. 3. Tracks implementation of environmental and social ma-	1

Phase	Related project party	Main environmental management responsibilities	Personnel allocation
		nagement plan of Nanfeng County and reports to provincial PMO regularly. 4. Handles public complaints.	
	Integrated urban and rural water supply PMO of Dongxiang County	1. Manages and supervises environmental protection of sub-project of Dongxiang County. Investigates and resolves disturbance disturbance s caused towards residents and pollution issues during construction. 2. Takes charge of coordinating and implementing environmental management issues with local relevant environmental protection departments. 3. Tracks implementation of environmental and social management plan of Dongxiang County and reports to provincial PMO regularly. 4. Handles public complaints.	1
	Integrated urban and rural water supply PMO of Xiushui County	1. Manages and supervises environmental protection of sub-project of Xiushui County. Investigates and resolves disturbance disturbance s caused towards residents and pollution issues during construction. 2. Takes charge of coordinating and implementing environmental management issues with local relevant environmental protection departments. 3. Tracks implementation of environmental and social management plan of Xiushui County and reports to provincial PMO regularly. 4. Handles public complaints.	1
	Contractor	1. Launches and implements environmental protection measures and various works during construction phase, as per tender documents, contract and the environmental and social management plan. 2. Accepts guidance and supervision of environmental management personnel of the PMO construction supervision engineer and relevant functional departments of the government. 3. Accepts technical support provided by environmental protection consultation institution. 4. Takes safety preventive measures, for eg. Setting up information signs on construction site and enclosing construction site with a boundary. Establishes communication channels with the public to guarantee construction safety. 5. Implements environmental and social management plan.	Each engineering contractor to arrange at least 1 environmental management person
	Construction supervision	1. Supervises contractor to implement environmental and social management plan. Carries out environmental alleviation measures in the contract. 2. Supervises contractor's implementation on site. 3. Cooperates with owner in environmental management. 4. Records implementation of environmental and social management plan. Compile reports and report to owner regularly.	Each construction supervision to arrange at least 1 environmental management person

Phase	Related project party	Main environmental management responsibilities	Personnel allocation
	External monitoring company	1. Completes environmental monitoring of engineering construction phase based on project owner's delegation and environmental monitoring plan proposed in the assessment. 2. Supervises implementation of environmental management measures and report to owner regularly.	To be determined based on scope of entrusted task
	County Environmental Protection Bureau	1. Supervises and inspect implementation of environmental protection measures on construction site. 2. Arranges contingency measures in the event of abnormalities during construction. 3. Coordinates and handles public complaints.	1
	Technical aid/consultation advisor	1. Provides technical support for engineering construction phase based on project owner's delegation and achievements of the environmental impact and environmental protection design. 2. Provides contractor with technical guidance of environmental protection and provides environmental protection trainings during construction phase.	Not limited
Operation al phase	Jiangxi Water Group Co., Ltd.	1. Takes charge of post-operational environmental protection management of water supply projects. Implements alleviation measures and monitoring of environmental and social management plan during operational phase. 2. Takes charge of contacting relevant governmental departments. Coordinates and implements environmental management issues. 3. Contingency handling of environmental accidents. 4. Provides staff with training regularly to improve their capabilities, while encouraging active exchange of technical knowledge and expertise for the further improvement of environmental management.	1
	Jiangxi Province Water Investment Ecological Resource Development Group Co., Ltd.	1. Takes charge of post-operational environmental protection management of wastewater projects. Implements alleviation measures and monitoring of environmental and social management plan during operational phase. 2. Takes charge of contacting relevant governmental departments. Coordinates and implements environmental management issues. 3. Contingency handling of environmental accidents. 4. Provides staff with training regularly to improve their capabilities, while encouraging active exchange of technical knowledge and expertise for the further improvement of environmental management.	1
	External monitoring company	1. Completes environmental monitoring of engineering operational phase based on project owner's delegation and environmental monitoring plan of operational phase as proposed in the assessment. 2. Supervises operation of environmental management situation and submits regular reports to owner.	To be determined based on scope of entrusted task
	County Environmental	1. Manages and supervises environmental protection to meet	1

Phase	Related project party	Main environmental management responsibilities	Personnel allocation
	Protection Bureau	standard requirements during operational phase. 2. Conducts daily supervision and inspection of operation of completed environmental protection facility.	

3.3 Environmental Management Training

3.3.1 Training Purpose

To ensure seamless and effective project implementation, it is necessary to provide environmental management and supervision personnel from the owning company, supervision company and contractor with training on environmental protection knowledge and skills as well as training on various environmental management measures in EIA and ESMP. This will ensure that they fully comprehend and are well-acquainted with engineering environmental protection and have acquired the competency for project environmental management and supervision. Hence providing personnel and technical assurance to the implementation of various environmental protection measures in ESMP.

3.3.2 Training Objective

Personnel from owning company, supervision company and contractor, who engage in environmental management and supervision of the project.

Each construction contractor and supervision company will ensure that their employees will receive functional trainings relating to environment and laws and regulations as required in the environmental and social management plan.

3.3.3 Training Content

Training content mainly involves environmental protection laws and regulations, environmental protection technology, ESMP environmental management measures, environmental monitoring technology, etc.

3.3.4 Training Plan

During the early stage of construction, the owning company shall organize environmental awareness training for staff from relevant departments. During construction, it shall organize personnel assigned to significant posts (including management personnel on construction site from owning company, engineering supervision company and contractor, as well as contractor project manager and on-site environmental protection leader) to take part in training on environmental management knowledge. It shall also organize relevant personnel who participate directly in water management and the contractor to take part in training on environmental management skills. During the operational phase, it shall organize management personnel from each water plant and wastewater treatment plant to receive special training on operational phase-environmental management. Refer toTable 3-2 for specific training schedule.

Table 3-2 Capability Development and Training Schedule

Training topic	Training target	Specific training contents	Unit price (10,000 yuan)	Number of attendees	Budget (10,000 yuan)
Construction phase					
Laws, regulations and policies for environmental protection	Provincial PMO County PMO, Project Owner, construction company and supervision company	I Laws and regulations for environmental protection	0.1	60	18
		II Policies and plans for environment	0.1	60	
		III Environmental management of the World Bank	0.1	60	
Implementation of environmental and social management plan	Construction Company, Project Owner and Supervision Company	I Responsibilities of environmental protection during project construction phase	0.1	50	40
		II Main tasks of environmental protection during project construction period	0.1	50	
		III Main contents of environmental protection during project construction phase	0.1	50	
		IV Environmental and social management plan (including environmental management procedure)	0.2	50	
		V Improvement and revision of environmental and social management plan	0.1	50	
		VI Internal monitoring methods, data collection and processing etc.	0.1	50	
		VII Construction safety	0.1	50	
Subtotal of construction phase					58
Operational phase					
Inspection and report of environmental monitoring	Project operation company	Inspect environmental protection facility, monitor environment quality and compile reports	0.2	20	4
Environmental protection facilities and measures	Project operation company	I Rules, regulations and procedures of environmental safety	0.2	20	8
		II Contingency plan for facility faults	0.2	20	
Subtotal of operational phase					12
Total					70

Chapter IV Environmental Social Impact and Mitigation Measures

The main components of the project includes improvement of urban water supply facilities, upgrading of rural drinking water safety and construction of new rural sewage treatment facilities. This chapter summarizes all the main environmental and social impacts involved in this project and the corresponding mitigation measures/action plans. It forms the environmental and social management plan for the integration of urban and rural water supply and sewage treatment projects in Jiangxi City. It also sets a clear budget of all measures and the institution for implementation and supervision. The major environmental impacts and mitigation measures during the design phase, construction phase and operational phase are shown in Table 4-1 to Table 4-8. The Environmental Implementation Regulations have been formulated as an annex to the environmental and social management plan in response to common measures and mitigation measures.

Environmental impacts and mitigation measures during the design stage are summarized in 4-1. Table 4-2 to 4-8 show the environmental impacts and mitigation measures during the construction phase and operational phase. Table 4-9 displays the social impacts and mitigation measures. There are 6 sub-projects in this main project which relies on existing reservoirs as water sources. This involves 10 dams and hence, the project has completed the *Dam Safety Assessment Report*. Before the project is put into operation, all dam measures shall have been rectified. The action plan and rectification plan of this project are summarized in Table 4-10.

Mitigation measures will be incorporated into detailed design, bidding documents, construction contracts and project management manuals. They are to be implemented by design units, contractors and implementing agencies under the supervision of PMO, the local environmental protection department and the environmental experts in this project team. The effectiveness of these measures will be assessed on the basis of environmental inspection and monitoring results to determine whether these measures are to be continued or improved/adjusted.

Table 4-1 List of Environmental Impact and Mitigation Measures During Design Phase

County	Sub-project name	Environmental focal point	Potential Impact	Mitigation/prevention measures	Implementing agency	Supervisory body
Yongxin County	Modification of tap water pipeline network in urban area	River He	The original design scheme adopts a large excavation plan to pass through River He, which has a large influence on it.	A directional transfer construction scheme with less environmental impact, about 350 meters long, shall be adopted.	Feasibility study unit	Provincial PMO
	Yongxin County water plant construction project	Hengxi Village 3rd batch	Pipeline construction temporarily occupies farmland, affecting farming	For the sakes of farmland, pipeline construction to be laid along the bank		
	Consolidation and improvement of Rural drinking water safety	Ancient trees	The ancient trees of Yongxin Shiqiao Town need to be transplanted in the original design scheme.	Avoidance measures are adopted in the design and the pipeline is increased by 85 m.		
Nanfeng County	Extension of town pipe network	Underground infrastructure(cables and gas pipelines)	The pipeline from Shishan town to Luoxi Village is routed through the Fu-Gan optical cable. The gas pipeline is laid on the side of the optical cable, while the present optical cable and the gas pipeline are in the road green belt. There may be problems with gas pipe network and optical cable breakage during construction.	This design is designed to reduce the influence of the water supply pipeline on the current pipeline. The pipe length is about 550 meters in the non-motorized driveway, which is 10 meters away from the green belt. Road damage and recovery works are increased.		
		Public housing	The original design scheme needs to pass through public housing and has a disturbing influence on it.	In order to avoid public housing, a bypass is planned and the pipeline is increased by 125m.		
		Laixi Primary School	The original scheme pipeline construction affects the students, with a larger construction area and higher noise level.	The optimized design pipeline route shall be reasonable for Laixi Primary School. Pipeline shall be laid across the school road, increasing by about 100m.		
Dongxiang District	Construction of urban water plant	Technical School in Dongxing District, Xiao Huang's Nursing Home	The original plan pipeline construction affects the surrounding residents, with a larger construction area and higher noise level.	The optimized design pipeline route shall be reasonable for the technical school and the nursing house. Pipeline shall be increased by 353m.		
	Extension of County city pipe network	Ancient trees	In the design scheme, it is necessary to transplant the ancient trees in the growth area of the ancient trees in Yong Shan Town.	To avoid the ancient trees, a bypass is planned and the line is increased by 160m.	Feasibility study unit	Provincial PMO
Leping City	Construction and modification of urban water plant	Leping 307, Provincial Highway	The original design scheme passes through the provincial road of 307. The impact range of water and soil erosion in the road construction is large, affecting the travel of the surrounding residents.	The optimum design scheme shall adopt pipe jacking construction. To reduce the influence of noise, the mechanical equipment with strong process performance and low noise levels shall be chosen.		
	Extenstion of town pipe network	Pancun Ancestral Hall	The original design scheme needs to go through Pancun Ancestral Hall	In order to avoid Pancun Ancestral Hall, water distribution pipe line is increased by 245m with a bypass.		
Xiushui County	Construction and modification of urban pipe network	Ma'ao No. 2 Primary School	The original scheme pipeline construction affects the students, with a larger construction area and higher noise level.	The optimized design pipeline route is reasonable for Ma'ao No 2 Primary School. Pipeline length is increased by about 63m.		
	Construction and modification of town pipe network	Donjin River.	The original design scheme has a potential impact on river flooding and environment.	The pipeline is laid along the current bridge across the river, crossing the Dongjin River to reduce the impact on the river.		
	Construction of new sewage pipe network and sewage treatment plant	Ancestral Hall	The original design scheme is close to the Ancestral Hall (about 30m). Construction noise and the odor generated by operation may affect the worship of the surrounding residents.	The optimization scheme is designed to set up acoustic barriers on one side of the Ancestral Hall to reduce the influence of construction noise. The sewage treatment process design adopts the integrated sewage treatment technology, which has less environmental impact.		

Table 4-2 List of Environmental Impact and Mitigation Measures for Sub-projects in Yongxin County

Project Name	Time interval	Activities	Environmental sensitive point	Potential Impact	Mitigation/prevention measures	Implementing agency	Supervisory body	Budget (10,000 yuan,)
Sub-project Project in Yongxin County	Construction phase	Civil construction, construction materials and earthwork transportation, construction access road, etc.	Jiangdongbian , Longyuankou, Ma Pi, Wangshe Village, E Village, Xiquan Mountain, Shangyao and other Villages along the line	Dust, wastewaterand noise generated from construction machinery and transport vehicles, construction waste, etc.	According to Annex 1 of the Environmental Management Plan, the urban and rural water supply integration in Jiangxi Province and the environmental protection implementation regulations of the rural sewage treatment project shall be implemented.	Project Contractor, Construction Supervision	CPMO, County-level Environmental Protection Bureau	Included in project costs
		Extension of pipe network in Shiqiao Town	Ancient trees	The pipeline route of the project is about 15m away from the ancient trees, which is mainly influenced by construction dust.	Construction activities shall be carried out strictly in accordance with the requirements of Annex 2 of the Environmental Social Management Plan.	Project Contractor, Construction Supervision	Local forestry department	Included in project costs
		Extension of County-town Pipeline Network in Yongxin County	G319、S228	The distance pipes of G319 and S228 are 20m and 15m respectively, which is parallel to the pipeline but do not cross it. The main influence is the possible settlement of the road surface during and after construction.	The highway management department requires the design unit to propose the construction scheme for the pipeline section concerned with the highway facilities during project preparation. The design unit shall inform the highway department before the construction and construction can only be initiated with permission from the highway department. The project implementation process shall strictly adhere to the requirements of highway management, to ensure no damage to the highway facilities, no occupation of highway land, strict control of the width of operational belt and compliance with relevant national operation specifications. The affected area shall be restored immediately after construction.	Project Contractor, Construction Supervision	Local traffic management department	Included in project costs
		Digging and disposing soil	/	The area of disturbance disturbance and damage is 86.69 hm^2. Corresponding maximum amount of water and soil erosion caused is 44532t and the new amount of water and soil erosion is 44302t.	(1) Control area of tap water plant Engineering measures: site leveling 2.78hm^2, topsoil backfilling 9,700m^3, arch-shaped framework slope protection of 1.78hm^2, intercepting ditch of 442m, flood discharge channel is 467m, drain ditch is 680 m, rain pipe is 1760m, and rainwater well is 26. Plant measures: gardening 1.47hm^2, parking lot afforested for 200m^2. Temporary measures: topsoil stripping removed to 9,700m^3, soil-filled straw bag retaining wall is 210m, tarpaulin covers 7000 m^2, drain ditch is 220m, 2 sand basins, 1 car washing tank and removes concrete floor for 450m^3. (2) Control area of pipeline works and ancillary facilities Engineering measures: 28.63hm^2 of site leveling, 85,900m^2 of topsoil backfilling and 8.90hm^2 of restoring cultivation. Plant measures: 13.00hm^2 of Green Belt Recovery, 1.65hm^2 of forestation and grass planting and 5.08hm^2 of sowing grass; Temporary measures: 85,900m^3 of topsoil stripping, 2,500m of soil-filled straw bag retaining wall, 5,000m^2 of tarpaulin covers and 100 m color steel plate.	Project Contractor, Construction Supervision	County-level CPMO, Local Water Conservancy Bureau	Included in water and soil conservation works
	Operational phase	Expansion of urban water plant	Longyuankou Reservoir	The water source protection zone has not been divided and it is difficult to guarantee the water quality of the reservoir for a prolong period	1. Set up primary and secondary protection zones, where the range of the first-level protection zone is from the water intake point to the water area of 1 km to the downstream 100m from the water intake point and the land area extending 100m from the water intake point side to the back surface of the water intake point. The sec-	local Water Conservancy Bureau	Local Environmental Protection Bureau ; Water Conservancy Bureau	Government budget

Project Name	Time interval	Activities	Environmental sensitive point	Potential Impact	Mitigation/prevention measures	Implementing agency	Supervisory body	Budget (10,000 yuan,)
					ond-level protection zone is to start from land area of 100m from the side of the water area and the water intake point of 3000m the upper bound of the primary protection zone.			
					Installing on-line water quality monitoring system.	Water plant operational unit,	local Water Conservancy Bureau	included in the operation cost of the water plant
				During low-water level years, the power generation capacity of the Longyuankou Reservoir will be reduced by 1130,000 kilowatt hour.	It is recommended to sign the agreement with Longyuankou Hydropower Station to generate electricity on the premise of meeting the urban water supply and irrigation water. The corresponding compensation for Longyukou Hydropower Station is carried out by 07 yuan/m^3, and relevant compensation measures have been included in the social evaluation report.	Water plant operational unit	Local Environmental Protection BureauWater Conservancy Bureau	Included in the operating expenses of the water plant
		Tap water plant	/	Tap Water plant backwashes waste water, sludge discharge waste water etc.	The backwashed waste water in tap water plant is lifted to the water distribution well after being lifted by the reuse water tank. The sludge discharged from the sedimentation tank is returned to the dewatering machine room for reuse after being concentrated by the sludge concentration tank. The remaining part enters the dewatering machine room to be dehydrated. The filtrate generated by the sedimentation process reaches the municipal sewage standard and can be reused for irrigation and road irrigation in the plant area. The domestic sewage of the pressurized pumping station shall be discharged into the municipal pipe network after being treated by the septic tank.	Water Plant Operational and Maintenance Unit	Municipal Environmental Protection Bureau	Included in the operating expenses of the water plant
		Running water plant	Authoritative staff	Chlorine gas leakage may occur in the chlorine-intensive room	(1) to establish safe operation procedures, the staff must be specially trained to operate strictly according to the operation procedures, and the education management shall be strengthened to avoid the leakage of chlorine gas caused by operation mistakes. (2) to strengthen liquid chlorine storage and transport management (3) to strengthen the maintenance and management of equipments (4) to ensure being equipped with necessary protective equipments (5) to formulate contigency plan; to handle in the remote plan, if necessary, to promptly alarm and timely cooperate to deal with the accident. (6) green tree species near the water plant shall be the select with strong resistance to chlorine gas, such as yew, hemlock, jujube, Holly, etc.	Water Plant Operational and Maintenance Unit	Local Environmental Protection BureauEnvironmental Protection Bureau	Included in the operating expenses of the water plant
		Running water plant	/	Sludge and domestic garbage	1, according to the specification of design construction, the pipeline maintenance and accident emergency work shall be properly done; pipeline maintenance workers shall receive special training; important node along the pipeline shall be set up with clear identification in order to avoid other units damage in pipeline construction. 2. When crossing major river channels and highways, the	Water Plant Operational and Maintenance Unit	Local Water Conservancy BureauEnvironmental Protection Bureau	Included in the operating expenses of the water plant

Project Name	Time inter-val	Activities	Environmental sensitive point	Potential Impact	Mitigation/prevention measures	Implementing agency	Supervisory body	Budget (10,000 yuan,)
					materials shall be used to enhance the ability of anti-risk; the pipe shall be set up at a certain distance to set the cut-off valve and the bypass pipe. 3, to establish and improve the engineering water inlet water pollution emergency plan, once finding upstream pollution incident, the water intake and related measures shall be taken in time, according to the pollu-tion disposal situation, real time optimization of diversion scheme, to ensure the safety of water diversion water as much as possible.			

Table 4-3 List of Environmental Impact and Mitigation Measures for Sub-projects in Jinxi County

Project Name	Time interval	Activities	Environmental sensitive point	Potential Impact	Mitigation/prevention measures	Implementing agency	supervisory body	Budget (10,000 yuan,)
Sub-project in Jinxi County	Construction phase	Civil construction, construction materials and earthwork transportation, construction road, etc.	Yu Fang Village, Shanchengxiang Village, Xia Jimiao, Tianxiantou, Wangjiadun, Li Jia-bian, Zhuqiao Village, Maotaofeng, Yinshan Village and other Villages along the line	Dust, wastewater and noise generated from construction machinery and transport vehicles, construction waste etc.	According to Annex 1 of the Environmental Management Plan, the urban and rural water supply integration in Jiangxi Province and the environmental protection implementation regulations of the rural sewage treatment project shall be implemented.	Project Contractor, Construction Supervision	PMO local Environmental Protection BureauEnvironmental Protection Bureau	Included in project costs
	Operational phase	Construction of Huangtong town Water Plant	Gao Fanghe River	It belongs to the new water source area, which is not divided into the water source protection area. It is difficult to guarantee the water quality of the reservoir for a prolong period	1. Set the first-grade and second-grade protection zones. The first-grade protection zones is from the water intake point to the water area of 1 km to the downstream 100m from the water intake point and the land area extending 100m from the water intake point side to the back surface of the water intake point. The second-grade protection zone is in the upper bound of the primary protection zone, A land area of 100m from the surface of the water area and the water intake point of 3000m, and 100m extensive from the upstream face of water to the back surface of the water surface. 2. Strengthen water conservation and environmental protection publicity. Install online water quality monitoring system	local Water Conservancy Bureau	Local Environmental Protection BureauWater Conservancy Bureau	Government budget t;
					Install online water quality monitoring system	Water plant operational unit	local Water Conservancy Bureau	included in the operation cost of the water plant
				Without other important water users It will have less impact on other users.	Water intaking shall strictly adhere to the approved scale.	Water plant operational unit	Local Environmental Protection BureauWater Conservancy Bureau	/
		Operation of tap water plant	/	Tap water plant backwashes waste water, sludge discharge waste water etc.	The backwashed waste water in tap water plant is lifted to the water distribution well after being lifted by the reuse water tank. -The sludge discharged from the sedimentation tank is returned to the dewatering machine room for reuse after being concentrated by the sludge concentration tank, the remaining part enters the dewatering machine room to be dehydrated. The filtrate generated by the sedimentation process reaches the municipal sewage standard and can be reused for irrigation and road irrigation in the plant area. -The domestic sewage of the pressurized pumping station shall be discharged into the municipal pipe network after being treated by the septic tank.	Water Plant Operational and Maintenance Unit	Local Environmental Protection BureauEnvironmental Protection Bureau	Included in the operating expenses of the water plant
		Operation of tap water plant	/	Noise impact of various pump stations	_The noise reduction and noise reduction measures of damping cushion and sound insulation door and window shall be adopted for the dewatering machine room and the back washing room, and the sound absorption wall measures shall be added in addition to the above measures in pumping house ; --Strengthen the operation and maintenance of the equipment. Strictly control the key noise sources (such as fan, water pump, etc.), propose noise control requirements to the equipment manufacturers, and choose low	Water Plant Operational and Maintenance Unit	Local Environmental Protection BureauEnvironmental Protection Bureau	Included in the operating expenses of the water plant

					noise equipment as much as possible;			
		Runningtap water plant	/	Sludge and domestic garbage	The sludge water of the water purification plant is dehydrated to the water content less than 60% by drying. Thereafter, the sludge water shall be transported to the waste landfill site at regular intervals. --The staff's domestic garbage shall be collected and disposed of by the local sanitation department.	Water Plant Operational and Maintenance Unit	Municipal Environmental Protection Bureau	Included in the operating expenses of the water plant
		Running the water plant	Authoritative staff	Chlorine gas leakage may occur in the Chlorine-intensive room	(1) to establish safe operation procedures, the staff must be specially trained to operate strictly according to the operation procedures, and the education management shall be strengthened to avoid the leakage of chlorine gas caused by operation mistakes. (2) to strengthen liquid chlorine storage and transport management (3) to strengthen the maintenance and management of equipments (4) to ensure being equipped with necessary protective equipments (5) to formulate contigency plan; to handle in the remote plan, if necessary, to promptly alarm and timely cooperate to deal with the accident. (6) green tree species near the water plant shall be the select with strong resistance to chlorine gas, such as yew, hemlock, jujube, Holly, etc	Water Plant Operational and Maintenance Unit	Local Environmental Protection Bureau	Included in the operating expenses of engineering
		Running the water plant	/	Water quality pollution risk of water intake and pipeline	1, according to the specification of design construction, the pipeline maintenance and accident emergency work shall be properly done; pipeline maintenance workers shall receive special training; important node along the pipeline shall be set up with clear identification in order to avoid other units damage in pipeline construction. 2. When crossing major river channels and highways, the materials shall be used to enhance the ability of anti-risk; the pipe shall be set up at a certain distance to set the cut-off valve and the bypass pipe. 3, to establish and improve the engineering water inlet water pollution emergency plan, once finding upstream pollution incident, the water intake and related measures shall be taken in time, according to the pollution disposal situation, real time optimization of diversion scheme, to ensure the safety of water diversion water as much as possible.	Water Plant Operational and Maintenance Unit	Local water conservation bureau	Included in the operating expenses of engineering

Table 4-4 List of Environmental Impact and Mitigation Measures of Sub-Projects in Nanfeng County

Project Name	Time interval	Activities	Environmental sensitive point	Potential Impact	Mitigation/prevention measures	Implementing agency	Supervisory body	Budget (10,000 yuan,)
Sub-project in Nanfeng County	Construction phase	Civil construction, construction materials and earthwork transportation, construction access road, etc.	Shishan town, Xi Village, Dong Village, Shangkaokeng Village Xinjiabao Village, Pengjiabao Village, Zihe Village, Guanjiabao Village and other Villages along the line.	Dust, wastewater and noise generated from construction machinery and transport vehicles, construction waste etc.	According to Annex 2 of the Environmental Management Plan, the urban and rural water supply integration in Jiangxi Province and the environmental protection implementation regulations of the rural sewage treatment project shall be implemented.	Project Contractor, Construction Supervision	PMO local Environmental Protection Bureau	Included in project costs
		Extension of town pipe network in Nanfeng County	G206	G206 runs parallel to the construction pipeline, about 20m away from the pipeline. The main impact could be the possible settlement of the road surface during and after the construction.	The highway management department requires the design unit to propose the construction scheme for the pipeline section concerned with the highway facilities during project preparation. The design unit shall inform the highway department before the construction and the construction can only be initiated with permission from the highway department. The project implementation process shall strictly adhere to the requirements of highway management to ensure no damage to the highway facilities, no occupation of highway land, strict control of the width of operation belt and compliance with relevant national operation specifications. The affected area shall be restored immediately after construction.	Project Contractor, Construction Supervision	Local traffic management department	Included in project costs
		Extension of town pipe network in Nanfeng County	Gas pipeline	The project is extended to the pipeline construction of Shishan Town by the County water plant pipe network, which is 15m away from the gas pipeline in Shishan town. The project construction or inadequate supervision may affect the gas pipe network, causing leakage and breakage.	During construction, temporary measures shall be taken, such as adding piles, beam erection or local excavation protection etc., to protect the pipelines above and to ensure their normal operation during construction and their safety after construction. Within 5m on both sides of the pipleline, it is prohibited to plant trees, use fire, soil, stones or stack heavy objects and other corrosive materials. It is forbidden to use mechanical tools for excavation and mining, construction of buildings and other buildings behaviors threatening the pipeline security etc. Without the permission of the management unit, it is forbidden to construct, expand highway, bury underground cables, optical cables etc within five to fifty meters from the center line of the pipeline. Before construction, the gas company shall be informed and agree with the other party, the construction scope shall be more than 50 cm away from the gas pipeline, and the pipeline depth of gas company is about 1.2m. The pipeline shall not be damaged during construction. Prepare the risk contingency plan beforehand and equip the corresponding personnel and facilities	Project Contractor, Construction Supervision	Gas Company	Included in project costs
		Extension and Construction of Pipeline Network in Shishan town and County	Optical cable	The pipeline route of the project is about 15m away from the optical cable. Construction involves excavation, compaction, rolling etc, which may cause certain potential safety hazards and threats to the optical cable.	For the engineering section concerned with optical cable, detailed construction plan shall be formulated before construction. The construction plan shall be reported to the pipeline management department. Construction activities can be carried out only after the approval of the department. Construction shall be carried out strictly in accordance with the national standard operation. The optical cable installation shall be protected. During construction, warning signs shall be set before and after the construction section, corresponding safety management plan shall be made, cross-laying of pipeline lines shall be reduced; inflammable and explosive materials shall not be piled up beside the optical cable communication line. Construction waste, earthwork, construction materials and the like shall be prohibited from being piled up	Project Contractor, Construction Supervision	Optical cable management department	Inclusion of project costs

Project Name	Time interval	Activities	Environmental sensitive point	Potential Impact	Mitigation/prevention measures	Implementing agency	Supervisory body	Budget (10,000 yuan,)
					above the surface of the optical cable. Trunk pipeline shall be worn under the cross-line. During construction, temporary measures (such as adding piles, beam erection or local excavation protection etc.) shall be taken to protect the pipelines above and ensure their normal operation during construction and their safety after completion. It shall be restored in time after the construction is completed. Prepare the risk contingency plan beforehand and equip the corresponding personnel and facilities			
		Extension of the County town pipe network in the town of the Qia bay	Ancient tree	The project pipeline route is about 15m away from three ancient trees , with ages 1000 years, 280 years and unknown. They are considered national and tertiary protected ancient trees respectively. Mainly affected by construction dust.	Construction activities shall be carried out strictly in accordance with the requirements of Annex 2 of physical cultural resources management plan in the Environmental Social Management Plan.	Project Contractor, Construction Supervision	Local forestry department	Included in project costs
		Extension of water supply network in Laixi Town	Laixi Primary School	Project pipeline is 5m away from Laixi Primary School. Noise and dust impact during construction.	During the construction of the project, attention shall be paid to the control of noise level. Construction time shall be arranged in the non-teaching time as much as possible to avoid the influence on the classrooms. Watering will be done during construction to reducedust. Extra attention shall be paid to safety. The construction area shall set temporary noise barrier no less than 2m with higher noise reduction effect. After the construction, the environmental impact of the construction shall be promptly restored.	Project Contractor, Construction Supervision	Local traffic bureau, local police team	1

Table 4-5 Schedule of Environmental Impact and Mitigation Measures for Sub-projects in Leping County

Project Name	Period	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/Control Measures	Implementing Agency	Supervisory Body	Budget (10,000 yuan)
Leping County sub-project	Construction phase	Civil construction, construction materials and earthwork transportation, construction access road, etc.	Nearby Villages including Bayu, Guankou and its new rural area, Chexi, Kuqian, Gujinshan and Liucha	Dust, wastewater and noise by machinery & vehicles, construction waste etc.	As required by Annex 2 of *Environmental Management Plan - China Jiangxi Provincial Integrated Rural and Urban Water Supply and Wastewater Management Project*	Project Contractor, Construction Supervisor	PMO local Environmental Protection BureauEnvironmental Protection Bureau	Included in project costs
		Construction & modification of urban water plants	S307	With a distance of 15m, S307 runs parallel with the pipeline of the project. The main effect is the possible inccurence of earth subsidence during or after the construction.	The highway management department requires the design unit to propose the construction scheme for the pipeline section concerned with the highway facilities during project preparation. The design unit shall inform the highway department before the construction and the construction can only be initiated with permission from the highway department. The project implementation process shall strictly adhere to the requirements of highway management to ensure no damage to the highway facilities, no occupation of highway land, strict control of the width of operation belt and compliance with relevant national operation specifications. The affected area shall be restored immediately after construction.	Project Contractor, Construction Supervisor	Local traffic management department	Included in the project cost
		Construction & modification of urban water plants	Optical cable	The pipeline route of the project runs parallel to the optical cable and the distance is about 10m. The construction involves digging, punning and rolling soil, which may cause certain safety hazards and threats to the optical cable.	Optical cable protection requirements state that it is strictly prohibited to break ground within 5m, to excavate within 3m and to carry out engineering survey and construction within 50m. It is prohibited to pile up flammable and explosive materials alongside the optical cable communication line, or construction waste, earth work and construction materials on the ground above the cable. Prior permission of the management units is required and relevant precautionary measures shall be taken if there is any possible danger to the cable. Prepare the risk contingency plan beforehand and equip the corresponding personnel and facilities	Project Contractor, Construction Supervisor	Optical cable management department	Included in the project cost
		Extension of urban water supply pipeline network	Leping Qimingxing Experimental Kindergarden	The pipeline of the project is about 15m from Leping Qimingxing Experimental Kindergarden. It will be impacted by noise and dust during the construction.	During the construction of the project, attention shall be paid to the control of noise level. Construction time shall be arranged in the non-teaching time as much as possible to avoid the influence on the classrooms. Watering will be done during construction to reducedust. Extra attention shall be paid to safety. The construction area shall set temporary noise barrier no less than 2m with higher noise reduction effect. After the construction, the environmental impact of the construction shall be promptly restored.	Project Contractor, Construction Supervisor	Local traffic bureau, local traffic police brigade	1
Leping Sub-project	Construction phase	Extension of Hougang Town water plant pipeline network	Gas pipeline	The project is to pass through the gas pipeline in Hougang Town. The main trunk pipeline is planned to pass under the crossing pipeline. Improper construction or supervision may lead to adverse effects like leakage or breakage on the gas pipeline network.	It is necessary to take provisional measures during the construction, such as adding piles, setting up beams or excavating underground locally to protect the pipeline above, and to ensure normal operation and security after the construction. Within 5m along the two sides of the center pipeline, any possible dangerous act is strictly prohibited such as planting trees, setting fire, digging earth, quarrying stones, or piling up heavy stuff or corrosive substance, excavating by means of machinery equipment, building houses or any other structures and so on. It is prohibited to build or extend roads, burry cable or optical cable underground within 5 to 50m from the center pipeline without prior permission of relative management units. It is necessary to inform the gas company before the activity and obtain its permission, and make sure the distance between the construction scope and the gas pipeline is more than 50cm. As the gas pipeline is buried about 1.2m deep underground, it is important to make sure the pipeline is not damaged during the activity. Prepare the risk contingency plan beforehand and equip the corresponding personnel and facilities	Project Contractor, Construction Supervisor	Gas pipeline management department	Included in the project cost
			Ancient trees	The ancient trees are about 10m away from the project pipeline route and may suffer from construction dust.	Construction activities shall be carried out in strict accordance with the requirements of Annex 2 of the Environmental Social Management Plan – Plan of Physical Cultural Resource Management.	Project Contractor, Construction Super-	Local forestry department	Included in the project cost

Project Name	Period	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/Control Measures	Implementing Agency	Supervisory Body	Budget (10,000 yuan)
						visor		
			Leping County Star Experimental Kindergarden	Star Experimental Kindergarden is about 10m from the project pipeline and may suffer from construction noise and dust.	During the construction of the project, attention shall be paid to the control of noise level. Construction time shall be arranged in the non-teaching time as much as possible to avoid the influence on the classrooms. Watering will be done during construction to reducedust. Extra attention shall be paid to safety. The construction area shall set temporary noise barrier no less than 2m with higher noise reduction effect. After the construction, the environmental impact of the construction shall be promptly restored.	Project Contractor, Construction Supervisor	Local traffic bureau, local traffic police brigade	1
		Extension of the existing pipeline network of Yongshan Water Plant	Ancient trees	The ancient trees are about 8m away from the project pipeline route and may suffer from construction dust.	Build a brick fence around the ancient trees during the construction. It is recommended that the radius of the fence be 50m more than that of the root of the tree and the fence be 50m above the ground for fear that the construction waste liquid might permeate into the root soil and result in hardened soil and bad air breathability, hence affecting the growth of the trees or impairing its roots directly. It is prohibited to operate with fire or gas around the trees, and it is necessary to keep clean around the trees, without clutter but sufficient fire extinguishers. Layered backfill with planting soil is suggested to ensure that the soil used caters to the growth of the trees. It is also necessary to improve the constructors' protection awareness.	Project Contractor, Construction Supervisor	Local forestry department	Included in the project cost
Leping Sub-project	Construction phase	Digging and disposing soil	/	The area of disturbance disturbance and damage is 46.14hm^2. After balancing allocation of earthwork and stonework, it needs to borrow 67,700m^3 and dispose 72,300m^3. The possible total water and soil erosion is 3515t and newly increased water and soil erosion 3321t.	(1) Control Area of Water Treatment Plant Engineering measures: site formation 2.68m^2, topsoil backfill 7700m^3, drainage ditch 2,340m; Plant measures: landscaping 2.57hm^2, sowing grass seeds 886m^2, parking lot greening 208m^2, and planting 46 trees; Temporary measures: topsoil stripping 7700m^3, soil- or straw-filled bag retaining wall 202m, tarpaulin covering area 2,566m^2, drain ditch 1,286m, sand basin 4, car washing tank 1. (2) Control Area of Pipeline Project Engineering measures: site formation 8.70hm^2, topsoil backfill 2600m^3, second ploughing 15.02hm^2; Plant measures: Green belt restoration 7.84hm^2, forest planting and grass seeding 0.86hm^2; Temporary measures: topsoil stripping 2600m^3, soil- or straw-filled bag retaining wall 5,400m, tarpaulin covering 38,880m^2, color steel plate 5,400m, and sand basin 41. (3) Control Area of Crossing Project Engineering measures: second ploughing 0.18hm^2; Temporary measures: color steel plate 678m, drainage ditch 650m, and sand basin 46.	Contractor, Construction Supervisor	PMO, local Environmental Protection Bureau, local Water Conservancy Bureau	Included in the project cost of water and soil conservation
	Operational phase	Construction & modification of urban water plants	Communist reservoir	It belongs to the newly added water source area and water source conservation area has yet to be divided. Hence it is difficult to guarantee the water quality of the reservoir for a prolong period.	1. Set primary and secondary conservation areas. The primary conservation area covers the water area from 1km upstream of the water intake point to 100m downstream, the beach area at one side of the water intake point and the land area of 100m from the angle of the head-on dam to the inverse side. The secondary conservation area is 3,000m upstream of the upper bound of the primary conservation area, the beach area at one side of the water intake point and the land area of 100m from the angle of the head-on dam to the inverse side. 2. Install online monitoring system of water quantity and quality.	Water plant operational unit, local Water Conservancy Bureau	Local Water Conservancy BureauEnvironmental Protection Bureau	The water source protection area shall be included in the water conservancy department; The online monitoring system shall be included in the operation cost of the

Project Name	Period	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/Control Measures	Implementing Agency	Supervisory Body	Budget (10,000 yuan)
								water plant
				The power generation capacity of the Yongshan, Gutian and Guxi hydropower stations at the downstream of the dam site of the reservoir is reduced by 260,000 kwh respectively.	1. It is recommended to enter into agreement with Yongshan, Gutian and Guxi Hydropower Station to generate electricity on the premise of meeting the urban water supply and irrigation water, and compensate Yongshan, Gutian and Guxi hydropower station by 0.07 yuan/m^3. Relevant compensation measures have been included in the social evaluation report;	Water plant operational unit	Local Water Conservancy Bureau	Included in theoperational cost of the water plant
			/	Backwashed wastewater and sludge-discharged wastewater of tap water plant filter tank	-The backwashed waste water in tap water plant is lifted to the water distribution well after being lifted by the reuse water tank. -The sludge discharged from the sedimentation tank is returned to the dewatering machine room for reuse after being concentrated by the sludge concentration tank, the remaining part enters the dewatering machine room to be dehydrated. The filtrate generated by the sedimentation process reaches the municipal sewage standard and can be reused for irrigation and road irrigation in the plant area. -The domestic sewage of the pressurized pumping station shall be discharged into the municipal pipe network after being treated by the septic tank.	Water plant operational unit	Environmental Protection BureauLocal Environmental Protection Bureau	Included in the operating expense of the water plant
			/	Noise impact of various pump stations	-The noise reduction and noise reduction measures of damping cushion and sound insulation door and window shall be adopted for the dewatering machine room and the backwashing room. Sound absorption wall measures shall be added in addition to the above measures in pumping stations. -Strengthen the operation and maintenance of the equipment. Strict control of key noise sources (such as fan, water pump etc.). Propose noise control requirements to the equipment manufacturers and choose low noise equipment as much as possible.	Water plant operational unit	Environmental Protection BureauLocal Environmental Protection Bureau	Included in the operating expense of the water plant
			/	Sludge and domestic garbage	----The sludge water of the water treatment plant is transported to the refuse landfill at regular intervals for disposal after being dehydrated to the water content less than 60%. ----Staff's domestic garbage is collected together by local sanitation unit for unified disposal.	Water plant operational unit	Local Environmental Protection BureauEnvironmental Protection Bureau	Included in the operating expense of the water plant
			Authorattive staff	Chlorine gas leakage may occur in the chlorine-intensive room	(1) to establish safe operation procedures, the staff must be specially trained to operate strictly according to the operation procedures, and the education management shall be strengthened to avoid the leakage of chlorine gas caused by operation mistakes. (2) to strengthen liquid chlorine storage and transport management (3) to strengthen the maintenance and management of equipments (4) to ensure being equipped with necessary protective equipments (5) to formulate contigency plan; to handle in the remote plan, if necessary, to promptly alarm and timely cooperate to deal with the accident. (6) green tree species near the water plant shall be the select with strong resistance to chlorine gas, such as yew, hemlock, jujube, Holly, etc	Water plant operational unit	Local Environmental Protection Bureau	Included in the operating expense of engineering
			/	Water quality pollution risk of water intake and pipeline	1, according to the specification of design construction, the pipeline maintenance and accident emergency work shall be properly done; pipeline maintenance workers shall receive special training; important node along the pipeline shall be set up with clear identification in order to avoid other units damage in pipeline construction. 2. When crossing major river channels and highways, the materials shall be used to enhance the ability of anti-risk; the pipe shall be set up at a certain distance to set the cut-off valve and the bypass pipe. 3, to establish and improve the engineering water inlet water pollution emer-	Water plant operational unit	Local Environmental Protection Bureau	Included in the operating expense of engineering

Project Name	Period	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/Control Measures	Implementing Agency	Supervisory Body	Budget (10,000 yuan)
					gency plan, once finding upstream pollution incident, the water intake and related measures shall be taken in time, according to the pollution disposal situation, real time optimization of diversion scheme, to ensure the safety of water diversion water as much as possible.			
		Rural water supply pipe network transformation and extension works	Happiness Reservoir, Coqing Reservoir and Red Orient Reservoir	The current water source areas shall be not divided as required by Water Conservation Bureau project, so the water quality is not so good in the long-term	set up the first class and second class water conservation areas, the former including the range distance between 1km upstream level and 100m downstream level beaches and shallow and extended 100 m bank; the latter including the range from the upper reaches of the former 3000m water and shallow and extended 100m bank	local water conservation bureau	local water conservation bureau and local Environmental Protection Bureau	Government Budget
					install online water quality monitoring system	Water plant operational unit	local water conservation bureau and local Environmental Protection Bureau	The water included in the operation cost of the water plant

Table 4-6 Schedule of Environmental Impact and Mitigation Measures for Sub-projects in Xiushui County

Project Name	Period	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/Control Measures	Implementing Agency	Supervisory Body	Budget (10,000 yuan)
Water supply sub-project of Xiushui County	Construction phase	Civil construction, construction materials and earthwork transportation, construction access road, etc.	Nearby Villages like Longbei, Bailuoqiu, Zoujiawan, Youjiacha, Zhishanyuan, Duanshang Primary School, Baitu, Chenjiazui, Songshanxia, Shangwuping, Xiawuping, Kengkoupushang, etc.	Dust, wastewater and noise by machinery & vehicles, construction waste etc.	As required by Annex 1 of Environmental Management Plan - China Jiangxi Provincial Integrated Rural and Urban Water Supply and Wastewater Management Project	Project Contractor, Construction Supervisor	Local Environmental Protection Bureau	Included in project costs
		Expansion of urban water plant in Xiushui County	Provincial Highway S304	15m away from S304 provincial road in a parallel direction Subsidence of the road surface during and after the construction, and the road hump caused by underdigging top pipe.	During the preparation period, the design institute shall put forward a construction plan based on the involved pipeline sections, and permissions shall be obtained from related highway units before the work starts. The management requirements of related highway units shall be adhered to strictly during the implementation process without impairment to the highway facilities or occupation of highway land. The breadth of working area shall be controlled strictly according to relative national working standards. Restoration work shall be done without delay in the affect area after the work is finished. For road sections crossing roads and railways, relevant protective measures shall be taken during the construction period, and strictly comply with the *Technical Specification for Top Pipeof Water Supply and Drainage Works (CECS246-2008)*	Project Contractor, Construction Supervisor	Local road management department	Included in the project cost
		Construction of the origial water pipeline	Ma'ao Town Duanshang Primary School	Construction pipeline south section 20m from Duanshang Primary School,impacted by construction noise and dust	1. Construction work shall be arranged during non-teaching time as much as possible so as not to disturb the classrooms. 2. Set temporary sound barrier of at least 2m on the construction area near the Primary School to reduce noise efficiently.	Project Contractor, Construction Supervisor	LocalEnvironmental Protection Bureau	1
		Digging and disposing soil	/	The area of the original earth's surface and the conservation facilities of water and soil disturbed and damaged by the sub-project is 40.09hm^2. The gross earthwork and stonework of the project is 410,800m^3, among which digging is 205,400m^3 and filling 205,400m^3. After balancing allocation, there is no borrowing or disposing earthwork and stonework.	(1) Control Area of Plant Area Engineering measures: site formation 0.28hm^2, top soil backfilling 7,700m^3, drainage ditches 2,340m; Plant measures: Landscaping 0.28hm^2, grass seeding 886m^2, parking lot greening 208m^2, and plantingtrees 46; Temporary measures: top soil stripping 7,700m^3, soil- or straw-filled bag retaining wall 202m, tarpaulin covering 2,566m^2, drainage ditch 1,286m, sand basin 4, car washing tank 1. (2) Control Area of Pipeline Works Engineering measures: site formation 8.70hm^2, top soil backfilling 2,600m^3, second ploughing 15.02hm^2; Plant measures: Green Belt Restoration 7.84hm^2, forest planting and grass seeding 0.86hm^2; Temporary measures: top soil stripping 2,600m^3, soil- or straw-filledbag retaining wall 5,400m, tarpaulin covering 38,880 m^2, color steel plate 5,400m, and sand basin 41. (3) Control Area of Crossing Project Engineering measures: Second ploughing 0.18hm^2; Temporary measures: Color steel plate 678m, drainage ditch 650m and sand basins 16. Water and soil conservation monitoring: the monitoring content includes disturbance disturbance of land condition, soil erosion and water and soil conservation measures. The water and soil conservation monitoring period starts from the construction preparation period to the end of the design level year, i.e.	Contractor, Construction Supervisor	local environmental protection bureau, local Water Conservancy Bureau	Included in the cost of water and soil conservation works

Project Name	Period	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/Control Measures	Implementing Agency	Supervisory Body	Budget (10,000 yuan)
					from January 2018 to December 2019, for totally 24 months. The monitoring scope is the project construction area and the direct impact area, with a total area of 66.51 hm^2. The monitoring method is combing locating observation and investigation. Evaluate the result according to the characteristics of engineering construction and the condition of soil erosion. The project set 3 observation sample plots and 5 investigation sample plots in total.			
	Operati-periodontal phase	Expansion of urban water plant in Xiushui County	Dongjin Reservoir	Annual water intake of the project accounts for 3.51% ~ 8.43% of the power generation of Dongjin Reservoir in a typical year. which will occupy the power generation water of Dongjin Reservoir;	It is recommended to enter into an agreement with Jiangxi Dongjin Power Generation Co., Ltd., to generate electricity under the premise of meeting the urban water supply and irrigation, and compensate Dongjin Power Generation Co., Ltd. by 0.07 yuan/m^3. Relevant compensation measures have been included in the social evaluation report.	Water plant operational unit	Local Water Conservancy Bureau	Included in operational cost of the water plant
				Uncertainty of long-term guarantee of reservoir water quality	Install on-line water quality and quantity monitoring system	Water plant operational unit	Local Water Conservancy Bureau	Included in the operating expense of the water plant
			/	Backwashed wastewater and sludge-discharged wastewater of tap water plant filter tank	-The backwashed waste water in tap water plant is lifted to the water distribution well after being lifted by the reuse water tank. -The sludge discharged from the sedimentation tank is returned to the dewatering machine room for reuse after being concentrated by the sludge concentration tank, the remaining part enters the dewatering machine room to be dehydrated. The filtrate generated by the sedimentation process reaches the municipal sewage standard and can be reused for irrigation and road irrigation in the plant area. ----Domestic sewage from both the water plant and the booster pumping station is discharged into the municipal pipeline network after being treated by the septic tank.	Water plant operational unit	LocalEnvironmental Protection Bureau	Included in the operating expenses of the water plant
			/	Noise impact of various pump stations	-The noise reduction and noise reduction measures of damping cushion and sound insulation door and window shall be adopted for the dewatering machine room and the backwashing room. Sound absorption wall measures shall be added in addition to the above measures in pumping stations. -Strengthen the operation and maintenance of the equipment. Strict control of key noise sources (such as fan, water pump etc.). Propose noise control requirements to the equipment manufacturers and choose low noise equipment as much as possible.	Water plant operational unit	Local Environmental Protection Bureau	Included in the operating expense of the water plant
			/	Sludge and domestic garbage	----The sludge water of the water treatment plant is transported to the refuse landfill of Shizi Town, Jiujiang County at regular intervals for disposal after being dehydrated to the water content less than 60%. ----Staff's domestic garbage is collected together by local sanitation unit for unified disposal.	Water plant operational unit	Local Environmental Protection Bureau	Included in the operating expense of the water plant
Sewage treatment sub-project of Xiushui County	Construction phase	Civil construction, construction materials and earthwork transportation, construction access road, etc.	Group 6, 13, 5 and 10 of Putian Village. Authoritative staff	Dust, wastewater and noise by machinery & vehicles, construction waste etc.	(1) to establish safe operation procedures, the staff must be specially trained to operate strictly according to the operation procedures, and the education management shall be strengthened to avoid the leakage of chlorine gas caused by operation mistakes. (2) to strengthen liquid chlorine storage and transport management (3) to strengthen the maintenance and management of equipments (4) to ensure being equipped with necessary protective equipments (5) to formulate contigency plan; to handle in the remote plan, if necessary, to promptly alarm and timely cooperate to deal with the accident. (6) green tree species near the water plant shall be the select with strong resistance to chlorine gas, such as yew, hemlock, jujube, Holly, etc	Water plant operational unit	Local Environmental Protection Bureau	Included in the operational expense of the engineering
		Digging and	/	Water quality pollution risk of	1, according to the specification of design construction, the pipeline maintenance	Water plant op-	Local water	Included in the

Project Name	Period	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/Control Measures	Implementing Agency	Supervisory Body	Budget (10,000 yuan)
		disposing soil		water intake and pipeline	and accident emergency work shall be properly done; pipeline maintenance workers shall receive special training; important node along the pipeline shall be set up with clear identification in order to avoid other units damage in pipeline construction. 2. When crossing major river channels and highways, the materials shall be used to enhance the ability of anti-risk; the pipe shall be set up at a certain distance to set the cut-off valve and the bypass pipe. 3, to establish and improve the engineering water inlet water pollution emergency plan, once finding upstream pollution incident, the water intake and related measures shall be taken in time, according to the pollution disposal situation, real time optimization of diversion scheme, to ensure the safety of water diversion water as much as possible.	erational unit	conservation Environmental Protection Bureau	operational expense of the engineering
		New construction and renovation works of Xiushui County and township network	*l*	All water plants in Xiushui County are not subject to environmental assessment and acceptance procedures	All water plant operation agencies (water companies) shall go to the local Environmental Protection Bureau as soon as possible to supplement relevant procedures to ensure environmental protection measures and environmental management methods meeting the requirements of local environmental protection authorities	Xiushui County Water Plant	Local Environmental Protection Bureau	*l*
	Operati-periodontal phase	Construction of new sewage pipe network and sewage treatment plant in Zhajin Town	Influence on Zhajin River	20m,15m,20m,15m respectively away from the pipelineSewage discharge of the sewage treatment plant will affect Zhanjin river.	1. Improve the construction of sewage collection pipe network in the district. 2. Strengthen the operation management to ensure the sewage reaches relevant standards. 3. Establish accident prevention and emergency measures.	Operational unit of sewage treatment plant	Local Environmental Protection Bureau	Included in the operating expense of the sewage treatment plant
			/	the total amount of dug earth stone generated during wastewater treatment will affect the atmospheric environment	In order to minimize the influence of odors, it is recommended to create a green isolation belt, such as planting trees, seeding grass etc., around the plant area to form a three-dimensional shelter forest system of grass, shrub and arbor. The interspace between buildings in the plant area shall be planned accordingly, especially around the areas that will generate odors. Make sure that the green area of the plant area is not less than 30%.	Operational unit of sewage treatment plant	PMO, Municipal Environmental Protection Bureau	Included in the operating expense of the sewage treatment plant
			/	30m away from Ancestral Hall Noise generated by lifting pump and treatment facilities of the sewage treatment project	Prioritize the use of advanced low-noise equipment such as submersible pump. Try to place the water pump inside the room and isolate noise by utilizing buildings. Further optimize the plane layout of the plant during the stage of construction drawing design.Equipment with high noise level shall be kept far away from the residential areas. Enforce the maintenance of water pump, check the electrical machinery as well as the concentricity of pump spindle regularly, and ensure good lubrication of the bearings. Reducing the wear of components in the pump. Properly arrange sound absorbing materials and vibration damping devices at the periphery of the inner wall of the pump room, the floor of the roof and the machine set, such as asbestos boards, shock absorbers, etc., which can effectively control and eliminate the propagation and reflection of noise.	Operational unit of sewage treatment plant	Local Environmental Protection Bureau	Included in the operating expense of the engineering
			Zhajin River	Effects of Effluent discharge on the water environment of the Zhajin River	(1) design considerations allowance, according to the maximum capacity of 0.5 times the reserved, accident situation of buffering capacity, with a considerable processing equipment (reflux pump, reflux pipe, valve and instrument, etc.), one thousand when the normal operation of equipment failure affect the processing system, startup system buffer and reflow equipment, will not be qualified to deal with water, until meet the emission standards. (2) take multiple sets of spare equipment for vulnerable equipment and ensure sufficient spare parts for maintenance and renovation. The electromechanical devices in the processing system shall be used in at least one way. (3) choose quality equipment.	Operational unit of sewage treatment plant	Local Environmental Protection Bureau	Included in the operating expense of the sewage treatment plant

Project Name	Period	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/Control Measures	Implementing Agency	Supervisory Body	Budget (10,000 yuan)
					For all kinds of machinery, electrical appliances, instruments and other equipment in the facility, we must choose the products which have good quality, low failure rate, meet the design requirements, and are suitable for long-term operation and maintenance. (4) during operation, the operator must strictly follow the rules and regulations of the treatment facilities, check the equipment regularly, carry out maintenance in time, and reduce the failure rate of the equipment. (5) the electrical equipment shall be carried out according to the grounding protection procedure; And equipped with automatic tripping circuit, main equipment operation by using the computer data monitoring, timely report to the police, and to record the scene, nature and the accident of time, etc., in order to organize workers to timely make emergency repair. All electrical equipment installation protection must meet the electrical equipment related safety regulations. (6) take the power supply of dual-circuit power supply to ensure the normal operation of power supply facilities and lines (7) formulate management measures for the operation of sewage treatment plants, and deal with the risks of power failure and emergent wastewater discharge.			
			Authoritative staff of the sewage treatment plant	Health risks to the staff in the state of accident, including gas, pathogens, etc.	(1) strengthen safety education for operators and management personnel, establish safe operation procedures and management systems, carry out strict implementation after operation, and check frequently. (2) the design of the buildings shall taken into account the sanitary requirements of water supply, drainage, heating and ventilation, lighting and lighting, and air conditioning facilities in the place where the staff works for a long time. For some sealing structures, poor ventilation conditions, mechanical ventilation is adopted. (3) the factory shall be equipped with life jackets, life belts, safety belts, safety caps and other labor protective equipment. To the operation of the under well pipeline inspection or homework workers must wear necessary protective equipment, such as safety clothing gas mask, supply air masks, gas detection instruments, test, etc., in case of poisoning, and at least two people are present. (4) the edge of the ikebana walkway is provided with a support column and lighting facilities to ensure pedestrian safety. (5) the installation and protection of all electrical equipment shall meet the safety requirements of electrical equipment and ensure the grounding protection of high-voltage equipment. (6) dangerous parts of mechanical equipment, such as transmission belts, gears, grinding wheels, etc. must be installed. (7) to strengthen the management of safety work, set up post responsibility system, the factory all of the danger area set up warning sign in eye-catching place, more than 1.2 m above the platform of a guardrail, on May gather the poisonous and harmful gas, are due and ventilation equipment, set up safety labor protection agencies, is responsible for the security of safe production and labor protection. (8) based on the actual needs of each section and easy to use, set up the production health room, toilet, bathroom, wardrobe, etc.), conditions of section and open operation, besides strengthening ventilation set shade, shall also be a lounge. The factory has a central bathroom. (9) all workers who have direct contact with sewage, sludge and household waste shall check their bodies regularly and regularly inject relevant vaccines (such as hepatitis a, hepatitis b, etc.).	Operational unit of sewage treatment plant		Equipments included in the expense of the engineering and maintenance and management included in the operational expense

Table 4-7 List of Environmental Impact and Mitigation Measures for Sub-projects in Linchuan DistrictCounty

Project Name	Period of Time	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/Prevention Measures	Implement Mechanism	Supervision Mechanism	Budget (10,000 yuan,)
Sub-project of Linchuan County	Construction Period	Civil construction, construction materials and earthwork transportation, construction access road, etc.	Wuhu Yan, Wenquan Town, Zhou Jia Village, Yang Jia Village, Zhu Jia Village, Liangxian Primary School, Dongliang Jia Village and other Villages along the line	Construction dust, construction waste water, noises generated from construction machinery and transport vehicles, construction wastes, etc.	The construction shall be implemented according to Annex 2 of the Environmental Management Plan of environmental protection implementation regulations of China Jiangxi Intergrated Rural and Urban Water Supply and Wastewater Management Project.	Project Contractor, Construction Supervision	PMO, Municipal Environmental Protection Bureau	Included in project costs
		Extension of Town Pipeline in Wenquan Town	Liangxian Primary School	Project pipeline is about 10m from Liangxian Primary School and the noise influence during construction period, and construction fugitive dust influence	During the construction of the project, attentions shall be taken to control the noise. The construction time shall be arranged in the non-teaching time as far as possible to avoid the influence on the teaching order. In the construction activities, it is necessary to pay attention to the water sprinkling and dust falling work. In the construction process, attention shall be paid to safety, and the construction area shall be provided with a temporary sound barrier of not less than 2 meters high with higher noise reduction effect; environmental restoration work shall be carried out timely on the affected area after construction.	Project Contractor, Construction Supervision	Local traffic bureau, local police team	1
		Take soil Discard soil	/	The area of disturbance and damage is 9.96hm^2; damage to the water and soil conservation facility area is 9.96hm^2; the total amount of water and soil erosion caused by the project may be 3515t, and the total amount of water and soil erosion is 3321t.	(1) Control area of water intake pump station Engineering measures: site leveling is 1487m^2, and the topsoil is back-filled with 700m^3, drain ditch is 408 meters; Plant measures: landscape greening 1487m^2, planting of 96 trees, ; Temporary measures: topsoil stripping 700m^3, the concrete floor is removed for 500m^2, build 64m of the soil-filled straw bag retaining wall, 233m^2 of the covered tarpaulin, 125 meters of the drain ditch and 2 of the sand basin. (2) Water purification plant control area Engineering measures: site leveling 2.68hm^2, and the topsoil is back-filled with 7700m^3, drainage ditches 2340 meters; Plant measures: 2.57hm^2 of garden greening, 886m^2 of sowing grass seeds , 208m^2 of greening in parking lot, and planting 46 trees; Temporary measures: 7700 m^{3}of topsoil stripping, 202 meters of soil-filled straw bag retaining wall, 2566m^2 of tarpaulin covering, 1286 meters of drain ditch, 4 sand basins and 1 car washing tank. (3) Control area of pipeline project Engineering measures: 8.70hm^2 of site leveling , and the topsoil is back-filled with 2600 m^3, 15.02hm^2 of re-cultivation; Plant measures: 7.84hm^2 of Green Belt Recovery .0.86hm^2 of forrestation and grass planting Temporary measures: topsoil stripping 2600m^3, 5400 meters of soil-filled straw bag retaining wall, 38880 m^2 of tarpaulin covering, 5400 meters of color steel plate, and 41 sand basins. (4) Control Area of Crossing Engineering Engineering measures: Re-cultivation 0.18hm^2; Temporary measures: 678 meters of color steel plate, 650 meters of drain ditch, and 46 sand basins.	Contractor, Construction Supervision	Project Dept. and local environmental protection Bureau, Local Water Conservancy Bureau	Cost to be included in water and soil conservation works
Sub-project project of Linchuan County	Operating Period	New Project of Second Water Plant in Linchuan District	Chongren River	It belongs to the new water source area, and has not divided the water source protection zone, and is difficult to guarantee the water quality of the reservoir for a long time;	1. Strengthen water-saving and environmental protection publicity; 2. Setting the primary and secondary protection zones, where the range of the first-level protection zone is 1 km upstream to 100 meters downstream from the water area and one side of water intake point to the land area 100m extended from the land surface of embankment angle to the back surface; and the second-level protection zone is 3000 meters up-	local Water Conservancy Bureau	Local Environmental Protection Bureau ; Water Conservancy Bureau	Government budget

Project Name	Period of Time	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/Prevention Measures	Implement Mechanism	Supervision Mechanism	Budget (10,000 yuan,)
					stream of one side of the back surface of the water area and water intake point and land surface extended 100 meters from the land surface of embankment agle to the back surface.			
					Installing on-line water quality monitoring system;	Water plant operating unit	Local Water Conservancy Bureau	Included in the operating expenses of the water plant
			l	The water plant filter backwash wastewater, sludge discharge wastewater etc.	- the flushing wastewater of the water plant has been upgraded to the back of the water distribution well after the recovery of the water tank; - tank mud wastewater after concentrated sludge concentration pool that the supernatant fluid recycling recycling pool, the rest into the dewatering machine room, the filtrate after precipitation treatment to city miscellaneous water standard back to factory green land irrigation, flushing roads. -- water plant, pressure pumping station staff life sewage treatment of sewage treatment back into the municipal network.	Water plant operating unit	Local Water Conservancy Bureau	/
			Huangshi Village	The noise effects of various pumping stations	-- to reduce noise, noise reduction and noise reduction measures for the dewatering machine room and the anti-flushing room, and increase the sound absorption wall measures in addition to the above measures; -- strengthen equipment operation and maintenance. Strictly control key noise sources (such as fan, water pump, etc.), make noise control requirements to equipment manufacturers, and select low-noise equipment as far as possible;			
			l	Sludge, household waste	-- the sludge water from the water purification plant will be transported to the lion town landfill site in Jiujiang County on a regular basis after the drying rate is less than 60%. -- staff living waste is collected and disposed of by the local sanitation department.			
			Authoritative staff	Chlorine gas leakage may occur in the chlorine-intensive room	(1) to establish safe operation procedures, the staff must be specially trained to operate strictly according to the operation procedures, and the education management shall be strengthened to avoid the leakage of chlorine gas caused by operation mistakes. (2) to strengthen liquid chlorine storage and transport management (3) to strengthen the maintenance and management of equipments (4) to ensure being equipped with necessary protective equipments (5) to formulate contigency plan; to handle in the remote plan, if necessary, to promptly alarm and timely cooperate to deal with the accident. (6) green tree species near the water plant shall be the select with strong resistance to chlorine gas, such as yew, hemlock, jujube, Holly, etc			
			l	Water quality pollution risk of water intake and pipeline	1, according to the specification of design construction, the pipeline maintenance and accident emergency work shall be properly done; pipeline maintenance workers shall receive special training; important node along the pipeline shall be set up with clear identification in order to avoid other units damage in pipeline construction. 2. When crossing major river channels and highways, the materials shall be used to enhance the ability of anti-risk; the pipe shall be set up at a certain distance to set the cut-off valve and the bypass pipe. 3, to establish and improve the engineering water inlet water pollution emergency plan, once finding upstream pollution incident, the water intake and related measures shall be taken in time, according to the pollution disposal situation, real time optimization of diversion scheme, to en-			

Project Name	Period of Time	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/Prevention Measures	Implement Mechanism	Supervision Mechanism	Budget (10,000 yuan,)
					sure the safety of water diversion water as much as possible.			

Table 4-8 List of Environmental Impact and Mitigation Measures for Sub-project Works in Dongxiang District

Project Name	Period of time	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/ Prevention Measures	Implement Mechanism	Supervision Mechanism	Budget (10,000 yuan,)
Water Supply Sub-project of Xiushui County	Construction Period	Civil construction, construction materials and earthwork transportation, construction access road, etc.	Shu Jia Source, Paishang New Village, Fenglin Village, Upper Xigang, Aijia Village, Cao Jia Village and other Villages along the line	Construction dust, construction waste water, noises generated from construction machinery and transport vehicles, construction wastes, etc.	The construction shall be implemented according to Annex 2 of the Environmental Management Plan of the environmental protection implementation regulations of China Jiangxi Provincial Integrated Rural and Urban Water Supply and Wastewater Management Project	Project Contractor, Construction Supervision	PMO, Municipal Environmetal Protection Bureau	Included in project costs
		Construction process of new construction of water plant in Dongxiang District	West-East Gas Transmission Pipeline	Leakage and damage to the excavation of the gas pipe network may caused by the construction of civil works; forced construction with uncleared location of the pipeline may resulting in accidents such as rupture of the pipe network, etc.	The construction scheme shall be constructed after the approval of the Company, the construction scope shall be greater than 50 cm from the gas pipeline; the large-scale operation vehicle shall be reduced passing above the gas pipeline, the width of the operation belt shall be strictly controlled, the cross-laying of pipelines shall be reduced; the corresponding safety management plan shall be made; and the operation of mechanical excavation, blasting, hoisting and hoisting shall be prohibited at the vicinity of the gas pipeline, and emergency measures shall be established in advance; additional piles, beam erection or local excavation protection shall be added in the construction. After the construction, vegetation restoration work shall be carried out on the periphery of the pipeline.	Project Contractor, Construction Supervision	Fuzhou Station of CNPC West-East Gas Transmission	Inclusion of project costs
		Extension Construction of County Pipeline Network in Dongxiang County	G320, S210, S208,S213, G60, High-speed Rail	The settlement of the road surface during the construction process and in the completion of the construction, as well as the pavement uplift caused by the under-digging top pipe, etc.	During the preparation of the project, the design unit shall put forward the construction scheme for pipeline sections related to road facilities. Before the construction, the design unit shall inform them in advance that the construction can be started only after obtaining the permission of the highway department; in the implementation of the project, the management requirements of the highway departments shall be strictly enforced, so as to ensure that the road facilities are not damaged or the highway land is not occupied; strictly control the width of the operation scope, observe the relevant national operation specifications; and restore the affected area in time after the construction is completed. For sections crossing roads and railways, relevant protective measures shall be taken during the construction period and strictly complying with the Technical Specification for Pipe Jacking of Water Supply and Sewerage Engineering (CECS246-2008)	Project Contractor, Construction Supervision	Local road management department	Inclusion of project costs
		New Project of Water Plant in Dongxiang District, Extension Project of County Pipeline Network in Dongxiang District	10m,50m,15m,15m repectively away fromDongxing Technology School, Guangchang Primary School of Dongxiang District, Pogan High School, Xiaohuang Town Nursing Home	Influence of construction on air environment of school; influence of construction of noise to students' class	1. The construction activities shall be arranged in non-teaching time as much as possible, so as to avoid the influence on the teaching order; 2. The construction section near the school shall have a temporary sound barrier with a high noise reduction effect of not less than 2 meters, so as to reduce the influence of noise; 3. Special attention shall be paid to the control of construction period during the construction of the road section near Xiaohuang Nursing Home of Dongxiang District, so as to avoid the rest period at noon and night and so as to avoid the influence of construction noise on the senior citizens in the nursing home.	Project Contractor, Construction Supervision	PMO, Municipal Environmetal Protection Bureau	4
		Take soil Discard soil	/	The area of disturbances and damage caused by sub-project construction in Dongxiang District is 22.13hm2; damage to the water and soil conservation facility area is 22.13hm2. In the absence of any water and soil conservation measures, the total amount of water and soil erosion that may be	1. Control area of water intake pump station Engineering measures: site leveling is 1487m^2, and the topsoil is back-filled with 700m^3, drain ditch is 408 meters; Plant measures: landscape greening 1487m^2, planting of 96 trees, ; Temporary measures: strip 700 m^3 of topsoil, the concrete floor is removed for 500m^2, build 64m of the soil-filled straw bag retaining wal, 233m^2 of the covered tarpaulin, 125 meters of the drain ditch and 2 of the sand basin. 2. Control area of water purification plant Engineering measures: 2.68hm^2 of site leveling, and the topsoil is backfilled with 7700 m^3, drainage ditches 2340m; Plant Measures: 2.57hm^2 of garden greening, 886m^2 of sowing grass seeds, 208m^2	Contractor, Construction Supervision	PMO local environmental protection Bureau, Local Water Conservancy Bureau	Cost to be included in water and soil conservation works

Project Name	Period of time	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/ Prevention Measures	Implement Mechanism	Supervision Mechanism	Budget (10,000 yuan,)
				caused by the project is 3515t, and the total amount of newly increased water and soil erosion is 3321t.	of greening in parking lot, and planting 46 trees; Temporary measures: 7700 $m^3$of topsoil stripping, 202 meters of soil-filled straw bag retaining wall, 2566m^2 of tarpaulin covering, 1286m of drain ditch, 4 sand basins and 1, car washing tank. 3. Control area of pipeline engineering Engineering measures: 8.70hm^2 of site leveling , and the topsoil is backfilled with 2600 m^3, 15.02hm^2 of re-cultivation; Plant measures: 7.84hm^2 of Green Belt Recovery .0.86hm^2 of forrestation and grass planting; Temporary measures: topsoil stripping 2600m^3, 5400 meters of soil-filled straw bag retaining wall, 38880 m^2 of tarpaulin covering, 5400 meters of color steel plate, and 41 sand basins. 4.Control Area of CrossingEngineering Engineering measures: Re-cultivation 0.18hm2; Temporary measures: 678 meters of color steel plate, 650 meters of drain ditch, and 46 sand basins.			
	Operating Period	New Project of Water Plant in Dongxiang District	Hefang Reservoir, Hengshan Reservoir	It belongs to the newly added water source area, has not divided the water source protection area, and it is difficult to guarantee the water quality of the reservoir for a long time.	Setting the primary and secondary protection zones, where the range of the first-level protection zone is 1 km upstream to 100 meters downstream from the water area and one side of water intake point to the land area 100m extended from the land surface of embankment angle to the back surface; and the second-level protection zone is 3000 meters upstream of one side of the back surface of the water area and water intake point and land surface extended 100 meters from the land surface of embankment angle to the back surface.	local Water Conservancy Bureau	Local Environmental Protection Bureau；Water Conservancy Bureau	Government budget
				The water supply guarantee rate is 90%, which can meet the requirement of water supply guarantee rate of the water plant; the water quality status is in accordance with Class III water quality standard	Installation of online water quality monitoring system	Water plant operating unit	Local Water Conservancy Bureau	Included in the operating expenses of the water plant
			/	Filter tank back-washing waste water, sludge discharge waste water, etc.	The back-washing waste water of the filter tank of the tap water plant is transport to the water distribution well for reuse after being lifted by the reuse water tank; The waste water of sludge discharged from the sedimentation tank is concentrated by the sludge concentration tank and the liquid supernatant after concentration is returned to the reuse water tank for reuse the remaining part enters the dewatering machine room to be dehydrated, and the filtrate generated by the sedimentation process reaches the municipal sewage standard, and is reused for irrigation and road irrigation in the plant area. The domestic sewage of the staff of the pressurized pumping station shall be discharged into the municipal pipe network after being treated by the septic tank.	Water plant operating unit	Municipal Environmetal Protection Bureau	Included in the operating expenses of the water plant
			/	Noise impact of various pump houses	_The noise decrease and noise reduction measures of damping cushion and sound insulation door and window shall be adopted for the dewatering machine room and the back washing room, and the sound absorption wall measures shall be added in addition to the above measures; _Strengthen the operation and maintenance of the equipment. Strictly control the key noise sources (such as fan, water pump, etc.), propose noise control requirements to the equipment manufacturers, and choose low noise equipment as much as possible;	Water plant operating unit	Municipal Environmetal Protection Bureau	Included in the operating expenses of the water plant
			/	Sludge and domestic gar-	-After the sludge water of the water purification plant is dehydrated to less than	Water plant op-	Municipal Environmetal	Included in

Project Name	Period of time	Activities	Environmental Sensitive Point	Potential Impact	Mitigation/ Prevention Measures	Implement Mechanism	Supervision Mechanism	Budget (10,000 yuan,)
				bage	60% of the water content by drying, the sludge water shall be transported to the domestic garbage landfill site in Yangyuanli of Dongxiang District on a regular basis. _The staff's domestic garbage shall be collected and disposed of by the local sanitation department.	erating unit	Protection Bureau	the operating expenses of the water plant

Table 4-9 Summary of Social Impact and Mitigation Measures

Risk	Measures or actions	Actors	Time	Funding	Monitoring indicators
1. Insufficient project awareness and participation	a) Strengthen publicity on the Project to guide villagers to use tap water and treatment facilities voluntarily; b) Strengthen project information disclosure; c) Optimize the design of water supply and sewer pipelines in consultation with villagers; d) For any inevitable damage, conduct functional restoration or offer compensation properly; e) Set villagers with good water conservation and environmental awareness as examples.	PMOs, design agency, township governments, village committees, villagers	Preparation, construction, operation	Project budget, government finance	a) Project publicity materials, publicity frequency and sign-in form of participants; b) Time, location and participants of publicity; c) Grievances about interior decoration damage and handling; d) Number of villagers recognized
2. LA risks	a) Develop a detailed RAP; b) Pay special attention to the income restoration of vulnerable groups in the RAP.	PMOs, owner, RAP preparation agency, external M&E agency	Preparation, construction	Project budget	a) RAP
3. Construction risks	a) Lay pipelines along flat terrains, and avoid living areas where possible; b) Avoid the busy season of farming; c) Conduct publicity before construction, and carry out construction in segments; d) Take measures to control noise; e) Sprinkle access roads regularly to prevent flying dust; f) Set up non-horning signs in densely populated areas, and avoid overnight construction where possible; g) Strengthen the supervision over material sources to ensure construction quality, and establish a pipeline maintenance mechanism.	PMOs, contractor	Preparation, construction	Budget of the Environmental Management Plan	a) Pipeline routing and distance from living areas; b) Construction time and disbursement of compensation; c) Modes and frequency of publicity; d) Grievances about environmental pollution and handling; e) Inclusion of construction safety management in construction contracts, and safety awareness publicity and education; f) Number of signs and repaired public facilities; g) Material quality and maintenance mechanism
4. Maintenance staff and training, and option comparison	a) Appoint staff for system operation and maintenance, and offer professional training; b) Keep the staff stable and assign responsibilities clearly; c) Establish appeal and supervision mechanisms, and contact points above the village level; d) Conduct option comparison in consideration of operation and maintenance costs.	PMOs, owner, village committees, villagers	Preparation, construction, operation	Project budget, township and village finance	a) Time and scope of training; b) Stability of operation and maintenance staff; c) Establishment of appeal and supervision mechanisms, and contact points above the village level; d) Project design
5. Ability to pay of vulnerable groups	a) Develop preferential policies on water charges and wastewater treatment charges for poor population; b) Hold a public hearing when adjusting water and wastewater treatment rates.	Water supply companies, civil affairs bureaus	Operation	Government finance	a) Number of persons covered by preferential policies, and amount exempted; b) Time, location and participants of the public hearing
6. Women's participation	a) Not less than 40% of participants in public participation activities at the preparation stage should be women; b) Not less than 30% of members of village maintenance teams should be women; c) Compensation should be received after signature by a couple; d) Each project agency (PMOs, water supply companies, sewerage companies, etc.) should have at least two female members; e) Conduct project publicity at times and locations, and in forms suitable for women; f) Tailor publicity to women's cognition; g) Give publicity and training on water conservation and tap water use to women.	Design agency, contractor, PMOs, county / district agencies concerned, township governments, village committees, local women, poor people	Construction, operation	Project budget, government finance	a) Number of public participation activities, number of female participants, and minutes; b) Number and proportion of female members, feedback and suggestions; c) Signature of women; d) Number of female members in project agencies; e) Time, location and mode of publicity and training
7. Job opportunities for vulnerable groups	a) Make unskilled jobs first available to women and other vulnerable groups. b) Ensure equal pay to equal work.	PMOs, contractor, labor and social security bureau, village committees, local women	Construction	Contractor budget	a) Number of vulnerable people doing unskilled jobs at the construction stage; b) Number of vulnerable people doing public welfare jobs at the operation stage
8. Women's employment in IAs	a) Recruit some female members for PMOs for the convenience of women-related work; b) Employ a certain number of female workers for water supply companies, such as meter readers and coordinators, running maintenance staff, toll collector, etc. c) Offer training for women's recruitment and employment.	PMOs, contractor, labor and social security bureau, village committees, local women	Construction	Contractor budget	a) Number of vulnerable people doing unskilled jobs at the construction stage; b) Number of vulnerable people doing public welfare jobs at the operation stage; c) Location, scope and frequency of female employees
9. Impact on power generation	a) Coordinate interests between water supply companies and hydropower stations, and offer rational compensation; b) Develop compensation measures based on practical conditions to make up losses arising from water supply.	Owners, PMOs, water supply companies, power generation companies	Construction	Project budget, profit of water supply company	a) Compensation measures between water supply companies and hydropower stations; b) Annual amount of compensation and payment
10. Social risks	a) Strengthen publicity and education on public health and AIDS prevention; b) Include education on public health and AIDS prevention in construction contracts for effective performance; c) Establish a physical checkup mechanism for construction staff (i.e., setting up temporary infirmaries and utilizing local medical resources);	Contractors, local agencies concerned, owners, enterprises, township governments, village committees	Construction	Project budget, budgets of local agencies concerned	a) Provisions of construction contract, and implementation; b) Number of participants in training on public health and AIDS prevention; c) Number of health centers; d) Quantities of publicity materials on AIDS prevention at the construc-

	d) Conduct diversified publicity on AIDS prevention (brochure, poster, album, etc.); e) Conduct publicity on local social and cultural customs to reduce potential conflicts.				tion stage; e) Quantities of publicity materials on local social and cultural customs at the construction stage

Table 4-10 Summary Table of Dam Action Plan and Rectification Scheme

S/N	Reservoir Name	Location (Township, River)	Total Storage Capacity (10,000 m^3)	Reservoir Functions	Dam Type	Dam Height (m)	Construction Year	Last Time for Reinforcement	Last Time for Safety Identification	Identification Conclusion	Action Plan for Reinforcement and Improved Management	Estimated Costs (10,000 Yuan)	Operation Management Department
1	Dongjin reservoir in Xiushui county	Upstream of Xiuhe river in Xiushui county, northwest of Jiangxi Province	79500	It is mainly used for power generation, and it also has the flood prevention, irrigation, aquaculture and other comprehensive utilization functions	Reinforced concrete face rock-fill dam	85.5	1995	2012	2010	The main responsibility for the operation management of the reservoir dam is clear and well-defined, the rules and regulations are sound, various performance indicators of the reservoir have met the standard requirements, and the proposed operation and maintenance supervision plan, and the emergency plan can effectively maintain and guarantee the safe operation of the reservoir dam. In general, the reservoir dam meets the requirements of World Bank Safeguard Policy OP4.37	Keep observing during flood time.	0	Jiangxi Dongjin Power Generation Co., Ltd
2	Communist Reservoir in Leping City	Middle and upstream of Chexi, tributary of Lean river	14370	It is mainly used for water supply in urban area and irrigation, and it also has the flood prevention, power generation, aquaculture and other comprehensive utilization functions	Earth dam with inclined clay core	34.2	1959	2006	2001	The main responsibility for the operation management of the reservoir dam is clear and well-defined, the rules and regulations are sound, various performance indicators of the reservoir have met the standard requirements, and the proposed operation and maintenance supervision plan, and the emergency plan can effectively maintain and guarantee the safe operation of the reservoir dam. In general, the reservoir dam meets the requirements of World Bank Safeguard Policy OP4.37 (1) Due to the lack of supporting funds, part of the danger elimination and reinforcement project of the reservoir will not be completed according to the approval plan. Therefore, this project has not yet been completed and accepted. Although it does not affect normal and safe operation, we suggest to complete the project as soon as possible. (2) The road upstream of 1# dam is the debris road and is not hardened, and it is relatively simple. There are more weeds and shrubs on both sides, and vehicles are not easy to go on the dam in flood or rainseason, which is not conducive to flood prevention. It is recommended to harden and broaden the road. Weeds upstream and downstream of dam have a rapid speed of growth, and we suggest to regularly clear them. (3)Some rain stations, the tubing have been damaged, it’s better to repair them	(1)Due to the lack of supporting funds, part of the danger elimination and reinforcement project of the reservoir will not be completed according to the approval plan. Therefore, this project has not yet been completed and accepted. Although it does not affect normal and safe operation, we suggest to complete the project as soon as possible. (2)The road upstream of 1# dam is the debris road and is not hardened, and it is relatively simple. There are more weeds and shrubs on both sides, and vehicles are not easy to go on the dam in flood or rainseason, which is not conducive to flood prevention. It is recommended to harden and broaden the road. Weeds upstream and downstream of dam have a rapid speed of growth, and we suggest to regularly clear them. (3)Some rain stations, the tubing have been damaged, it’s better to repair them	60	Leping Communist Reservior Engineering Management Bureau

3	Dongfanghong reservoir in Leping City	Tributary of upstream of Lean river, Raohe	1381	It is mainly used for irrigation, and it also has the flood prevention, water supply, aquaculture and other comprehensive utilization functions	Earth dam with cement core	24.0	1969	2010	2005	The main responsibility for the operation management of the reservoir dam is clear and well-defined, the rules and regulations are sound, various performance indicators of the reservoir have met the standard requirements, and the proposed operation and maintenance supervision plan, and the emergency plan can effectively maintain and guarantee the safe operation of the reservoir dam. In general, the reservoir dam meets the requirements of World Bank Safeguard Policy OP4.37 (1) The reservoir management department should prepare the flood prevention plan according to requirements of *Guidelines for the Preparation of Emergency Response Plan for Reservoir Flood Prevention*, making the plan more scientific and operable. (2) We suggest that the piezometer tubes should be regularly monitored for reorganization and record keeping	(1) The reservoir management department should prepare the flood prevention plan according to requirements of *Guidelines for the Preparation of Emergency Response Plan for Reservoir Flood Prevention*, making the plan more scientific and operable. (2) We suggest that the piezometer tubes should be regularly monitored for reorganization and record keeping	13	Leping Dongfanghong Reservoir Management Institute
4	Happiness reservoir in Leping City	Guanzhuang water tributary of middle of Lean river, Raohe	1267	It is mainly used for irrigation, and it also has the flood prevention, aquaculture and other comprehensive utilization functions	Earth dam with cement and clay core	22.8	1958	2010	2002	The main responsibility for the operation management of the reservoir dam is clear and well-defined, the rules and regulations are sound, various performance indicators of the reservoir have met the standard requirements, and the proposed operation and maintenance supervision plan, and the emergency plan can effectively maintain and guarantee the safe operation of the reservoir dam. In general, the reservoir dam meets the requirements of World Bank Safeguard Policy OP4.37 (1)The piezometer tubes should be regularly monitored for reorganization and record keeping. (2) The reservoir management department should prepare the flood prevention plan according to requirements of *Guidelines for the Preparation of Emergency Response Plan for Reservoir Flood Prevention*, making the plan more scientific and operable.	(1)The piezometer tubes should be regularly monitored for reorganization and record keeping. (2) The reservoir management department should prepare the flood prevention plan according to requirements of *Guidelines for the Preparation of Emergency Response Plan for Reservoir Flood Prevention*, making the plan more scientific and operable.	13	Leping Happiness Reservoir Management Institute

5	Gongqiang reservoir in Leping City	Kengpan water of downstream of Lean river	1412	It is mainly used for irrigation, and it also has the flood prevention, aquaculture, travel and other comprehensive utilization functions	Homogeneous earth dam	16.0	1958	2012	2008	The main responsibility for the operation management of the reservoir dam is clear and well-defined, the rules and regulations are sound, various performance indicators of the reservoir have met the standard requirements, and the proposed operation and maintenance supervision plan, and the emergency plan can effectively maintain and guarantee the safe operation of the reservoir dam. In general, the reservoir dam meets the requirements of World Bank Safeguard Policy OP4.37 (1) The weeds in the downstream slope of the dam grow faster and are regularly cleared. The water level of downstream dam is higher than that of the drainage dikes. It is suggested to reduce the water level in the ponds and to inspect whether there is abnormal water seepage in the ponds during the flood season. (2) There is water resistance phenomenon in the inlet of spillway, and we suggest to remove. (3) It is suggested that the flood prevention contingency plan prepared by the reservoir management townships should be refined, specific and operable with the relevant charts. (4) We suggest to improve the relevant safety management system	(1) The weeds in the downstream slope of the dam grow faster and are regularly cleared. The water level of downstream dam is higher than that of the drainage dikes. It is suggested to reduce the water level in the ponds and to inspect whether there is abnormal water seepage in the ponds during the flood season. (2) There is water resistance phenomenon in the inlet of spillway, and we suggest to remove. (3) It is suggested that the flood prevention contingency plan prepared by the reservoir management townships should be refined, specific and operable with the relevant charts. (4) We suggest to improve the relevant safety management system	33	Leping Town Qiaozhen Water Management Station
6	Gaofang reservoir in Jinxi county	Junction of Huangtong and Lufang in Jinxi county	6750	It is mainly used for water supply, with irrigation, flood prevention and power generation	Homogeneous earth dam	40.2	1959	2013	2002	The main responsibility for the operation management of the reservoir dam is clear and well-defined, the rules and regulations are sound, various performance indicators of the reservoir have met the standard requirements, and the proposed operation and maintenance supervision plan, and the emergency plan can effectively maintain and guarantee the safe operation of the reservoir dam. In general, the reservoir dam meets the requirements of World Bank Safeguard Policy OP4.37 We suggest to update and improve the flood prevention plan and relevant management system	We suggest to update and improve the flood prevention plan and relevant management system	8	Jinxi County Gaofang Reservior Management Bureau
7	Hefang reservoir in Dongxiang district	Hefang village of Dongjiaoxiaogang in Dongxiang district	1138	It is mainly used for water supply, and combined with irrigation, flood prevention and other comprehensive utilization functions	Earth dam with inclined clay core	16.7	1961	2009	2002	The main responsibility for the operation management of the reservoir dam is clear and well-defined, the rules and regulations are sound, various performance indicators of the reservoir have met the standard requirements, and the proposed operation and maintenance supervision plan, and the emergency plan can effectively maintain and guarantee the safe operation of the reservoir dam. In general, the reservoir dam meets the requirements of World Bank Safeguard Policy OP4.37 The reservoir management department should prepare the flood prevention plan according to requirements of *Guidelines for the Preparation of Emergency Response Plan for Reservoir Flood Prevention*, making the plan more scientific and operable	The reservoir management department should prepare the flood prevention plan according to requirements of *Guidelines for the Preparation of Emergency Response Plan for Reservoir Flood Prevention*, making the plan more scientific and operable	5	Dong Xiang District Hefang Reervior Engineering Management Bureau

8	Hengshan reservoir in Dongxiang district	Hengshan village of Xiaohuang township in Dongxiang district	2879	It is mainly used for irrigation, and it also has the flood prevention, daily water supply, aquaculture, and other comprehensive utilization functions	Earth dam with cement core	25.2	1959	2010	2004	The main responsibility for the operation management of the reservoir dam is clear and well-defined, the rules and regulations are sound, various performance indicators of the reservoir have met the standard requirements, and the proposed operation and maintenance supervision plan, and the emergency plan can effectively maintain and guarantee the safe operation of the reservoir dam. In general, the reservoir dam meets the requirements of World Bank Safeguard Policy OP4.37 The mountain formed of the new construction of road on the right bank of the dam near the upper reaches of the bank is relatively steep, the rock mass is broken and the weathering is serious, forming a hidden danger. It is suggested that the contractor should take appropriate safety measures.	The mountain formed of the new construction of road on the right bank of the dam near the upper reaches of the bank is relatively steep, the rock mass is broken and the weathering is serious, forming a hidden danger. It is suggested that the contractor should take appropriate safety measures.	20	Dongxiang District Hengshan Reservior Engineering Management Bureau
9	Happniess Reservior in Dongxiang district	Zhujiayuan of Xiaomin Town in Dongxiang district	4675	It is mainly used for urban industry, domestic water supply, agriculture irrigation, fllod prevention and aquaculture	Earth dam with clay core	21.0	1958	2004	2000	The main responsibility for the operation management of the reservoir dam is clear and well-defined, the rules and regulations are sound, various performance indicators of the reservoir have met the standard requirements, and the proposed operation and maintenance supervision plan, and the emergency plan can effectively maintain and guarantee the safe operation of the reservoir dam. In general, the reservoir dam meets the requirements of World Bank Safeguard Policy OP4.37 Being flushed by wind and waves, the rocks piled up at the upstream of the reservoir are very messy, which should be smoothed out timely.	Being flushed by wind and waves, the rocks piled up at the upstream of the reservoir are very messy, which should be smoothed out timely.	30	Dongxiang district Happniess Reservior Engineering Management Bureau
10	Longyuankou reservoir in Yongxin county	Upstream of Longyuankou, and upstream of Hengxi village in Longyuankou township, Yongxin county	4560	It has irrigation, flood prevention, power generation and other comprehensive benefits	Fine stone concrete block stone hyperbolic arch dam	57.3	1992	2010	2007	The main responsibility for the operation management of the reservoir dam is clear and well-defined, the rules and regulations are sound, various performance indicators of the reservoir have met the standard requirements, and the proposed operation and maintenance supervision plan, and the emergency plan can effectively maintain and guarantee the safe operation of the reservoir dam. In general, the reservoir dam meets the requirements of World Bank Safeguard Policy OP4.37 (1) The mountain and rock body of dam left bank near the dam road bend and the right dam abutment roadside are relatively steep, broken and weathering is serious, forming a hidden danger. We suggest to take safety measures; (2) We suggest that the reservoir management department should prepare the flood prevention plan according to requirements of *Guidelines for the Preparation of Emergency Response Plan for Reservoir Flood Prevention*, and we should make the plan more scientific and operable	(1) The mountain and rock body of dam left bank near the dam road bend and the right dam abutment roadside are relatively steep, broken and weathering is serious, forming a hidden danger. We suggest to take safety measures; (2) We suggest that the reservoir management department should prepare the flood prevention plan according to requirements of *Guidelines for the Preparation of Emergency Response Plan for Reservoir Flood Prevention*, and we should make the plan more scientific and operable	25	Yongxin County Longyuankou Reservior Engineering Management Bureau

Chapter V Environmental Monitoring Plan

In order to carry out the environmental protection work of the project, verify the results of the environmental impact mitigation measures, prevent the harm of the sudden accident to the environment, perfect and revise the environmental protection measures according to the requirements, it's necessary to carry out environmental monitoring work during the construction period and operation period. The implementation of environmental monitoring can also provide scientific basis for environmental pollution control, environmental management and regional environmental protection in the construction period and operation period.

5.1 Purpose of monitoring

The environmental monitoring includes two phases of the project, construction period and operation period, the purpose of which is to provide comprehensive and timely information on the pollution dynamics of the proposed project, understand the environmental quality change degree, influence scope, and the environment quality dynamics of the operation period in the area where the project construction is located, and timely report the condition information to the competent department, to provide scientific basis for environmental management of the project.

5.2 Environmental Monitoring Agency

The environmental monitoring of the construction period and the operation period shall be borne by the project contractor or the operator to qualified agency, which shall be the national environmental quality monitoring certificating unit with full equipment and high technology that the environment monitoring task undertaken can be completed with few difficulties.

5.3 Implementation of monitoring

According to the environmental impact prediction result, take the sensitive focus which may be more obvious as the monitoring point, to track the pollution situation during the construction period and operation period of the projecton noise, air environment and surface water environment, which have greater impacts on the environment. The monitoring factors shall be determined according to the engineering pollution characteristic factors. The monitoring and analysis method adopts the corresponding monitoring and analysis method of the project in the *Environmental Monitoring Technical Specification* promulgated by the State Environmental Protection Administration. And the evaluation standard of each sub-project shall be carried out according to the national standard for environmental assessment.

This project monitoring focuses on construction period and operation period. The key scope of project environmental monitoring includes the surrounding environment of 7 counties, (prefectures and districts) in the project area. See Table 5-1 to Table 5-8 for the Project Monitoring Plan for Water Supply Project and Sewage Treatment Plant of the Project.

In addition, PMO can arrange for random environmental monitoring of personnel who have received environmental monitoring training in order to identify problems and address them in time. Daily monitoring includes: noise monitoring around the project site and sensitive points with portable noise meter; visual observation to check the adverse environmental impact caused by the project, such as causing large area of water and soil erosion, etc.

Table 5-1 Environmental Monitoring Plan and Budget Details for the Sub-project of County Yongxin

Item (s)	Monitoring Period	Environmental elements	Monitoring point layout (Quantity)	Monitoring items	Monitoring frequency	Unit price (yuan)	Annual cost (Yuan/year)	Monitoring Institution
Urban water supply facilities construction project	Construction period	Noise	Sensitive points along the original water pipes: 1 monitoring point is set separately at the east side of the river, the Longyuan port and the Shang Qiaotou Village	LeqdB（A）	Once a quarter, 2 days/term, 2 times/day, once every day and night	300	3600	Utions with monitoring qualifications
		Surface water	Each monitoring section shall be arranged at 500m from upstream and 500m from downstream of the Three Bay Bridge of Hehe River	PH, DO, total phosphorus NH3-N, COD, BOD_2Petroleum	The construction influence period shall be detected once a day for 2 days	1000	6000	
		Construction Waste water	1 monitoring point shall be on the drainage port of the construction sedimentation tank	COD, BOD_5, SS	3 terms/year, 1 day/term, 1 time,/day	1000	3000	
	Operating Period	water and soil erosion	There are four observation sites and six sample sites	(1)Disturbance surface area, t digging and filling amount, runoff amount, temporary piled up, the number of temporary protection measures and control effects of soil and water erosion area shall be monitored. (2) changes in soil erosion and erosion of water, and the effect of soil erosion on the prevention and control measures shall be monitored. (3) the quantity and quality of soil and water conservation control measures, the survival rate, retention rate, growth situation and coverage of	Background check 1 time. During the construction and natural convalescence period during the rainy season (April ~ September), once every month, the non-rainy season shall be monitored once every three months. During the rainstorm period (the daily rainfall is greater than 50mm). Soil and water conservation years shall be monitored three to four times.	5000	200000	

Item (s)	Monitoring Period	Environmental elements	Monitoring point layout (Quantity)	Monitoring items	Monitoring frequency	Unit price (yuan)	Annual cost (Yuan/year)	Monitoring Institution
				forest grass measures, the stability, integrity and operation of the engineering measures shall be monitored. (4) soil and water conservation measures are being implemented (5) changes in topography, topography and water systems	Soil and water conservation measures being implemented shall be continuously monitored and monitored every 10 days. The changes in the topography, topography and water systems, and the damage to the downstream and surrounding areas shall be monitored at least once every six months.			
		Atmosphere	1 monitoring point shall be set on the boundary of the water plant	Cl_2	4 terms,/year, 1 day/term	600	2400	
		Surface water	The Longyuankou Reservoir has 3 monitoring points: 500m from upstream of the water intake, water intake and 1,000m from the downstream of the water intake;	PH, DO, total phosphorus, NH_3-N, COD, BOD_5, petroleum class	3 terms/yearforlow flow period, high flow period ,and normal flow period : 1 Phase,, 3 days/term, 1 time/day	2000	10000	Be included in routine monitoring of water plant
			The water inlet and the water outlet of the water plant are respectively provided with monitoring points;	Color, turbidity, smell and taste, gross visible matter, ph, total hardness (calculated as caco3), aluminum, iron, manganese, copper, zinc, anionic synthetic detergent, volatile phenol, sulfate, chloride, fluoride, cyanide, total soluble solids, arsenic, selenium, mercury, cadmium, chromium (hexavalent)), lead, nitrate nitrogen, chloroform, carbon tetrachloride, total number of colonies, total coliforms,	According to the water plant management requirements	2000	20000	Be included in routine monitoring of water plant

Item (s)	Monitoring Period	Environmental elements	Monitoring point layout (Quantity)	Monitoring items	Monitoring frequency	Unit price (yuan)	Annual cost (Yuan/year)	Monitoring Institution
				heat-resistant coliforms, free residual chlorine, ammonia , oxygen consumption				
County city water supply network extension project	Construction period	Surface water	Monitoring section shall be separately set for 500m from upstream and 500m from downstream of Tianxi Village of Rongjiang River	PH, DO, total phosphorus, NH_3-N, COD, BOD_5, petroleum class	The construction influence period shall be detected for 2 days and once a day	1000	3000	Institutions with monitoring qualifications
		Noise	Monitoring points are arranged separately at the Guangming Village of Lianzhou Township, Longan Villageof Fengxiang Town, TaishanVillage of Gaolou Bridge Town, Quantang Village of Huaizhong Town and Qishan Village of Shiqiao Town	LeqdB（A）	Once a quarter, 1 day/term, 2 times/day, once every day and night	300	6000	

Table 5-2 Environmental Monitoring Plan and Budget Details for the Sub-project of County Jinxi

Item (s)	Monitoring Period	Environmental elements	Monitoring point layout (Quantity)	Monitoring items	Monitoring frequency	Unit price (yuan/year)	Annual cost (yuan/year)	Monitoring Institutions
County city water supply network extension project	Construction period	Noise	Along the original water pipeline line: monitoring points are arranged separately at Shuangtang Town, Chonglu Town of He City, Zufang Town	LeqdB（A）	Once a quarter, 1 day/term, 2 times/day, once every day and night	300	3600	Institutions with monitoring qualifications
Huangtong Township Water Supply Project	Construction period	Noise	Along the original water pipeline: 1 monitoring point is set at Huangtong Town, Huangtong Township	LeqdB（A）	Once a quarter, 1 day/term, 2 times/day, once every day and night	300	1200	
		Construction wastewater	1 monitoring point shall be set at the drainage port of the construction sedimentation tank	COD, BOD_5, SS	3 terms/year, 1 day/term, onceday	1000	3000	
	Operating Period	Atmosphere	Monitoring point shall be set at the expansion water plant and the boundary of water intake pump house	Cl_2	Once a quarter, 1 day/term	600	2400	
		water and soil erosion	Set six observations and eight sample sites	(1)Disturbance surface area, digging and filling amount, runoff amount emporary piled up, the number of temporary protection measures and control effects of soil and water erosion area shall be monitored. (2) changes in soil erosion and erosion of water, and the effect of soil erosion on the prevention and control measures shall be	Background value check once time. During the construction period and natural convalescence period during the rainy season (April ~ September), once every month, the non-rainy season shall be monitored once every three months. During the rainstorm period (the	5000	224000	

				monitored. (3) the quantity and quality of soil and water conservation control measures, the survival rate, retention rate, growth situation and coverage of forest grass measures, the stability, integrity and operation of the engineering measures shall be monitored. (4) soil and water conservation measures are being implemented (5) changes in topography, topography and water systems	daily rainfall is greater than 50mm). Soil and water conservation years shall be monitored three to four times. Soil and water conservation measures being implemented shall be continuously monitored and monitored every 10 days. The changes in the topography, topography and water systems, and the damage to the downstream and surrounding areas shall be monitored at least once every six months.			
		Surface water	Three monitoring points: 500m from upstream of water intake, water intake and 1,000m from downstream of water intake	Water temperature, pH, DO, permanganate index, total phosphorus, total nitrogen, NH3-N, COD, BOD5, copper, zinc, fluoride, selenium, arsenic, mercury, cadmium, chromium, lead, cyanide, volatile phenol, petroleum, anionic surfactant, sulfide, fecal coliforms,	3 terms/year, low flow period, high flow period, and normal flow period3 days/term, once aday	2000	30000	Be included in routine monitoring of water plant

Table 5-3 Environmental Monitoring Plan and Budget Details for the Sub-project of County Nanfeng

Sub-project	Monitoring Period	Environmental elements	Monitoring point layout (quantity)	Monitoring items	Monitoring frequency	Unit price (Yuan/Period)	Annual cost (yuan/year)	Monitoring Institution
Extension project of tap water pipe network in County	Construction period	Surface water	Monitoring sections shall be separately set at 500m from upstream and 500m downstream of the Junfeng Bridge of Shishan County, 500m from the upstream, and 500m downstream of Jiulian Bridge in Laixi Township	PH, DO, total phosphorus, NH_3-N, COD, BOD_5, petroleum class	The construction influence period shall be detected for 2 days and once a day	1000	6000	Institutions with monitoring qualifications
		Noise	Sensitive points along the pipe network: monitoring points are separately set up in the town of County Shishan, Changling Village of Qiawan County, Laixi Township Primary School.	LeqdB（A）	Once a quarter, 1 day/term, twice/day, once every day and night	300	3600	
		water and soil erosion	There are four observation sites and six sample sites	(1)Disturbance surface area, t digging and filling amount, runoff amount, temporary piled up in the area of pile soil, useless quantity layer stripping and temporary piled up, the number of temporary protection measures and control effects of soil and water erosion area of change (2) changes in soil erosion and erosion of water, and the effect of soil erosion on the prevention and control measures (3) the quantity and quality of soil and water conservation control measures, the survival rate, retention rate, growth situation and coverage of forest grass measures, the stability, integrity and operation of the engineering measures (4) soil and water conservation measures being implemented (5) changes in topography, topography and water systems	Background value check once time; During the construction period and natural convalescence period during the rainy season (April ~ September), once every month, the non-rainy season will be monitored once every three months. During the rainstorm period (the daily rainfall is greater than 50mm). Soil and water conservation years shall be monitored three to four times. Soil and water conservation measures being implemented shall be continuously monitored and monitored every 10 days. The changes in the topography, topography and water systems, and the damage to the downstream and surrounding areas shall be monitored at least once every six months.	5000	180000	

Table 5-4 Environmental Monitoring Plan and Budget Details for the Sub-project of County Leping

Item (s)	Monitoring Period	Environmental elements	Monitoring point layout (quantity)	Monitoring items	Monitoring frequency	Unit price (yuan/year)	Annual cost (Yuan/year)	Monitoring Institution
Expansion Project of Water Plant in LepingCity	Construction period	Surface water	Monitoring sections shall be set at 500m from upstream of the Gutian Bridge and 500m from downstream of the Gutian Bridge	PH, DO, total phosphorus, NH_3-N, COD, BOD_5, petroleum class	The construction influence period shall be detected for 2 days and once a day	2000	4000	Institutions with monitoring qualifications
		Construction wastewater	The monitoring point shall be on the drainage port of the construction sedimentation tank	COD, BOD_5, SS	3 terms/year, 1 day/term, once a day	1000	3000	
		Noise	Primary SchoolStar Experimental kindergarden, Huanggang Town	LeqdB（A）	Once a quarter, 1 day/term, twice/day, and once every day and night	300	6000	
		Water and soil erosion	There are four observation sites and six sample sites	(1)Disturbance surface area, t digging and filling amount, runoff amount, temporary piled up in the area of pile soil, useless quantity layer stripping and temporary piled up, the number of temporary protection measures and control effects of soil and water erosion area of change (2) changes in soil erosion and erosion of water, and the effect of soil erosion on the prevention and control measures (3) the quantity and quality of soil and water conservation control measures, the survival rate, retention rate, growth situation and coverage of forest grass measures, the stability, integrity and operation of the engineering measures (4) soil and water conservation measures being implemented (5) changes in topography, topog-	Background value check once time. During the construction period and natural convalescence period during the rainy season (April ~ September), once every month, the non-rainy season will be monitored once every three months. During the rainstorm period (the daily rainfall is greater than 50mm). Soil and water conservation years shall be monitored three to four times. Soil and water conservation measures being implemented shall be continuously monitored and monitored every 10 days. The changes in the topography, topography and	5000	200000	

Item (s)	Monitoring Period	Environmental elements	Monitoring point layout (quantity)	Monitoring items	Monitoring frequency	Unit price (yuan/year)	Annual cost (Yuan/year)	Monitoring Institution
				raphy and water systems	water systems, and the damage to the downstream and surrounding areas shall be monitored at least once every six months.			
	Operating Period	Atmosphere	Monitoring point shall be set at the expansion water plant and the boundary of water intake pump house	Cl_2	Once a quarter, 1 day/term	600	2400	
		Surface water	There are 3 monitoring points in the Communist Reservoir: 500m from upstream of the water intake, water intake and 1,000m from downstream of the water intake;	PH, DO, total phosphorus, NH_3-N, COD, BOD_5, petroleum class	3 terms/year,for the low flow period ,high flow period, and normal flow period 3 days/term, once day	2000	10000	Be Included in routine monitoring of water plant
			The water inlet and the water outlet of the water plant are respectively provided with monitoring points;	Color, turbidity,smell and taste, gross visible matter, ph, total hardness (calculated as $CaCO_3$), aluminum, iron, manganese, copper, zinc, anionic synthetic detergent, volatile phenol, sulfate, chloride, fluoride, cyanide, total soluble solids, arsenic, selenium, mercury, cadmium, chromium (hexavalent)), lead, nitrate nitrogen, chloroform, carbon tetrachloride, total number of colonies, total coliforms, heat-resistant coliforms, free residual chlorine, ammonia nitrogen, oxygen consumption,	Fixed according water plant management requirements	2000	20000	Be Included in routine monitoring of water plant
County city water supply pipeline extension project	Construction period	Noise	Primary SchoolStar Experimental kindergarden, Huanggang Town, Handu Village of Legang Town, and Wankou Primary School of Hougang Villiage; and one monitoring point shall be set for the in-	LeqdB（A）	Once a quarter, 1 day/term, twice/day, and once every day and night	300	6000	Institutions with monitoring qualifications

Item (s)	Monitoring Period	Environmental elements	Monitoring point layout (quantity)	Monitoring items	Monitoring frequency	Unit price (yuan/year)	Annual cost (Yuan/year)	Monitoring Institution
			tegrated pressurized pump station					
Reconstruction and Extension Project of Rural Water Supply Network	Construction period	Noise	Each monitoring point is arranged at Chang Songgang Village of Yongshan Town, Zhongnao Village of Zhongbu Town, Cangxia Village of Shiligang Town, Mingkou Township, Longkou Village of Gaojia Town, and Wukou Town; and 1 monitoring point is set in the integrated pressurizing pump station.	LeqdB（A）	Once a quarter, 1 day/term, twice/day, once every day and night	300	7200	
Lilin Water Plant Extension Project	Construction period	Construction wastewater	The monitoring point shall be provided at the drainage port of the construction sedimentation tank	COD, BOD_5, SS	3 terms/year, 1 day/term, once a day	1000	3000	
	Operating Period	Atmosphere	The monitoring point shall be set at the boundary of the water plant	Cl_2	Once a quarter, 1 day/term	600	2400	
		Surface water	There are 3 monitoring points for the An Yin water: 500m from section upstream of the water intake, water intake and 1,000m from downstream of the water intake;	PH, DO, total phosphorus, NH_3-N, COD, BOD_5, petroleum class	3 terms /year, for low flow period, high flow period, and normal flow period , 3 days/term, once a day	2000	10000	Be Included in routine monitoring of water plant
			The water inlet and the water outlet of the water plant are respectively provided with monitoring points;	Color, turbidity, odor and taste, gross visible matter, ph, total hardness (calculated as caco3), aluminum, iron, manganese, copper, zinc, anionic synthetic detergent, volatile phenol, sulfate, chloride, fluoride, cyanide, total soluble solids, arsenic, selenium, mercury, cadmium, chromium (hexavalent)), lead, nitrate nitrogen, chloroform, carbon tetrachloride, total number of colonies, total coliforms, heat-resistant coliforms, free residual chlorine, ammonia nitrogen, oxygen consumption,	Fixed according to water plant management requirements	2000	20000	Be Included in routine monitoring of water plant

Table 5-5 Environmental Monitoring Plan and Budget Details for the Sub-project of Xiushui

Item (s)	Monitoring Period	Environmental elements	Monitoring point layout (quantity)	Monitoring items	Monitoring frequency	Unit price (yuan/year)	Annual cost (Yuan/year)	Monitoring Institution
Expansion Project of Water Plant in Xiushui County	Construction period	Noise	Along the original water pipeline: Zhishan Yuan Village and Shangwu Ping Village each set 1 monitoring point	LeqdB（A）	Once a quarter, 1 day/term, twice/day, once every day and night	300	2400	Institutions with monitoring qualifications
		Construction wastewater	The monitoring point shall be provided for the drainage port of the construction sedimentation tank	COD, BOD_5, SS	3 terms/year, 1 day/term, once a day	1000	3000	
		Water and soil erosion	There are four observation sites and six sample sites	(1)Disturbance surface area, t digging and filling amount, runoff amount, temporary piled up in the area of pile soil, useless quantity layer stripping and temporary piled up, the number of temporary protection measures and control effects of soil and water erosion area of change (2) changes in soil erosion and erosion of water, and the effect of soil erosion on the prevention and control measures (3) the quantity and quality of soil and water conservation control measures, the survival rate, retention rate, growth situation and coverage of forest grass measures, the stability, integrity and operation of the engineering measures (4) soil and water conservation measures being implemented (5) changes in topography, topography and water systems	Background value check once time. During the construction period and natural convalescence period during the rainy season (April ~ September), once every month, the non-rainy season will be monitored once every three months. During the rainstorm period (the daily rainfall is greater than 50mm). Soil and water conservation years shall be monitored three to four times. Soil and water conservation measures being implemented shall be continuously monitored and monitored every 10 days. The changes in the topography, topography and water systems, and the damage to the downstream and sur-	5000	120000	

					rounding areas shall be monitored at least once every six months.			
	Operating Period	Atmosphere	The monitoring point shall be set at the boundary of the water plant	Cl_2	Once a quarter, 1 day/term	600	2400	
		Surface water	There are 3 monitoring points in Dongjin Reservoir: section 500m from upstream of water intake, water intake, and 1,000m from downstream of water intake;	PH, DO, total phosphorus, NH3-N, COD, BOD_5, petroleum class	3 terms /year, for low flow period, high flow period, and normal flow period, 3 days/term, once a /day	2000	10000	Be Included in routine monitoring of water plant
			The water inlet and the water outlet of the water plant are respectively provided with monitoring points;	Color, turbidity, odor and taste, gross visible matter, ph, total hardness (calculated as $CaCO_3$), aluminum, iron, manganese, copper, zinc, anionic synthetic detergent, volatile phenol, sulfate, chloride, fluoride, cyanide, total soluble solids, arsenic, selenium, mercury, cadmium, chromium (hexavalent)), lead, nitrate nitrogen, chloroform, carbon tetrachloride, total number of colonies, total coliforms, heat-resistant coliforms, free residual chlorine, ammonia nitrogen, oxygen consumption,	Fixed according to the water plant management requirements	2000	20000	Be Included in routine monitoring of water plant
New Construction and Reconstruction Project of Township Network	Construction period	Surface water	Monitoring sections shall be arranged at 500m from upstream and 500m from downstream of Dongjin River Dongjin Bridge respectively.	PH, DO, total phosphorus, NH3-N, COD, BOD_5, petroleum class	The construction influence period shall be detected for 2 days and once a day	1000	2000	Institutions with monitoring qualifications
		Noise	Monitoring points are arranged at the Zhajin-Village Zhajin Town, Xiushui Village of Shankou Town, the Gangbei Village of the Gangkou Town, and the Xizhuang Village of Xigang Town.	LeqdB（A）	Once quarter, 1 day/term, twice/day, once every day and night	300	6000	

Table 5-6 Environmental Monitoring Plan and Budget Details for the Sub-project of Linchuan District

Item (s)	Monitoring Period	Environmental elements	Monitoring point layout (Quantity)	Monitoring items	Monitoring frequency	Unit price (yuan/year)	Annual cost (Yuan/year)	Monitoring Institutions
New Project of Water Plant in Linchuan District	Construction period	Noise	Four monitoring points in each layout of water plant and water intake pump house	LeqdB（A）	Once a quarter, 1 day/term, twice/day, once every day and night	300	4800	Institutions with monitoring qualifications
		Construction wastewater	1 monitoring point	COD, BOD_5, SS	Phase 3/year, 1 day/period, 1 time,/day	2400	7200	
		Water and soil erosion	There are four observation sites and six sample sites	(1)Disturbance surface area, t digging and filling amount, runoff amount, temporary piled up in the area of pile soil, useless quantity layer stripping and temporary piled up, the number of temporary protection measures and control effects of soil and water erosion area of change (2) changes in soil erosion and erosion of water, and the effect of soil erosion on the prevention and control measures (3) the quantity and quality of soil and water conservation control measures, the survival rate, retention rate, growth situation and coverage of forest grass measures, the stability, integrity and operation of the engineering measures (4) soil and water conservation measures being implemented (5) changes in topography, topography and water systems	Background value check once time. During the construction period and natural convalescence period during the rainy season (April ~ September), once every month, the non-rainy season will be monitored once every three months. During the rainstorm period (the daily rainfall is greater than 50mm). Soil and water conservation years shall be monitored three to four times. Soil and water conservation measures being implemented shall be continuously monitored and monitored every 10 days. The changes in the	5000	200000	

					topography, topography and water systems, and the damage to the downstream and surrounding areas shall be monitored at least once every six months.			
	Operating Period	Atmosphere	The monitoring point shall be set at the boundary of the water plant	Cl_2	Phase 1/quarter, 1 day/period	600	2400	
		Surface water	Three monitoring sections of Chongren River: section 500m from upstream of water intake, water intake and 1,000m from downstream of water intake;	PH, DO, total phosphorus, NH_3-N, COD, BOD_5, petroleum class	Phase 3/year, for low flow period, high flow period, and normal flow period, 3 days/term, once a day	2000	10000	Be included in routine monitoring of water plant
			The water inlet and the water outlet of the water plant are respectively provided with monitoring points;	Color, turbidity, odor and taste, gross visible matter, ph, total hardness (calculated as caco3), aluminum, iron, manganese, copper, zinc, anionic synthetic detergent, volatile phenol, sulfate, chloride, fluoride, cyanide, total soluble solids, arsenic, selenium, mercury, cadmium, chromium (hexavalent)), lead, nitrate nitrogen, chloroform, carbon tetrachloride, total number of colonies, total coliforms, heat-resistant coliforms, free residual chlorine, ammonia nitrogen, oxygen consumption,	Fixed according to the water plant management requirements	2000	20000	Be included in routine monitoring of water plant
		Noise	4 monitoring points shall be set at the boundary of the water plant and the boundary of the water pump house; 1 monitoring point shall be set in Huangshi Village	LeqdB（A）	4 terms/year, 1 day/term, twice/day, once every day and night	300	6000	Institutions with monitoring qualifications
Water Supply Pipeline Extension	Construction period	Surface water	Monitoring sections shall be set at 500m from upstream of and 500m from downstream	PH, DO, total phosphorus, NH3-N, COD, BOD_5, petroleum class	The construction influence period shall be detected for 2 days	1000	2000	

Project in Linchuan District			of Linchuan Bridge of Chongchuan River		and once a day			
		Noise	The monitoring points are respectively set in the Lijia Village of Wenquan Town, Liancheng Town and Hujia Village in Chonggang Town.	LeqdB（A）	4 terms/year, 1 day/term, twice/day, once every day and night	300	2700	

Table 5-7 Environmental Monitoring Plan and Budget Details for the Sub-project of Dongxiang District

Item (s)	Monitoring Period	Environmental elements	Monitoring point layout (Quantity)	Monitoring items	Monitoring frequency	Unit price (yuan/year)	Annual cost (Yuan/year)	Monitoring Institutions
New Project of Water Plant in Dongxiang District	Construction period	Noise	Along the original water pipeline: 1 monitoring point shall be set in the Village of Daping	LeqdB（A）	4 terms/year, 1 day/term, twice/day, once every day and night	300	1200	Institutions with monitoring qualifications
		Construction wastewater	The monitoring point shall be provided for the drainage port of the construction sedimentation tank	COD, BOD_5, SS	3 terms/year, 1 day/term, once a /day	1000	3000	
		Water and soil erosion	There are four observation sites and six sample sites	(1)Disturbance surface area, t digging and filling amount, runoff amount, temporary piled up in the area of pile soil, useless quantity layer stripping and temporary piled up, the number of temporary protection measures and control effects of soil and water erosion area of change (2) changes in soil erosion and erosion of water, and the effect of soil erosion on the prevention and control measures (3) the quantity and quality of soil and water conservation control measures, the survival rate, retention rate, growth situation and coverage of forest grass measures, the stability, integrity and operation of the engineering measures (4) soil and water conservation measures being implemented (5) changes in topography, topography and water systems	Background value check once time. During the construction period and natural convalescence period during the rainy season (April ~ September), once every month, the non-rainy season will be monitored once every three months. During the rainstorm period (the daily rainfall is greater than 50mm). Soil and water conservation years shall be monitored three to four times. Soil and water conservation measures being implemented shall be continuously monitored and monitored every 10 days. The changes in the	5000	200000	

					topography, topography and water systems, and the damage to the downstream and surrounding areas shall be monitored at least once every six months.			
	Operating Period	Atmosphere	The monitoring point shall be set at the boundary of the water plant	Cl_2	Once a quarter, 1 day/term	600	2400	
		Surface water	Three monitoring sections are arranged in each of the Hefang Reservoir and Hengshan Reservoir: 500m from upstream of the water intake, water intakes and 1,000m from downstream of the water intake;	PH, DO, total phosphorus, NH_3-N, COD, BOD_5, petroleum class	3 terms/year,for low flow period, high low period, and normal flow period, 3 days/term , once a day	2000	10000	Be included in routine monitoring of water plant
			The water inlet and the water outlet of the water plant are respectively provided with monitoring points;	Color, turbidity, odor and taste, gross visible matter, ph, total hardness (calculated as caco3), aluminum, iron, manganese, copper, zinc, anionic synthetic detergent, volatile phenol, sulfate, chloride, fluoride, cyanide, total soluble solids, arsenic, selenium, mercury, cadmium, chromium (hexavalent)), lead, nitrate nitrogen, chloroform, carbon tetrachloride, total number of colonies, total coliforms, heat-resistant coliforms, free residual chlorine, ammonia nitrogen, oxygen consumption,	Fixed according to the water plant management requirements	2000	20000	Be included in routine monitoring of water plant
County city pipe network extension project	Construction period	Noise	Monitoring points shall be set at Xiaohuang Town and Pogan Middle School	LeqdB（A）	4 terms/year, 1 day/term, twice/day, once every day and night	300	2400	Institutions with monitoring qualifications

Table 5-8 Environmental Monitoring Plan for Sewage Treatment Project

Item (s)	Monitoring Period	Environmental elements	Monitoring point layout (quantity)	Monitoring items	Monitoring frequency	Unit price (yuan/year)	Annual cost (Yuan/year)	Monitoring Institutions
Construction of new sewage pipe network and sewage treatment plant in Mujin Town, Xiushui County	Construction period	Noise	4 monitoring points shall be set at the boundary of sewage treatment plant	LeqdB（A）	4 terms /year, 1 day/term, twice/day, once every day and night	300	4800	Institutions with monitoring qualifications
		Surface water	Monitoring sections are arranged at 500m from upstream of the Zhajin River and 500m from downstream of the Zhajin River	pH, DO, COD, BOD_5, NH_3-N, TP	The construction influence period shall be detected for 2 days and once a day	1000	3000	
		Construction wastewater	The monitoring point shall be provided for the drainage port of the construction sedimentation tank	COD, BOD_5, SS	3 terms/year, 1 day/term, once/day	1000	3000	
		Water and soil erosion	There are four observation sites and six sample sites	(1)Disturbance surface area, t digging and filling amount, runoff amount, temporary piled up in the area of pile soil, useless quantity layer stripping and temporary piled up, the number of temporary protection measures and control effects of soil and water erosion area of change (2) changes in soil erosion and erosion of water, and the effect of soil erosion on the prevention and control measures (3) the quantity and quality of soil and water conservation control measures, the survival rate, retention rate, growth situation and coverage of forest grass measures, the stability, integrity and operation of	Background value check once time. During the construction period and natural convalescence period during the rainy season (April ~ September), once every month, the non-rainy season will be monitored once every three months. During the rainstorm period (the daily rainfall is greater than 50mm). Soil and water conservation years shall be monitored three to four times. Soil and water conservation measures being implemented shall be continuously monitored and monitored every 10 days. The changes in the topography, topography and water systems, and the damage to the downstream and surrounding areas shall be	5000	400000	

				the engineering measures (4) soil and water conservation measures being implemented (5) changes in topography, topography and water systems	monitored at least once every six months.			
	Operating Period	Atmosphere	The monitoring point shall be set on the boundary of sewage treatment plant	H_2S, NH_3	Once quarter, 1 day/term	1500	6000	
		Surface water	Three monitoring sections are arranged in the Zhajin River: section 500m from upstream of the water outlet, water intake and 1,000m from downstream of the water outlet;	pH, DO, COD, BOD_5, NH_3-N, TP	3 terms /year,for low flow period, high flow period, and normal flow period , 3 days/term, once a day	2000	10000	Be included in routine monitoring of sewage treatment plant
			The water inlet and outlet of the sewage treatment plant shall be respectively provided with monitoring points	PH, chemical oxygen demand, BOD 5, ammonia nitrogen, suspended substance, animal and plant oil, petroleum, anionic surfactant, total nitrogen, total phosphorus, chroma, fecal coliforms, total mercury, alkyl mercury, total cadmium, total chromium, hexavalent chromium, total arsenic, total lead,	According to the sewage treatment plant management requirements	2000	10000	Be included in routine monitoring of sewage treatment plant
		Noise	4 monitoring points shall be set in the plant boundary of sewage treatment plant	LeqdB（A）	4 terms/year, 1 day/term, twice/day, once every day and night	300	4800	Institutions with monitoring qualifications

Chapter VI Public Complaint Mechanism

6.1 Environmental complaints mechanism

The office of the project leadership team of each county shall establish an environmental impact complaint mechanism. The team leader shall be the member selected from the PMOs of each County, related county Environmental Protection Bureau, contractor, environmental assessment unit, etc. Environmental complaints acceptance offices located in various counties of sub-projects are in charge of daily complain. Each subcontractor shall have a special person on site to record the public complaints Environmental Protection BureauIn the construction period or operation period of the project, the public can make comments to the construction executing unit or construction unit in forms of letters, calls, faxes, e-mails, etc; the opinions may also be expressed through the Environmental Protection Bureau of each project County (prefecture) and the Complaint Office. Meanwhile, during the construction and operation of the project, each sub-project conducts a random return visit to each environment-sensitive target each year, and a public participation in-site survey will be held in the environment-sensitive target comparison and concentrated area once a year. According to the investigation results, the satisfaction level of the public is evaluated and the relevant opinions are analyzed, and the environmental mitigation measures are improved if necessary.

The environmental assessment unit, the construction executing unit, the construction unit and the operation unit shall organize the visit and investigation immediately in conjunction with relevant departments such as design department and other relevant departments after receiving the rectification notice of administrative departments or environmental protection complaints, and conduct rectification according to the actual conditions, and publicize the rectification scheme to solve the problem of environmental disputes.

6.2 Complaints and grievances channels

1. Establishment and composition of the institution

In order to protect the legitimate rights of the affected persons better, a complaint mechanism will be established to provide a convenient, transparent, fair and effective way of complaint for the affected persons, therefore the sub-PMO of each County shall establish an environmental impact complaint handling leading group. The team leader shall be the relevant personnel taking charge of the sub-project, and the group members shall be from sub-project, construction unit, relevant County Environmental Protection Bureau, contractor, environmental assessment unit, etc. The complaint handling office of the environmental impact complaint acceptance leading group is set up under the sub-project of each County, and the daily complaints will be collected, collated, and summarized by the complaint handling office. Each sub-project contractor shall designate special personnel on site to record grievances and complaints received from the masses.

2. Complaint and Grievance Procedure

The complaint handling leading group and office will begin receiving complaints within one week after the commencement of the construction, and simultaneously open the complaint telephone and complaint letter box, and disclose relevant complaint and grievance ways on the construction site.

Detailed complaint procedures are as follows:

Where the affected person considers his or her rights to be violated in any aspects involving environmental protection, a complaint in writing or orally to the complaint handling office or directly to the Contractor is allowed, and if it is an oral complaint, a detailed record shall be made and organized by the member of the complaint handling office or the Contractor, and the comments shall be submitted within two weeks.

If the complainant is not satisfied with the opinion of the complained contractor or the acceptance office, he or she may lodge a complaint with the Environmental Protection Bureau of the relevant County or prefecture in written form within 1 month, and after receiving the treatment opinion, the relevant County or prefecture Environmental Protection Bureau shall give a treatment opinion within the prescribed time.

If the complainant is still not satisfied with the treatment opinions of the relevant County or prefecture Environmental Protection Bureau, he may file a complaint tothe environmental protection department at the superior level or the Jiangxi Provincial Environment Protection Department after receiving the treatment opinion, or directly prosecute to the local people's court according to the *Civil Procedure Law of the People's Republic of China*, and the case shall be adjudicate by the court.

PMO social migration and resettlement public complaint mechanism, during the process of preparation and implementation of projects, as direct stakeholders as well as direct participants, residents may be trapped into some unforeseen problems and related recommendations. In order to ensure the enthusiasm and breadth of the residents and community participation, the project has established a transparent and effective channel for complaints and advices as shown in figure 6-1.

The residents may lodge complaints or suggestions to the management of the community, subdistrict, PMO or related departments if they have complaints and suggestions. Community neighborhood committee/Villagers committee, subdistrict office/township, management office of County (prefecture, district) sub-project or leading group or provincial project management leading group shall set up special personnel or department to accept, process and feedback complaints from residents and residents groups and register the Report.

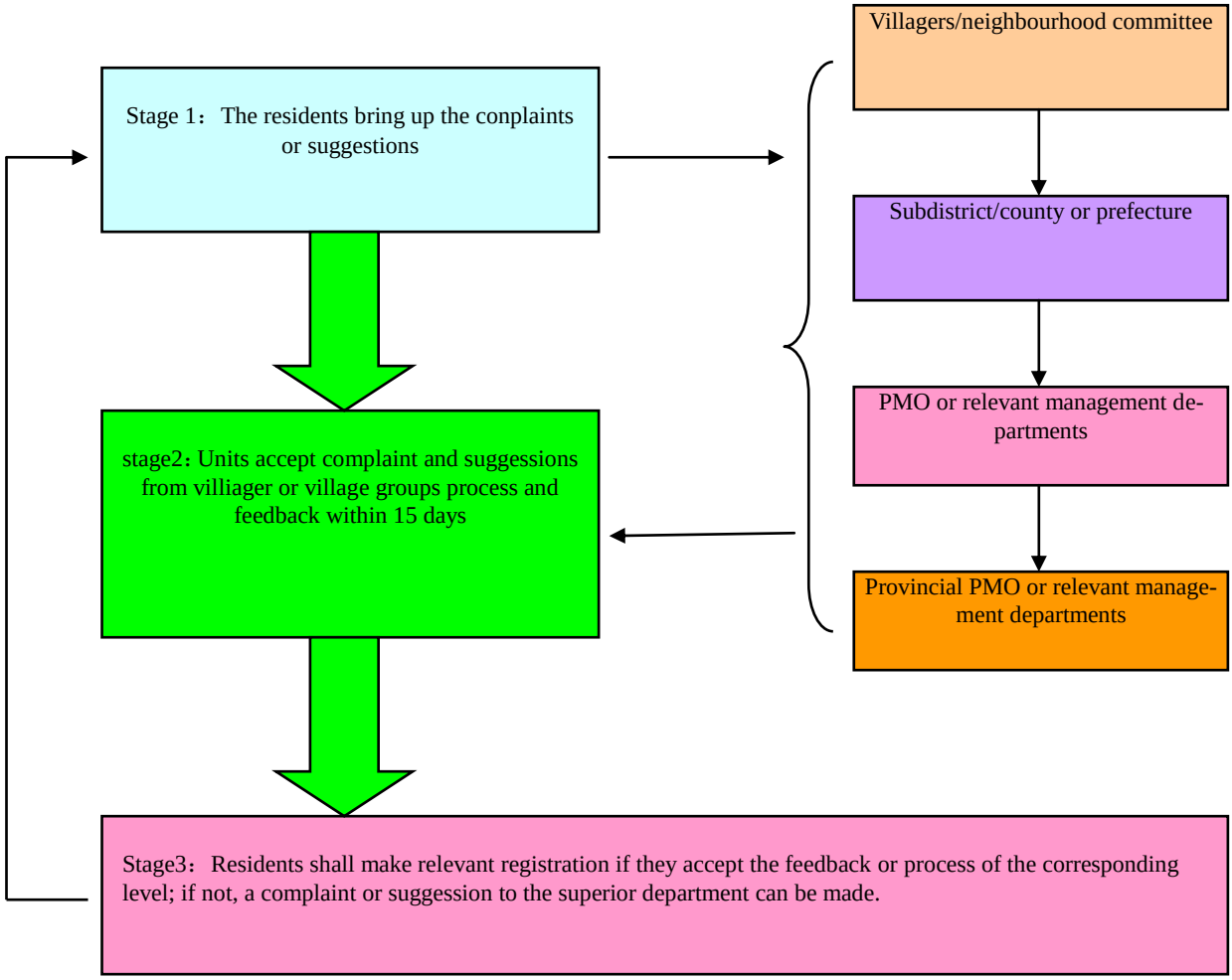


Figure 6-1 Complaint and Grievancce Handling Flow Chart

Chapter VII Information Management of Environmental Social Management Plan

7.1 Information exchange

Environmental management requires the necessary information exchange between different departments and different positions in each County (prefecture, district), owner, contractor and operator of the organization, and the organization shall also inform the outside (relevant party, social public, etc.) of relevant information.

Internal information exchange can be conducted in a variety of ways, such as meetings, internal briefings, etc., but there must be one formal meeting once a month, all of which shall be documented and archived.

The external information exchange shall be conducted once every half year or every year, and the information exchange with the collaboration unit shall be formed in a summary and be filed.

7.2 Record mechanism

In order to ensure the effective operation of the environmental management system, the Owner must organize a perfect recording system and keep records in the following aspects:

(1) Legal and regulatory requirements;

(2) licensing;

(3) Environmental factors and related environmental impacts;

(4) Training;

(5) Check, verification and maintenance activities;

(6) Monitoring data;

(7) Problems in environmental management and environmental protection;

(8) Effectiveness of corrective and preventive measures;

(9) Information about relevant items;

(10) Check ;

(11) Review.

It is also necessary to control the above types of records, including the identification, collection, catalog, filing, storage, management, maintenance, inquiry, shelf life and disposal of records.

7.3 Reporting mechanism

The PMO of Jiangxi Province, PMO of each County project, contractor, environmental supervision unit and the project operation agency shall carry out daily supervision and inspection on the progress of the project, the implementation of environmental measures, the implementation of the training, the data and conclusions of environmental monitoring, etc, during the implementation of the project, all those information shall be reported to the relevant departments timely. Specifically, the method comprises the following steps:

(1) The project environmental supervision engineer shall record the implementation of the ESMP in

detail monthly, and timely submit weekly report, monthly report to the project owner and County PMO of the where the project is located, the reports shall include the implementation of environmental protection measures, the implementation of environmental monitoring and the monitoring data.

(2) The owner or operator shall record the progress of the project and the implementation of ESMP quarterly, and timely report the quarterly report to the PMO in the County in which the project is located, and at the same time, copy the quarterly report to the County Environmental Protection Bureau of the project.

(3) During the construction period, relevant County project construction units or contractors shall entrust local monitoring stations or qualified monitoring bodies to conduct environmental monitoring and submit the reports to the local environmental protection department.

(4) During the operation period of the project, each project operation and maintenance unit shall conduct environmental monitoring on the operation of the project according to the environmental assessment requirements, and the monitoring unit shall timely submit the monitoring report to the owner after completing the monitoring and commissioning task. The Owner shall submit the monitoring report to the local environmental protection department in time. The monitoring report mainly includes monitoring time, frequency, monitoring point position, monitoring item, method and monitoring data and statistical analysis.

(5) The PMO of each County shall timely submit the project progress report to the provincial PMO and copy the project progress report to the provincial Environmental Protection Bureau at the same time.

(6) In the event of special irregularities in environmental protection happens, the supervision engineer and the PMO of each County (prefecture, district) will inform the local environmental protection administration department, and submit the event step-by-step if necessary.

(7) The ESMP performance report may include the following main contents for the EMP implementation report which shall be submitted to the World Bank twice a year:

a) Status of project progress;

b) Implementation of Project Environmental Protection Measures

c) Implementation of environmental monitoring and main monitoring results;

d) Implementation of the training plan; continuous public participation: whether there is a public complaint; if a complaint occurs, the main content, solution and public satisfaction of the complaint are recorded;

e) Existing problems and solutions;

f) ESMP Execution Plan for the second half of the year.

7.4 Document Management

In the implementation process of the *Environmental Social Management Plan*, the World Bank, Provincial Project Leading Group, PMO, Project Leading Group, PMO, the EIA Unit, Engineering Project Supervisor, and the construction unit shall manage the corresponding documents. For details, please refer to Table 7-1 below.

Table 7-1 Requirements for Document Management of Agencies

Operation period	Name of the institution	Document Management
Design period	EIA Unit	1. Prepare the contents of the *Environmental Social Management Plan*, and file the first draft, draft for review and approval documents.
Construction period	Construction Unit	1. Weekly record,file, and report the construction implementation details, to the engineering supervisor; 2. To complete and archive the construction site verification form and with the project supervisor before construction, and report it to the County project management; 3. When emergency and emergency situations happen, record and file the implementation of the construction, and report the situations to the engineering supervisor; 4. After receiving rectification notice, the rectification shall be completed within 3 working days (rectification demands coordination of management institutions shall be completed within 10 working days) and the documents shall be filed.
	Engineering Supervision Unit	1. Record and file the construction situation of the construction unit weekly, and report the situation to the County PMO; 2. The construction site verification form shall be completed and filed together with the construction unit before construction, and shall be reported to the County PMO; 3. In case of emergency and emergency situations, the specific implementation plan of the construction unit shall be recorded, filed and reported to the County PMO. 4. The construction unit shall propose a rectification solution for environmental protection issues during construction activities and follow up the implementation, including issuance of rectification notification, rectification check list and filing of inspection documents.
	PMO of each County	1. To record, organize and archive the contents of the complaint during the construction process; 2. Record and file the report of the engineering project supervisor quarterly, and submit the report to the provincial PMO (report forms) ; 3. Check the site verification form reported by the construction unit and the engineering project supervisor, verifying the environment-sensitive issue and file the form and issues; 4. Manage and archive the reported rectification notification.
	Provincial PMO	1. To supervise and file the implementation of the *Environmental Social Management Plan and archive*; 2. Record the report of each town project leading group and PMO every six months, and submit relevant reports and archives to the World Bank; 3. Coordinate with other relevant departments to solve major environmental problems and record and archive the specific measures;
	World Bank	1. Record and file the reports of provincial project leading group and PMO every six months;
Operation period	Provincial PMO	1. To supervise and file the implementation of the *Environmental Social Management Plan and archive*; 2. Record, organize and archive the contents of the complaint during the operation of the project;
	World Bank	1. Record and file the reported condition of the provincial project leading group and PMO every six months

Chapter VIII Estimation of Environmental Investment

Environmental investment proposed in this EMSP for the stage of design, construction and operation of "Jiangxi Integrated Rural and Urban Water Supply and Wastewater Treatment Project" (hereinafter referred to as "this Project") includes 1) environmental protection measures; 2) environment monitoring; 3) environment management training; 4) water and soil conservation; 5) cost of external monitoring; as well as 6) cost of environmental assessment and acceptance. The specific investment on environmental protection in this Project is RMB 1086.22(in RMB 10,000), tthe details are as shown in table below:

Table 8.1 List of Estimation for Project Environmental Investment

Item	Estimated Investment (in RMB 10,000)
1 Design stage	116
1.1 Assessment on environmental impact	116
2 Construction stage	813.7
2.1 Environmental protection measures	14
2.2 Soil and water conservation measures and monitoring	272.8
2.2.1 Soil and water conservation measures (included in engineering cost)	0
2.2.2 Soil and water conservation and monitoring	272.8
2.3 Environmental monitoring	51.9
2.4 Implementation of dam safety operation plan	177
2.5 External environment monitoring plan	240
2.6 Personnel training in construction period	58
3 Operation stage	136.52
3.1 Completion acceptance of environmental protection	80
3.2 Environmental monitoring (excluding the routine monitoring cost of water plant and sewage treatment plant)	44.52
3.3 Personnel training in operation period	12
Total	1086.22

Appendix 1

Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project

Implementation Procedure of Environmental Protection

Jiangxi PMO

Beijing Research Institute of Uranium Geology

November 2017

Contents

Chapter I Overview

1.1 Project Context

By applying for World Bank Loan, Water Resources Department of Jiangxi Province implemented the Project of Urban & Rural Water Supply Integration and Rural Sewage Treatment in Jiangxi Province in order to realize the purpose of "increasing the supply coverage of tap water to about 90% in rural population of overall province, reach the sewage treatment ratio of 85% at County level, and realize substantial improvement of sewage treatment in rural area by the end of 2020 (to totally eliminate the black and odorous water body; the present water is lower than the Category V discharge standard)". Contents of this Project include: building and transformation of water supply facilities in urban area, consolidation and improvement of water supply facilities in rural area, as well as building of sewage treatment plant and supporting pipelines. By implementing this Project, it can further improve the water supply guarantee rate and pipeline coverage rate in urban area, enhance the rural concentrated water supply rate, tap water popularizing rate, water qualification rate, and sewage collection rate and handling rate; further improve the living conditions in rural areas, and promote the comprehensive, coordinated and sustainable development of rural economy.

The aforementioned work shall be implemented in accordance with the requirements of municipal pipe network projects.

Environmental Protection Implementation Regulations mainly include project introduction, setting of environment management institution, implementation plan of environmental protection measures, environment supervision plan, reporting procedure, as well as requirements for file management.

1.2 Purpose of Environmental Protection Implementation Regulations

Corresponding alleviation measures shall be conducted in process of implementation in accordance with national environment impact assessment requirements for municipal pipeline projects, in order to determine and recognize the potential negative effects of this Project. Environmental impact assessment shall be implemented to sub-item in feasibility research process. In accordance with requirements of security policies (OP4.01) of World Bank, the environment in this Project is classified as Class B, specific to the potential adverse environment influences such as temporary storage and handling in municipal pipeline project. The *Environmental Protection Implementation Regulations* are hereby prepared in order to keep safety of construction personnel and the personnel in sensitive area, prevent the interference from construction period to sensitive area and surrounding areas.

The Regulations are hereby prepared for, in the implementation process of this Project, clarifying the responsibilities and duties of relevant departments in environmental protection; being used as the action guidance for environment management of this Project; guiding the Contractor to plan and

implement the alleviation measures of adverse influences of environment in construction period; guiding the Owner of projects to take contracted environmental protection measures after construction and operation of facilities. The Regulations bring forward the standard measures for preventing potential adverse environment impacts in the construction process of municipal pipeline project, contain a set of detailed, technically feasible, financially sustainable and operable environment measures, so as to eliminate or recover the adverse influences from this Project on the environment and society and reduce them to the acceptable level. The detailed objectives include:

(1) Clarifying responsibilities for environment management

County Environmental Protection Bureau, environment assessment unit and design unit shall implemented detailed field check to environment protection objectives, put forward effective environmental pollution alleviation measures and include them in the project design as the contractual obligations of the Contractor and the Operator. Project Management Department shall implement supervision inspection in accordance with the requirements of World Bank.

(2) Operation guide for environment management of project

The environment supervision plan prior to and during construction, as well as reporting procedure and file management procedure as proposed in the Regulations can ensure effective implementation of environment alleviation measures and, as the environment protection documents, they shall be submitted to the construction supervision unit, environment supervision unit and other relevant units, in order to clarify the responsibilities and functions of relevant functional departments and management institutions, and put forward the communication channels and methods between departments.

1.3 Principle for Environmental Protection Implementation Regulations

(1) Principle of science, objectivity and fairness: the Regulations shall be scientific, objective and fair, give full considerations for the potential influences from the Regulations on the environmental factors, as well as the ecological system composed of such factors, and provide scientific basis for decision-making.

(2) Principle of integrity: the Regulations shall link the relevant policies, plans and projects in order to have overall considerations.

(3) Principle of public participation: public participation is encouraged and supported in the process of the Regulations and full considerations shall be attached to the interests and advocating of all.

(4) Principle of consistency: the work in the Regulations shall be consistent with the construction layer and detailed level.

(5) Principle of operability: methods which are simple, practical and feasible shall be selected and the Regulations shall have operability.

1.4 Scope of Application

By implementing environment screening to type, position, sensitivity, scale and characteristics of potential environment influence of World Bank in accordance with requirements of environment screening and classification in safety guarantee policy and environment assessment (OP4.01) of World Bank, this Project is defined as Class B Project. The Regulations are mainly applicable to municipal pipeline and small civil construction projects, including municipal water supply pipeline, sewage pipeline project, water supply plant and rural sewage treatment plants.

Chapter II Relevant Laws, Regulations and Safety Guarantee Policies of World Bank

2.1 Relevant Laws and Regulations of China

(1) *Environmental Protection Law of People's Republic of China* (implemented as of December 26, 1989 and revised on April 24, 2014);

(2) *Law of the People's Republic of China on Evaluation of Environmental Effects* (implemented as of September 1, 2003, revised on July 2, 2016);

(3) *Law of The People's Republic of China on Water and Soil Conservation* (implemented as of June 29, 1991 and revised on December 25, 2010);

(4) *The land administration law of the people's Republic of China* (implemented as of January 1, 1987 and revised on August 28, 2004);

(5) Atmospheric Pollution Prevention and Control Law of the People's Republic of China (implemented as of June 1, 1988 and revised on August 29, 2015);

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

(7) *Law of the People's Republic of China on Prevention and Control of Water Pollution* (implemented as of May 11, 1984, revised on February 28, 2008);

(8) *Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes* (implemented as of April 1, 1996, revised on November 7, 2016);

(9) *Regulations on the Administration of Construction Project Environmental Protection* No. 253 Decree of the State Council (implemented as of November 29, 1998);

2.2 Security Guarantee Policies of World Bank

Environmental management regulations prior to construction and during the construction and operation period are prepared in accordance with environmental assessment business policy OP4.01 and combining the *Environmental, Health, and Safety Guidelines* of international finance corporation.

Chapter III Management System for Environmental Protection Implementation Regulations

3.1 Setting of Management System for Environmental Protection Implementation Regulations

In accordance with relevant regulations and needs of actual project, regulatory functions of this Project shall be performed by Environmental Protection Department pursuant to the laws, specific person shall be assigned by PMOs of all levels and one set of integral environment management system shall be established, in order to better realize the demonstration results of this Project.

Environmental management organization in construction and operation period is as shown in Fig. 3-1 and Fig. 3-2.

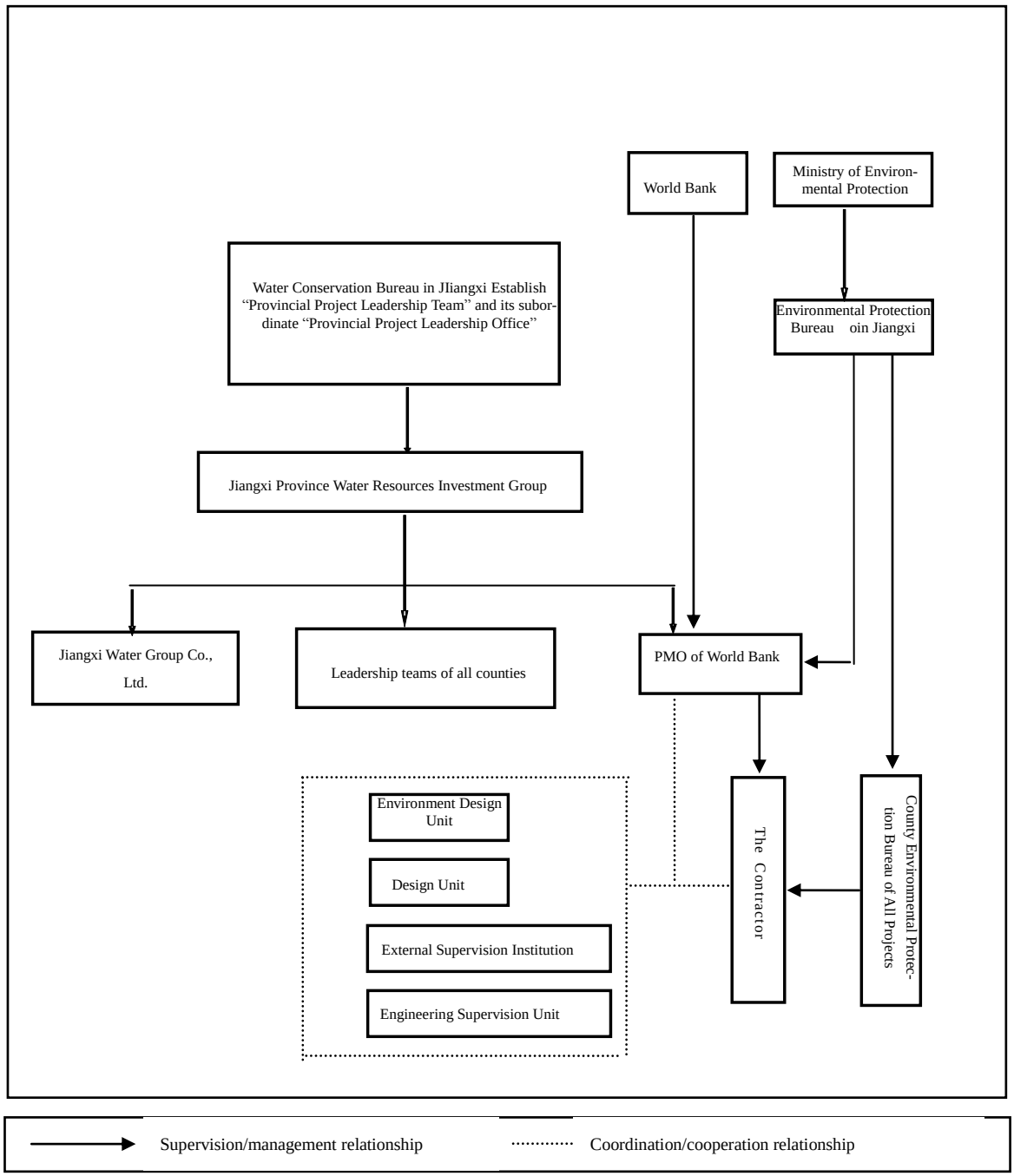


Fig. 3-1 Environmental Protection Management System in Construction Period

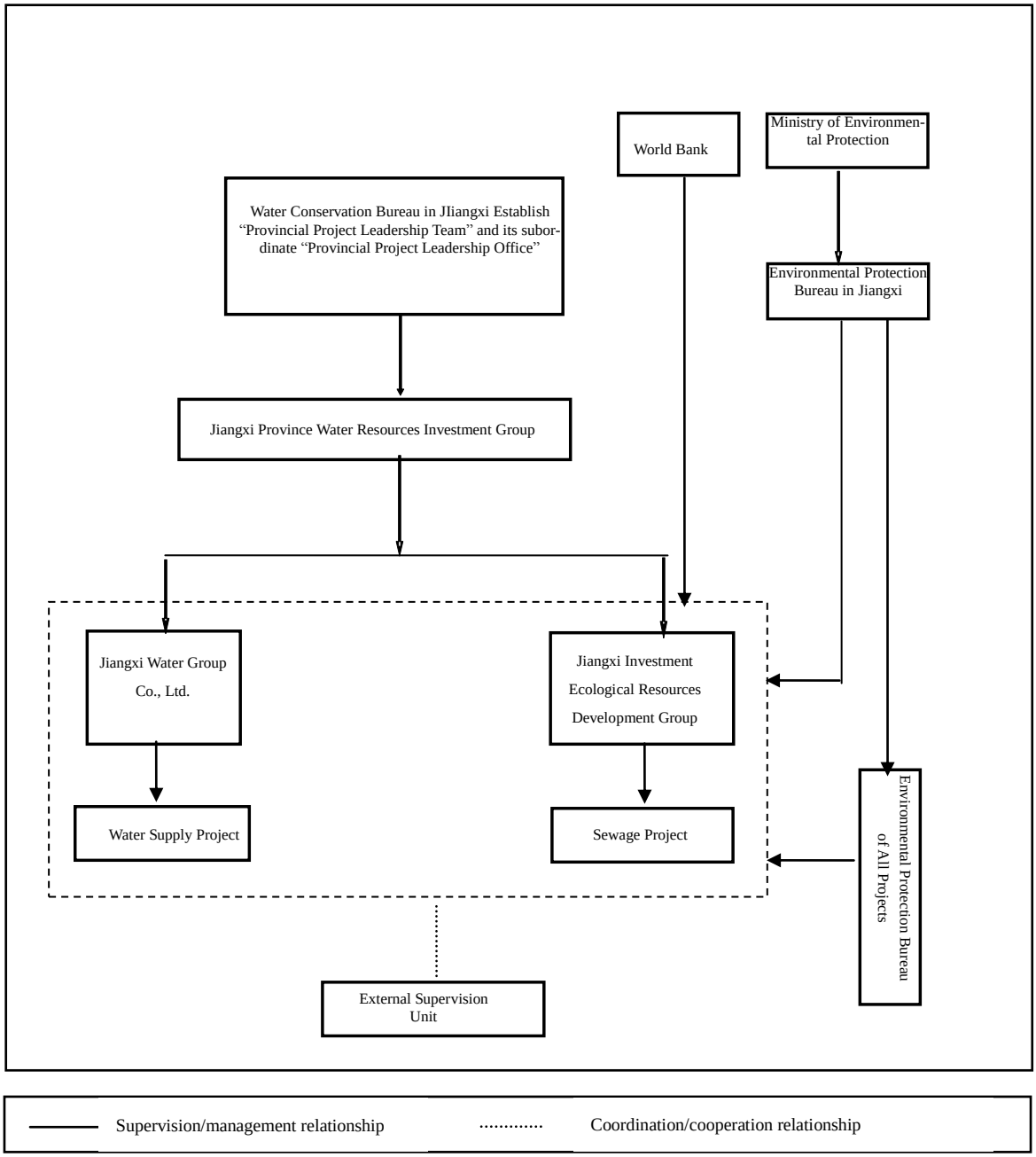


Fig. 3-2 Environmental Protection Management System in Operation Period

3.2 Responsibilities and Personnel Configuration of All Institutions in Environmental Management System

The environmental management system of this Project is composed of hired consultancy servicing institutions and external institutions bearing different working contents and responsibility scopes. Responsibilities and personnel configuration of all institutions in this Project are as shown in Table 3.2-1 below:

Table 3-1 Contents of Staged Environmental Management

Stage	Relevant Parties of Project	Major Contents of Environmental Management	Personnel Configuration
Design and preparation	Water Resources Department of Jiangxi Province (Establish Provincial Project Leadership Team)	The Owner shall organize, lead and coordinate the construction of loan project of World Bank.	1
	Jiangxi Province Water Resources Investment Group	Bearing the responsibilities of project selection and arrangement of supporting funds.	1
	Provincial PMO	1. Managing environmental protection in project design and preparation stage; 2. Coordinating and implementing environment management affairs with environment management department of government; 3. Hiring consultancy institutions such as design unit and environment assessment unit;	1
	Design Unit	1. Incorporating environmental protection measures in design plan and budget; 2. Incorporating alleviation measures of environmental and social management plan into the technical specification of bidding documents.	3
	Environmental Assessment Unit	1. Providing technical supports for environmental protection work of project design; 2. Preparing environment impact assessment documents of this Project; 3. Preparing environmental and social management plan.	5
Construction period	Provincial PMO	1. Implementing a series of environmental protection and management work in construction period and handling the expense of environmental protection work; 2. Managing and supervising environmental protection work in construction period; investigating and handling the or pollution problems occurred in construction process; 3. Coordinating and implementing environmental management with the environmental protection management de-	1

Stage	Relevant Parties of Project	Major Contents of Environmental Management	Personnel Configuration
		partment of government; 4. Tracking the execution of environmental and social management plan, and submitting report to competent departments of the same level and to World Bank on a regular basis. 5. Receiving and handling the public complaint.	
	Urban and Rural Water Supply Integration PMO of Yongxin County	1. Managing and supervising environmental protection work in sub-project of Yongxin County; investigating and handling the disturbance or pollution problems occurred in construction process; 2. Coordinating and implementing environmental management with local environmental protection management department; 3. Tracking the execution of environmental and social management plan of Yongxin County, and submitting report to Provincial PMO on a regular basis. 4. Receiving and handling the public complaint.	
	Urban and Rural Water Supply Integration PMO of Linchuan County	1. Managing and supervising environmental protection work in sub-project of Linchuan County; investigating and handling the disturbance or pollution problems occurred in construction process; 2. Coordinating and implementing environmental management with local environmental protection management department; 3. Tracking the execution of environmental and social management plan of Linchuan County, and submitting report to Provincial PMO on a regular basis. 4. Receiving and handling the public complaint.	
	Urban and Rural Water Supply Integration PMO of Jinxi County	1. Managing and supervising environmental protection work in sub-project of Jinxi County; investigating and handling the disturbance or pollution problems occurred in construction process; 2. Coordinating and implementing environmental management with local environmental protection management department; 3. Tracking the execution of environmental and social management plan of Jinxi County, and submitting report to Provincial PMO on a regular basis. 4. Receiving and handling the public complaint.	
	Urban and Rural Water Supply Integration PMO of Leping County	1. Managing and supervising environmental protection work in sub-project of Leping County; investigating and handling the disturbance or pollution problems occurred in construction process; 2. Coordinating and implementing environmental management with local environmental protection management department; 3. Tracking the execution of environmental and social management plan of Leping County, and submitting report to Provincial PMO on a regular basis. 4. Receiving and handling the public complaint.	
	Urban and Rural Wa-	1. Managing and supervising environmental protection work	

Stage	Relevant Parties of Project	Major Contents of Environmental Management	Personnel Configuration
	ter Supply Integration PMO of Nanfeng County	in sub-project of Nanfeng County; investigating and handling the disturbance or pollution problems occurred in construction process; 2. Coordinating and implementing environmental management with local environmental protection management department; 3. Tracking the execution of environmental and social management plan of Nanfeng County, and submitting report to Provincial PMO on a regular basis. 4. Receiving and handling the public complaint.	
	Urban and Rural Water Supply Integration PMO of Dongxiang County	1. Managing and supervising environmental protection work in sub-project of Dongxiang County; investigating and handling the disturbance or pollution problems occurred in construction process; 2. Coordinating and implementing environmental management with local environmental protection management department; 3. Tracking the execution of environmental and social management plan of Dongxiang County, and submitting report to Provincial PMO on a regular basis. 4. Receiving and handling the public complaint.	
	Urban and Rural Water Supply Integration PMO of Xiushui County	1. Managing and supervising environmental protection work in sub-project of Xiushui County; investigating and handling the disturbance or pollution problems occurred in construction process; 2. Coordinating and implementing environmental management with local environmental protection management department; 3. Tracking the execution of environmental and social management plan of Xiushui County, and submitting report to Provincial PMO on a regular basis. 4. Receiving and handling the public complaint.	
	The Contractor	1. Implementing the environmental protection measures and work in construction period in accordance with the bidding documents, contracting documents and this environmental and social management plan; 2. Receiving the guidance and supervision by environment management personnel and construction supervision engineer of PMO as well as relevant functional departments of government; 3. Receiving the technical supports provided by environmental protection consultancy institutions; 4. Taking safety protection measures; for example, establishing indication mark at construction site; building fences at boundary of construction site, establishing communication channel with the public and ensuring safety of construction. 5. Executing environmental and social management plan.	At least 1 environment manager shall be assigned by each Contractor
	Construction Supervisor	1. Supervising the environmental and social management plan executed by the Contractor, and implementing the environment alleviation measures in the Contract; 2. Providing on-site supervision to the implementation condi-	At least 1 environment manager shall be assigned by each Con-

Stage	Relevant Parties of Project	Major Contents of Environmental Management	Personnel Configuration
		tions of the Contractor; 3. Implementing environment management in cooperation with the Owner; 4. Recording the execution of environmental and social management plan, preparing report and submitting them to the Owner on a regular basis.	struction Supervisor
	External Monitoring Unit	1. Finishing environment monitoring work in construction period in accordance with the entrust by the Owner and environment monitoring plan proposed in this assessment; 2. Supervising the implementation of environment management measures and submitting them to the Owner on a regular basis.	Depending on scope of entrusted task
	County Environmental Protection Bureau	1. Implementing supervision and inspection to the practicing of environmental protection measures at construction site; 2. Arranging emergency measures in case of abnormal environment conditions in the process of construction; 3. Receiving the public complaint and handling it.	1
	Technical Assistance/Consultant	1. Providing technical supports for environmental protection work in process of construction in accordance with entrust of the Owner, this environment impact report and the design result of environmental protection; 2. Providing technical guidance for environment protection work and well implementing environmental protection training in the process of construction.	Unlimited
Operation period	Jiangxi Water Group Co., Ltd.	1. Implementing environment protection and management after operation of water supply project, and implementing alleviation measures and monitoring in environmental and social management plan of operation period; 2. Having communication with the competent departments of government, coordinating and implementing the affairs about environment management; 3. Emergency treatment of environment accidents; 4. Providing training to workers on a regular basis to improve their capability; meanwhile, actively implementing communication activities about environment protection skills and experience, in order to further improve the environment management work.	1
	Jiangxi Province Water Resources Investment Group	1. Implementing environment protection and management after operation of sewage project, and implementing alleviation measures and monitoring in environmental and social management plan of operation period; 2. Having communication with the competent departments of government, coordinating and implementing the affairs about environment management; 3. Emergency treatment of environment accidents; 4. Providing training to workers on a regular basis to improve their capability; meanwhile, actively implementing communication activities about environment protection skills and experience, in order to further improve the environment management work.	1
	External Monitoring	1. Finishing environment monitoring work in construction	Depending on

Stage	Relevant Parties of Project	Major Contents of Environmental Management	Personnel Configuration
	Unit	period in accordance with the entrust by the Owner and environment monitoring plan proposed in this assessment; 2. Supervising the operation of environment management measures and submitting the reports to the Owner on a regular basis.	the scope of entrusted task
	County Environmental Protection Bureau	1. Managing and supervising the realization of environmental protection objectives in operation period; 2. Implementing daily supervision and inspection to the operation of built environment protection facilities.	1
	The Public or Organization	Social supervision	Unlimited

3.3 Environment Management Task in All Stages of this Project

As shown in Fig. 3.3-1, the contents of the Regulations vary in different stages of project implementation.

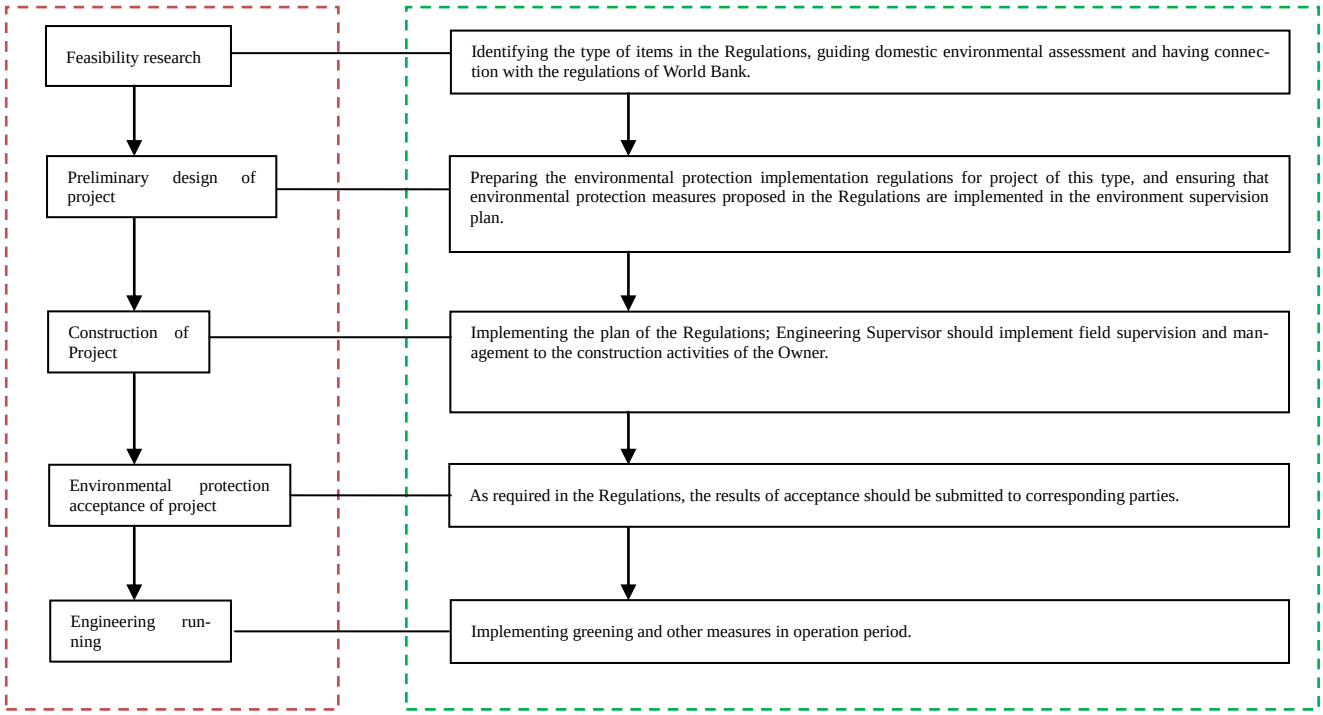
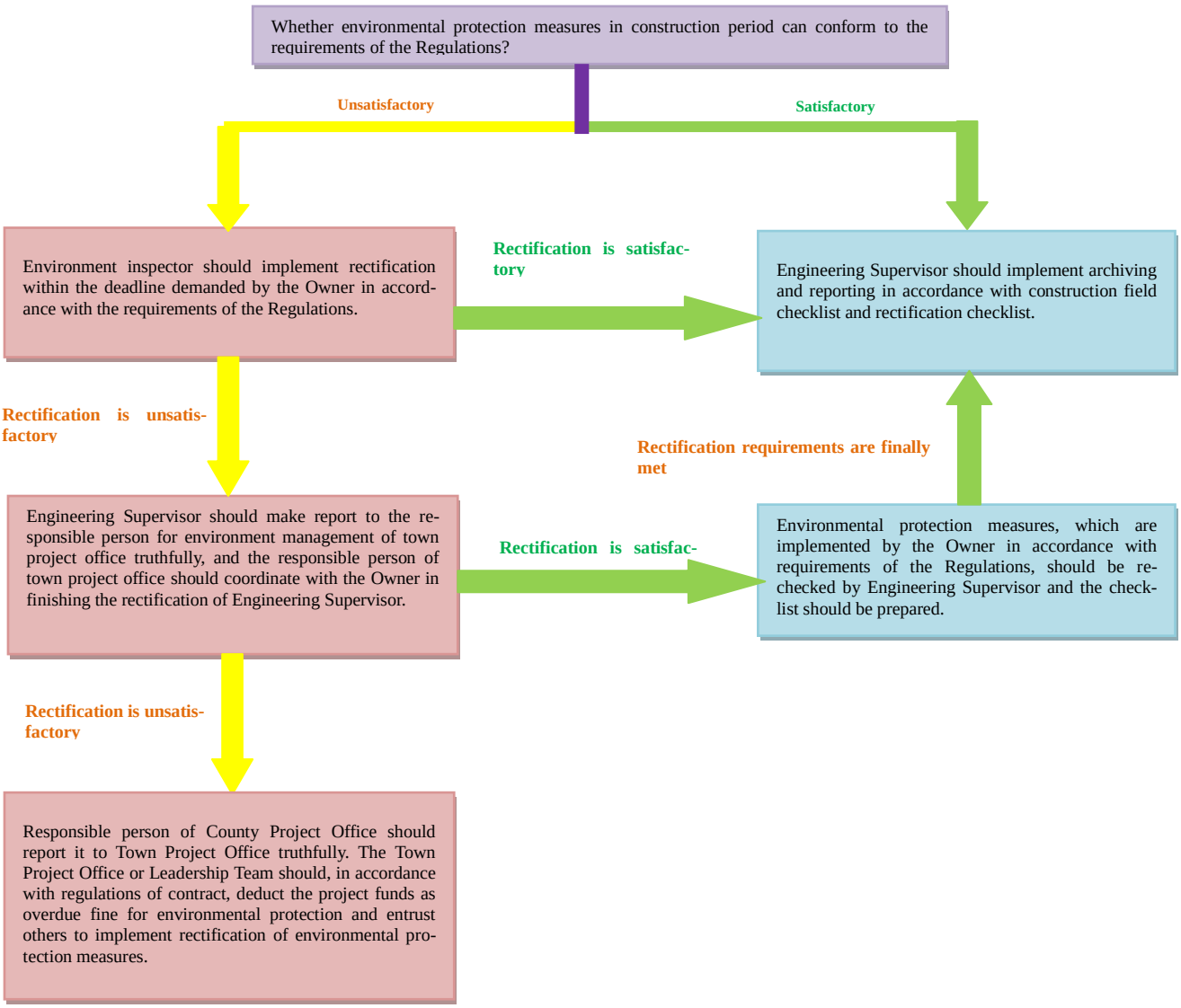


Fig. 3.3-1 Working Contents of Environmental Protection Implementation Regulations in Different Stages of Project

The primary working task for the Regulations is to have effective implementation of all environmental protection measures, including ① Environmental protection measures of project design and construction contract included in the Regulations; ② Supervising the implementation of environmental protection measures by the Contractor in construction period with the help of environment supervisor in the process of construction; ③ The mechanism of inspection, reporting and archiving in the Regulations. Effectiveness of work shall be reflected by checking daily work.

3.4 Working Process for Environmental Protection Implementation Institutions in Construction Period



3.5 File Management of Environmental Protection Implementation Regulations

Relevant files shall be managed by the World Bank, provincial leadership teams, PMOs, town project leadership teams, PMOs, environment assessment unit, Engineering Supervisor and the Contractor while implementing the Regulations. The details are as shown in Table 3.5-1 below:

Table 3.5-1 Requirements for File Management of Institutions

Name of Institution	File Management
① The Contractor	1. Recording detailed conditions of implementation, implementing archiving and reporting them to Engineering Supervisor on a weekly basis; 2. Finishing construction site checklist and implementing archiving together with Engineering Supervisor prior to construction, and reporting it to town PMO; 3. Recording detailed conditions of construction and implementing archiving in case of emergency and reporting it to Engineering Supervisor; 4. Finishing rectification within 3 working days upon receiving the notice of rectification (or such rectification shall be finished within 10 working days if coordination is needed by management institution) and implementing archiving of files.
② Engineering Supervisor	1. Recording detailed conditions of implementation by the Contractor, implementing archiving and reporting them to town PMO on a weekly basis; 2. Finishing construction site checklist and implementing archiving together with the Contractor prior to construction, and reporting it to town PMO; 3. Recording detailed conditions of construction of the Contractor and implementing archiving in case of emergency and reporting it to town PMO; 4. Putting forward rectification solution and implementing follow-up practicing to the environmental protection problems in construction activities of the Contractor, including issuing of rectification notice, rectification checklist and archiving of check files.
③ The Contractor	1. It is needed to prepare detailed implementation scheme for the Regulations, and implement archiving of first draft, draft for review and the draft for approval in all projects.
④ County project leadership team and PMO	1. Preparing and implementing environmental management rules and regulations of subproject and implementing archiving; 2. Preparing domestic environmental assessment file for approval and implementing archiving; 3. Preparing and implementing environment management training plan and implementing archiving; 4. Well implementing recording, arranging and archiving of complaint in construction and running process; 5. Recording the report by Engineering Supervisor, implementing archiving and submitting report (statement) to provincial PMO on a quarterly basis; 6. Receiving and signing the field checklist from the Contractor and Engineering Supervisor, verifying the sensitive problems of environment and implementing archiving; 7. Implementing management and archiving to the aforementioned rectification notice.
⑤ Provincial leadership team and PMO	1. Preparing and supervising the implementation of the Regulations and implementing archiving; 2. Recording the report of town project leadership teams and PMO on a semiannual

	basis, submitting relevant reports to World Bank and implementing archiving; 3. Solving major environmental problems together with other relevant departments and implementing recording and archiving to the detailed measures;
⑥ World Bank	1. Recording the reporting of provincial project leadership team and PMO and implementing archiving on a semiannual basis;

Chapter IV General Requirements for Environmental Protection Implementation Regulations

The Contractor plays a critical role in implementing environment management, pollution control and prevention measures in the process of project construction. General requirements listed in this Chapter shall be applicable to all major institutions of project construction process, in order ensure the execution of the Regulations. The Contractor shall, under the coordination of town PMO and Engineering Supervisor and internal/external supervision management, execute the environment measures proposed in the Regulations.

4.1 Implementation of Environment Measures in Construction Drawing and Bidding Documents

If this Project enters the stage of implementation, procurement activities in construction of all projects shall be launched in accordance with procurement guidance of World Bank. All County PMOs shall, under coordination, guidance and supervision of provincial PMO ask the preparation institution of bidding documents to write the alleviation measures against potential adverse environment impacts in the Regulations and environment impact assessment of subproject into the technical specification and construction drawing of bidding documents. All contents and requirements for the Regulations shall be included in the bidding documents and Contract by the Tenderee.

1. The Contractor shall establish supervisory responsibility system for environmental protection measures in construction period, undertake the implementation of environmental protection measures in the entire construction period, ensure that engineering construction activities of and construction activities of subcontractor (if any) can conform to the requirements of the Regulations, and ensure that necessary environmental protection measures are adopted in the process of construction.
2. In process of construction, the Contractor shall have communication and negotiation with the masses in all areas of this Project, establish bulletin board in all construction units, and notify the construction activities and construction period to the masses. Meanwhile, contact person and contact telephone of the Contractor shall be provided, in order to help the masses to implement complaint and provide suggestions for the construction activities.
3. The Contractor shall comply with the relevant regulations for safe and civilized constructions in local places.
4. The Contractor and Construction Supervisor shall, prior to start of construction, accept the training about environment protection and management. Hired experts, as entrusted by provincial PMO shall provide training to the Contractor and Engineering Supervisor, and identify the environmental protection requirements related to this Project.
5. For any severe risk occurred due to violation of environmental protection measures specified in the Regulations, the Engineering Supervisor or the Contractor shall notify them to the County

PMO within 24h after occurrence. In such case, County PMO and environmental protection departments of all levels shall immediately ask the Contractor to take remedy measures; the Contractor shall ensure the effectiveness of remedy measures, in order to prevent the reoccurrence of similar risks. Meanwhile, the Contractor shall keep records for the implementation of such measures, report it to the Engineering Supervisor on a regular basis; and Engineering Supervisor shall make report to town PMO and implement archiving of files.

6. Deposit for environment management shall be paid by the Contractor and included in the contracted funds in accordance with yearly reserved budget, and the amount of deposit shall account for about 3% of budget. If the Contractor shall, if found taking any adverse measures in environmental protection, be fined by provincial PMO in accordance with the contract; in such case, the project funds shall be deducted as environmental protection overdue fine and others shall be entrusted to take environmental protection measures.

4.2 Preparation prior to Construction

Under the coordination, guidance and supervision of provincial PMO County PMOs shall, after award of contract and prior to construction commencement, submit the results for environmental assessment of subproject, including the copies of environmental assessment report and local environmental assessment approval files, to the Contractor. The Contractor shall implement environmental investigation to construction site, in order to verify and identify the description of sub-project environment impact assessment to ambient environment, as well as the environmental limiting factors of this engineering area. Contents to be included are seen in Appendix 1 of the Regulations; besides, corresponding environmental protection measures shall be proposed for the sensitive environment problems, which are newly detected in environment investigation prior to commencement of construction. Construction shall not be commenced unless it is approved by Engineering Supervisor, so that construction activities in each stage can conform to the requirements of the Regulations.

Sensitive environment problems found in investigation prior to commencement of construction include:

- Check if pipelines for power supply, water supply, gas, optical cable and communication are buried in the construction road section;
- Check if there are sensitive points, such as school, hospital and concentrated residence in pipeline water plant, sewage treatment plant and pipeline construction road section;
- Check if there are famous woods and ancient trees to be transplanted in the construction road section;
- Check if procedures are handled in relevant departments such as Planning Bureau and Municipal Bureau of Parks and Woods and construction is legal.

4.3 Department Permission and Public Opinions

The Contractor shall, in the entire process of construction, have close cooperation with local government departments and other departments in order to fully comply with the laws and regulations of government. The Contractor shall make advanced notice of construction site to local residents, including the lasting period of construction. Sufficient information shall be provided to the masses, including construction behavior affecting public safety, as well as matters, sensitive area and temporary stacking ground which may impair the interests of the masses.

The Contractor shall provide public and transparent participation of the masses and establish hotline to receive the consultancy and suggestions from the masses. The hotline shall be used for handling the calls about construction interference, and all dialogues shall be recorded, in order to reflect the hot issues cared by the callers. Meanwhile, fast response mechanism shall be established to answer the hot issues of the masses.

Chapter V Management of Construction Site

As the main contents of the Regulations, this Chapter sets down the environmental protection measures and basic requirements for environment management to be adopted by the Contractor in this Project. This Chapter introduces the management requirements for construction site, including construction period, construction nameplate, construction fence, barricade, temporary road, construction camps and management of accident risk prevention. The Contractor shall comply with the management regulations of local environmental protection department and accept the regular inspection by environment supervisor.

Regulations for Construction Period

- Construction period: 6:00 a.m. ~ 22:00 p.m., 12:00~14:00 is for lunch break and construction is paused; the in-out time of construction vehicles shall conform to the requirements of local government;
- Night construction shall be limited and if it is inevitable, the residents nearby shall be informed in time; meanwhile, it is needed to handle relevant procedures and take measures to reduce the influences on the residents nearby.

Setting of Construction Nameplate:

- Information about construction and project schedule, service interruption, traffic detour circuit, temporary bus route and demolition shall be provided by the Contractor on the construction nameplate;
- Construction activities at night shall be limited;
- If necessary, influences from night construction to surrounding areas shall be controlled and community shall be informed in advance in order to help the masses take necessary measures;
- A prior notice shall be posted to the project site, bus station, affected residences and enterprises at least 5 days prior to interruption of services (including water, power, gas and bus circuit) in order to inform the masses.

Setting of Construction Fence:

- Construction fences shall be established at the boundary of construction site if construction period is > 30 days; such fences shall be metal sheets made of hard materials; generally, the height of fence shall be ≥2m in general area, or be ≥2.5m for fences at key construction areas;
- Fences shall be straight, neat, have clean surface and be free from damage; their surfaces shall be coordinated with the ambient environment;
- The fences in road construction shall be within 5m of sight distance of intersection; such fences shall be straight and rigid metal plate, avoid blocking the sight of drivers and pedestrians to keep safety of traffic; it is forbidden to stack objects within the sight distance of 5m;

- If fence is ≤5m of residence, or within 15m of sensitive buildings such as residence, hospital and school, it is needed to increase the fence height or set noise barrier which conforms to the relevant specifications and standards; it shall be kept clean within 5m at outer side of fence;
- It is forbidden to stack materials and earthwork within 1m at inner side of fence;
- It is forbidden to use fence as the support of retaining wall or other facilities and equipment;
- Fences shall be established at the boundary of construction site for pipeline engineering in key areas.

Setting of Construction Barricade:

- For road engineering with construction period ≤30 days, its construction boundary shall be provided with construction barricade;
- It is forbidden to use red and white isolation rope or other materials as substitution of construction barricade;
- The construction barricade shall be continuously enclosed fence. Such barricades shall be firmly fastened, neat and uniform and be kept clean and free from damage;
- Folding construction barricades shall be established if manhole covers have to be opened or lifted for construction at the town roads where traffic shall be maintained.
- While setting construction barricades, it is needed to keep the long-side section of base channel steel facing at construction area; the width of construction channel needed between construction barricade and construction area shall be ≥0.6m;
- The Contractor's name shall be printed on the construction barricade at horizontal direction. It is forbidden to use construction barricade of which name is inconsistent with this unit;
- Fully enclosed construction barricade shall be established at boundary of operation area before coating or cleaning the surface of buildings (structures); the machinery equipment, tools and materials shall be placed within the range of fence;
- It is forbidden to remove the construction barricade before traffic measures are adopted or project is completed;
- The construction method of "Excavating one section, paving one section, repairing one section" shall be adopted in road pipeline construction of key areas; it is forbidden to implement excavation simultaneously in the whole line.

Setting of Temporary Roads:

- If urban roads are occupied for construction, it is needed to conform to relevant regulations of public security and transportation department and road administration department, properly handle review and approval procedure, and set temporary channels in accordance with specification;
- It is needed to strictly follow the regulations in construction period, and it is forbidden to occupy road without permission or violate the regulations of construction period;
- If urban roads are occupied and bringing influences on access of vehicles and personnel, it is needed to set temporary roads in accordance with the regulations;

- If sidewalk is occupied for construction, it is needed to erect solid, smooth and continuous sidewalk at the entrance side of commerce, enterprise and office building or residential building and it is needed to keep safe passing of pedestrians;
- Steel plate coverage construction shall be adopted by the Contractor if trenches or pipe grooves need to be excavated on the urban roads which are not completed in that day but used as access roads;
- If trench (pit) excavation width is ≥0.8m, the lower end of coverage steel pipe shall be reinforced using metal sections;
- The supporting and reinforcement scheme shall pass safety confirmation and be submitted to the Owner for recognition; the steel pipe covered on roads shall have thickness ≥0.03. The steel pipe and metal slope frame shall be grinded along with the edge, so that it can be free from sharp corner and burr and keep safety of personnel and vehicles.

Setting of Construction Camps:

- Existing facilities at surrounding areas shall be fully utilized and houses shall be rent by the Contractor in order to reduce the influences on ambient environment;
- All solid wastes generated from construction site shall be reasonably arranged, stored and handled;
- Natural wood shall not be used as fuels for processing or preparing the materials for project, or cooking and heating.

Accident Risk Prevention:

- The Contractor shall set prevention measures of accident in advance, set responsible person for emergency and, in case accident occurs, timely contact the relevant departments for help.

Chapter VI Air Pollution Control

(1) During construction and operation of the project, the operation activities may result in the emission of air pollutants.

(2) The main air pollutants during the construction include:

- Dust caused by uncovering of side slope, stacking area, earth excavation and transport activity;
- Dust caused by material transportation on the construction road;
- Gas emitted during road surfacing;
- Exhaust gas emission of construction machinery and vehicles;

(3) The main air pollutants during the operation includes:

- Foul gas of wastewater treatment plant;

(4) Strengthen the environment management to reduce the influence of construction on the environment, and put forward the following measures:

- In dry weather, water shall be sprayed on the construction site to reduce dust;
- The cement silo and mortar dry powder silo on the site shall have effective dust control measures in the material in/out link;
- Measures such as grass seed planting for simple greening, dust-proof screen covering and new sealing process shall be taken for the muck and bare soil on the site;
- The soil from pipeline excavation shall be cleaned every day;
- The stacking height of muck on the site shall not exceed the height of fences or construction barrier;
- The vehicle for transporting powders shall be covered and washed before leaving the site;
- The powder materials shall be wetted during transportation;
- After removing the stacker, the rest dust shall be wetted and cleaned away from the road surface;
- The dusty pavement shall be hardened or keep wet through water-spraying;
- The water for reducing dust shall not influence the surface flow or the water consumption of the local community;
- The powder material storage yard shall be covered or sprayed with water for reducing dust;
- The cement bag shall be opened in a sheltered place;
- Construction shall be conducted within specified time to reduce air pollution. The con-

struction time is from 6:00 to 22:00, and 12:00 to 14:00 is the lunch break and the construction shall be stopped during the period;

- The goods shall be covered and bound firmly during transportation, and vehicles for transporting the earthwork, spoil and waste slag shall not be overloaded and avoid scattering;
- The influence of wind direction shall be considered when choosing the stacking position, and power materials shall not be disposed on the windward position;
- Windproof and dust-suppression measures shall be taken during construction material stacking;
- Confirm reasonable route of solid waste transportation, try to choose smooth-riding pavement and avoid bumping in order to reduce dust emission;
- Water shall be sprayed on the construction site of removal project;
- Temporary fence shall be arranged along the boundary of the construction site;
- The road access to the construction site and the construction road shall have speed limit signs, and the construction vehicle shall follow the speed limit regulation.

(5) Strengthen the environment management to reduce the influence of project operation on the environment, and put forward the following measures:

- The main odor polluting source thick grid station, thin grid station, sludge pump tank and sludge tank of the wastewater treatment plant shall have top cover or capping plate, the sludge dewatering equipment room shall be enclosed, and the collected exhaust gas shall be treated by biological deodorization device and emitted through an exhaust funnel of the length of 15m. The exhaust gas collection efficient shall be no lower than 90%, the purification efficiency of biological deodorization device shall be no lower than 80%, and the foul gas collection system shall be equipped;
- Tree species such as boxtree, oleander, planetree, southern magnolia and cedar and other flowers and plants shall be planted in the space, roadside and fence of the wastewater treatment plant to form multi-level isolation belt and protection forest belt

Chapter VII Water Pollution Control

(1) The wastewater of construction activity may have a bad effect on the aquatic ecosystem and water quality.

(2) During construction of the project, the following activity will influence the water quality:

- The wastewater of construction equipment, such as the uncontrollable bentonite discharged from the perforating machine;
- Wastewater from the drilling hole;
- Water and soil erosion caused by uncovering of material stack and excavation point under bad weather;
- The uncontrolled surface runoff will carry sediment into the water body directly, such as stream, fishpond and river;

(3) During construction of the project, the following activity will influence the water quality:

- The influences of water intake project on the hydrological regime of water source, the downstream ecological water demand and the receiving capacity of water functional area;
- The influence of the industrial wastewater and sewage of water plant, the backwash wastewater of filter and the discharged wastewater of sedimentation tank on the local water environment;
- The influence of wastewater treatment plant drainage on the receiving water;
- Domestic wastewater of staff of water plant and wastewater treatment plant.

(4) Strengthen the environment management to reduce the influence of construction on the environment, and put forward the following measures:

- A horizontal long drainage channel shall be arranged inside the entrance along the door line of the construction site with the fence and connected with the drainage system on the construction site;
- The arrangement of vehicle washing drainage channel shall be designed according to the vehicle size, whose surface shall be troweled and pressed polish with commercial pre-mixed mortar, and the channel mouth shall be covered with strong metal mesh;
- The construction site shall have a large sedimentation tank, and the sedimentation tank shall be dredged periodically according to the disposal mode of solid wastes;
- Domestic wastewater shall be discharged into the septic tank for three-level biochemical treatment firstly and further discharged into natural channel or the municipal pipe for proper treatment;
- Construction shall be conducted within specified time so as to reduce wastewater;
- The wastewater discharged into the surface water body and sewer line shall conform to the

Chinese water environment protection laws and regulations;

- The construction unit shall arrange personnel to clean the deposits in the pipe chase, blind shaft and sedimentation tank, once every 10 days for major area, and once a month for general area;
- The wastewater treatment system (the sedimentation tank) on the construction site shall be maintained periodically;
- The mud or muddy water shall be discharged into the city pipe network directly;
- The vehicle and equipment shall be cleaned before leaving the construction site;
- The transferring public road/place, entrance and temporary fence on the construction site shall be kept clean;
- The wastewater treatment system shall be stored in a place which is large enough;
- The discharging position of wastewater shall be specified.

(5) Strengthen the environment management to reduce the influence of project operation on the environment, and put forward the following measures:

- The sewage of water plant shall be discharged into the municipal wastewater line;
- The backwash wastewater of the water plant filter and the discharged wastewater of sedimentation tank shall be settled, and the supernate shall be reused for greening;
- Strengthen the monitoring on tail water quality of wastewater treatment plant and establish the online monitoring on effluent quality of wastewater treatment project;
- Strengthen the operation management and inspection on the structure of wastewater treatment project and the tour inspection and maintenance on the instrument and equipment for wastewater treatment, and ensure the safe operation;
- The domestic wastewater of staff shall be discharged into municipal wastewater pipe network after the treatment of septic tank;

Chapter VIII Noise Pollution Control

(1) A lot of equipment that may generate noise will be used during construction, such as back-acting shovel, bulldozer, crane, truck, generator, earthwork, transportation and vehicle traffic.

(2) The noise may be caused by the following activities:

- Operation of construction equipment (such as mechanical equipment, bulldozer and excavator);
- The transport vehicle transports materials inside and outside the construction site.
- Operation noise from intake pump, lift pump, blower room, sludge dehydration machine room and membrane treatment facilities of the water plant and the booster pump station.

(3) Strengthen the environment management to reduce the influence of construction on the environment, and put forward the following measures:

- Noise regulations shall be followed during construction;
- The unapproved or recorded construction shall not be carried out on the construction site;
- Except the special pipeline construction site that may be influenced by the traffic at daytime, night construction is prohibited;
- The night construction of special construction site shall be recorded by the administrative department synchronously, and mechanical equipment that generates noise shall not be started arbitrarily without authorization;
- During the college entrance examination and senior high school entrance examination, the construction unit shall arrange the construction procedure reasonably for the construction site where is no more than 100m away from the residential building and examination room except emergency repair and rescue, prevent excavation of pile foundation and foundation pit and follow the construction stopping regulation;
- Conduct pipeline construction, and construct using covering method when working on damage and excavated hard pavement;
- The pavement damage device shall be placed in the mobile operation room, and the pavement damage power machinery shall have noise reduction measures to control the noise effectively;
- During construction, use low-noise equipment or take noise reduction measures (sound barrier and noise reduction barrier);
- The Contractor shall maintain the construction equipment periodically and ensure the best working state and minimum noise level;

- Vehicle no-horn signs shall be set in sensitive places such as school, hospital, sanatorium and office building.

(3) Strengthen the environment management to reduce the influence of project operation on the environment, and put forward the following measures:

- Optimize the plane arrangement of water plant and wastewater treatment plant, and keep the noisy equipment away from the side of residential area;
- Take noise reduction measures (shock pad and sound insulating doors and windows) for the dehydration machine room and backwash room of water plant, increase sound insulation wall for the pump room except the above measures, and strengthen the operation and maintenance of equipment;
- Choose low-noise equipment and accomplish equipment operation and maintenance;
- Set centralized sound insulation control room in the noisy work shop, and use double-layer sound insulation door and window.

Chapter IX Solid Waste Management

(1) Solid wastes generally include all wastes. For example, the construction waste and removal waste in the construction area.

(2) The solid wastes may be caused by the following activities:

- The excessive earthwork during earthwork excavation shall be disposed;
- Disposal of wood, steel, site coaming and packing material during construction;
- Domestic solid waste of construction personnel;
- Sludge of water plant and wastewater treatment plant;
- Domestic wastewater of staff of water plant and wastewater treatment plant;

(3) Strengthen the environment management to reduce the influence of construction on the environment, and put forward the following measures:

- The construction site shall be clean and tidy (not chaotic);
- Clean and store the construction waste, reclaimable waste and ordinary waste on the construction site periodically and by categories;
- During construction, clean the polluted soil at once if oil overflows;
- Clean away the sand precipitated during facility flushing periodically;
- After completing the project, clean all remaining wastes on the construction site at once, and dispose them properly;
- Collect and remove all facility garbage periodically, and transport the domestic garbage to designated refuse landfill with covered container or truck;
- The area for storing the solid wastes on the construction site temporarily shall be large enough;
- Dehydrate sludge till the moisture content is below 60%, and deliver it to the refuse landfill for burying;
- Keep the transaction receipt for solid wastes transportation

Chapter X Ecological Environment Protection

(1) The ecological environment will be influenced by the project during construction, and suggestions for mitigation measures shall be put forward during environment social management plan.

(2) The ecological influence during construction is related with the following activities:

- Site and vegetation clearing may result in erosion of border trees and roadside vegetation;
- Excavation may result in soil interference;

(3) Strengthen the environment management to reduce the influence of construction on the environment, and put forward the following measures:

- The Contractor shall try to shorten the temporary land occupation time on the premise of guaranteeing the construction quality and quantity, control the earthwork construction time, maintain stable excavation and filling, reduce the influence on the exterior project construction scope, especially in rainy season, optimize the arrangement of construction site reasonably, try to reduce the construction activity scope, transport and use the construction material synchronously and recover greening after construction;
- After the construction of the temporary land, it is necessary to multiple crop the border tree timely and select the appropriate local species to compensate for planting and restoration of green
- Exposed soils need timely site restoration and revegetation and finished areas need to be restored to their original conditions for slope stability and soil integrity.
- The education and training of the ecological environmental protection common sense shall be carried out for the contractors and construction workers before the construction;
- Ensure there is no nature reserve, ecological garden and cultural protection zone near the construction site.

(4) Prohibitions:

- It is forbidden to cut down trees arbitrarily going beyond the approved construction;
- It is forbidden to disturb animals and plants outside the construction area.

Chapter XI Cultural Relics and Historic Sites

(1) Cultural sites and cultural relics may be affected by the project. These sites have been identified in the EIA report and shall be highlighted in the environmental and social management plan of the project.

(2) In the construction period, cultural relics and historic sites may be affected by the following:

- Disappearance or destruction of cultural sites due to the project;
- Potential damage to the structure and stability of cultural sites during construction and operation.

(3) According to the relevant survey, there are no cultural relics and historic sites in the construction area of the project. However, if any cultural relics or historic sites are discovered or suspected during excavation or construction, the following measures shall be taken:

- Immediately suspend constructions at the site finding such relics and reinforce the preservation of the scene;
- The contractor shall immediately report to polices and competent departments of cultural relics about cultural relics for authentication and treatment;
- The erosion caused by the shutdown of the contractor shall be compensated by the relevant departments of the state;
- Once they are identified as cultural relics, the scope of protection shall be timely delimited;
- It needs to rescue and excavate these relics due to the urgent construction period or risks of natural damages;
- Rescuing and exploration of relics shall be performed by specialists by dedicated equipment, rather than arbitrarily done by the contractor;
- If it is confirmed as a major cultural relics discovery, decisions shall be made about whether it needs to change the construction site of the project.

(4) Prohibitions:

- Do not allow to disturb anything that has architectural or historical value.

(5) Emergency Flow Chart

The emergency treatment flow chart of finding cultural relics is shown in Schedule 4.

Chapter XII Population Health and Safety

(1) The contractor has the responsibility to protect workers and property from construction accidents and comply with the national and local safety standards.

(2) Some key risks related to construction include:

- Risks of falling objects and working on unstable platforms;
- Fire risks;
- Risk of construction in unstable geological layer;
- Traffic safety in the construction area;
- Personal hygiene and spread of infectious diseases.
- To promote the safety awareness related to the law, public security and traffic safety of the employees.
- To impart health knowledge to employees, particularly HIV information; to encourage individuals to take protective measures by using condoms to avoid passing the disease on to others
- .Environmental protection education shall be given to employees to ensure that the on-site water sewage and solid waste are treated in accordance with the requirements of ESMP lest the spread of disease occur.

(3) Strengthen the environment management to reduce the influence of construction on the environment, and put forward the following measures:

- Keep the supply of traffic sign, road marking and guardrail products (including paint, easel and sign material, etc.) to make sure the safety of pedestrians during construction;
- Carry out training of safety for construction workers before starting the project;
- Provide personal protective equipment and clothing for construction workers and enforce them to use;
- Suspend all the works when encountering a rainstorm or any urgent accidents;
- Increase the prevention and education of AIDS for construction workers, such as implementing the information communication strategy, enhancing face-to-face consultation work, solve systemic problems affecting the individual behavior and encourage individuals to take protective measures, etc.

(4) Prohibitions:

- It is forbidden to use naked flame;
- It is forbidden to use unapproved poisonous material, including lead paint and asbestos;
- Workers are prohibited from using alcohol.

Schedule 1 Pre-construction Site Checklist

No.: Contract No. and name:

Project name: Cc Unit:

Current construction stage: Inspector: Date:

Inspection item	Implementation conditions			Remarks/proposed actions
	Implementation	Not implemented	N/A	
1. Natural habitats				
1.1 Is the construction area located in or near any national park (existing or planning), nature reserve or area of high cultural value?				
1.2 Is there any vulnerable or endangered species (land or aquatic) in the construction area?				
1.3 Is there any natural habitat in the construction area?				
1.4 If there is a natural habitat in the construction area, is it vulnerable, rare and limited scope?				
1.5 Is there wetland or saturated soil area (permanent or temporary) in the construction area?				
1.6 Is there any known archaeological, historical or other cultural heritage (including graves and cemeteries) on the construction site?				
1.7 Others (please specify in detail)				
2. Physical Cultural Resources				
2.1 Whether the project will cause permanent or temporary migration, or whether it will have other effects on the known physical cultural resources?				
2.2 Whether the physical cultural resources of the project will be of significance for local residents (such as cemeteries)?				
2.3 Is there any known archaeological, historical or other cultural heritage (including graves and cemeteries) on the construction site?				

Inspection item	Implementation conditions			Remarks/proposed actions
	Implementation	Not implemented	N/A	
2.4 Others (please specify in detail)				
3. Pre-construction Preparation				
3.1 Has the construction team been hired?				
3.2 Has the location of the storage area been decided?				
3.3 Have the seeds, native vegetation and topsoil been collected and stored for reuse in case of site recovery?				
3.4 Are the road sections of the construction cleared, including roots and organic waste?				
3.5 Investigate to see whether there are power supply lines, water pipelines, gas pipelines, optical cable, pipelines of telecommunications and other facilities buried in the construction section or not?				
3.6 Investigate to see whether there are schools, hospitals, concentrated residentials and other sensitive points in the pipeline construction section or not?				
3.7 Investigate to see whether there are ancient and famous trees needed to be transplanted among the border trees in the pipeline construction section or not?				
3.8 Whether someone goes to the Planning Bureau, Municipal Gardens Bureau and other relevant departments for handling formalities prior to commencement and the project is commenced legally?				
3.9 Others (please specify in detail)				
4. Surrounding Environment and Population				
4.1 Whether this project will violate the interests of sur-				

Inspection item	Implementation conditions			Remarks/proposed actions
	Implementation	Not implemented	N/A	
rounding farmers?				
4.2 Whether the construction of the pipeline will affect surrounding farmers?				
4.3 Whether the project will involve temporary land occupation?				
4.4 Whether this project will involve claim payment?				
4.5 Whether this project will affect production facilities?				
4.6 Whether this project will affect the service or resource channel?				
4.7 Whether this project will hinder normal life?				
4.8 Others (please specify in detail)				

Schedule 2 Construction Management Checklist

No.: Contract No. and name:

Project name: Cc Unit:

Current construction stage: Inspector: Date:

Inspection item	Implementation conditions			Remarks/proposed actions
	Implementation	Not implemented	N/A	
1. Air Pollution Control				
1.1 Whether the construction site is sprinkled to reduce dust?				
1.2 Whether the vehicles shipping the powder are covered or cleaned before leaving the site?				
1.3 Whether dusty road is hardened or sprinkled to keep wet?				
1.4 Has it been ensured that the water for reducing dust shall not influence the surface flow or the water consumption of the local community?				
1.5 Shall the powder material storage yard be covered or sprayed with water for reducing dust? Shall the cement bag be opened in a sheltered place?				
1.6 Whether the tire washing facilities are inspected, maintained and cleaned regularly?				
1.7 Whether the goods transported are covered properly and bound securely during transportation?				
1.8 Whether the effect of wind is considered when choosing the location of the material stack?				
1.9 Whether the stack of the construction materials is given measures of preventing wind and suppressing dust?				
1.10 Whether a reasonable route for solid waste transportation has been identified to reduce dust emissions or not?				
1.11 Whether the demolition project is sprinkled or not?				
1.12 Whether the place (such as blunging) generating dust is closed?				
1.13 Whether a temporary wall on the construction site is set up?				
1.14 Whether speed limit and a speed limit sign has been erected on the construction road?				
1.15 Whether the construction vehicles comply with the speed limit?				
1.16 Whether the construction is done within the specified working time or not so as to reduce dust emission?				

Inspection item	Implementation conditions			Remarks/proposed actions
	Implementation	Not implemented	N/A	
1.17 Whether the powdered materials are wetted before shipped?				
1.18 Whether any remaining dust materials are wetted by water and removed from the pavement after the material is removed?				
1.19 Shall the cement silo and mortar dry powder silo on the site have effective dust control measures in the material in/out links?				
1.20 Whether the earth from excavating the pipeline is cleared away every day?				
1.21 Others (please specify in detail)				
2. Water Pollution Control				
2.1 Whether a horizontal long drainage channel is set up inside the entrance and along the door on the construction site where a fence is erected?				
2.2Whether the drainage channel is connected to the drainage system of the construction site?				
2.3 Whether the flushing flume set of the vehicle is designed according to the specific size of the vehicle?				
2.4 Whether the sedimentation tank with enough capacity is set up in areas without sewer and on the construction site?				
2.5 Whether the sedimentation tank is dredged regularly and handled according to the handling method of solid waste?				
2.6 Whether the domestic wastewater is discharged into the sewer?				
2.7 Whether the drainage tank is exposed to sludge discharge?				
2.8 Whether the construction is done within the specified working time so as to reduce the generation of wastewater?				
2.9 Shall the wastewater discharged into the surface water body and sewer line conform to the Chinese water environment protection laws and regulations?				
2.10 Whether the wastewater treatment system (such as sedimentation tank) is handled and maintained normally on the construction site?				
2.11 Whether the vehicles and equipment are cleaned before leaving the construction site?				
2.12 How about the maintenance condition of the washing facilities? Whether it is possible to prevent sediment from overflowing or being				

Inspection item	Implementation conditions			Remarks/proposed actions
	Implementation	Not implemented	N/A	
submerged?				
2.13 Whether public roads/places, entrances and temporary walls around the construction site are kept clean or covered with mud?				
2.14 Whether there is enough place to store the wastewater treatment system?				
2.15 Whether the location of the wastewater discharge point is defined?				
2.16 Others (please specify in detail)				
3. Noise Pollution Control				
3.1. Shall noise regulations be followed during construction?				
3.2. Whether there is a valid Construction Noise Permit in the noise-restricted period?				
3.3 Conduct pipeline construction, and shall the covering method be used to conduct when working on damage and excavated hard pavement?				
3.4 Whether the construction of special sites at night is put on the record to the administrative department?				
3.5 Shall during the college entrance examination and senior high school entrance examination, the construction unit arrange the construction procedure reasonably for the construction site where is no more than 100m away from the residential building and examination room except emergency repair and rescue, prevent excavation of pile foundation and foundation pit and follow the construction stopping regulation?				
3.6 Shall the pavement damage device be placed in the mobile operation room? And shall the pavement damage power machinery have noise reduction measures to control the noise effectively?				
3.7 Whether the low-noise equipment is used during construction?				
3.8 Whether the construction is done within the specified working time so as to reduce the generation of noise?				
3.9 Whether the low-noise equipment is used and noise reducing measure (sound boarding noise barrier) is taken during construction?				
3.10 Whether the contractor maintains the construction equipment and controls it in their best				

Inspection item	Implementation conditions			Remarks/proposed actions
	Implementation	Not implemented	N/A	
working condition and lowest noise level to the greatest extent?				
3.11 Whether no-tooting signs of vehicles are set up in schools, hospitals, sanatoriums, office buildings and other sensitive spots?				
3.12 Others (please specify in detail)				
4. Solid Waste Management				
4.1. Whether a unit with business license will be selected for solid waste management?				
4.2 Whether the construction site is clean and tidy (whether there is the situation of disorder)?				
4.3 Whether the construction waste, recyclable waste, general rubbish, ect. on the construction site is cleaned and classified and stored regularly?				
4.4 Whether there is oil overflowing and the contaminated soil is cleaned immediately during construction?				
4.5 Whether the obstruction in the drainage channel and sewer is cleared away during construction?				
4.6 Whether sediment deposited at flushing facilities is cleared away regularly?				
4.7 Shall all remaining wastes on the construction site be cleaned at once and be disposed properly?				
4.8 Whether garbage of all the facilities is collected and removed regularly?				
4.9 Whether there is enough area for temporary storage of solid waste on the construction site?				
4.10 Whether the transportation route of solid waste is defined?				
4.11 Whether the detailed list of solid waste disposal is drawn up?				
4.12 Whether the transport transaction documents of solid waste are retained?				
4.13 Others (please specify in detail)				
5. Ecological Environment Management				
5.1 Whether recovery measures are taken for damaged border trees?				
5.2 Were the suitable native species chosen for compensatory planting and greening recovery?				

Inspection item	Implementation conditions			Remarks/proposed actions
	Implementation	Not implemented	N/A	
5.3 Were there any types of pets or animals feeding on the construction site?				
5.4 Were the ancient and famous trees which need not be exploited protected in the largest degree on the construction site?				
5.5 Was the construction process carefully arranged to reduce the construction time?				
5.6 Was the education and training of the ecological environmental protection common sense carried out for the contractors and construction workers before the construction?				
5.7 Others (please specify in detail)				
6. Personnel health and safety management				
6.1 Were there the signs to ensure the health and safety of people on the construction site?				
6.2 Does the construction unit provide the construction workers with safety equipment and educate them on safety and AIDS?				
6.3 Was there any firefighting equipment configured on the campsite, to the site facilities and on the construction areas?				
6.4 Did the various mechanical operators and vehicle operators have the operating certificates?				
6.5 Was there enough fire-fighting equipment, fire-fighting water pipes and fire hydrants to prevent the fire on the construction site?				
6.6 Was there any safety sight distance set in the construction area?				
6.7 Others (please specify in detail)				
7. Cultural relics and historic sites				
7.1 Were the constructions Immediately suspended at the site where cultural relic was found, and was the preservation for the site reinforced?				
7.2 Did the contractor immediately report to the police and the competent departments of cultural relics for authentication and treatment?				
7.3 Was the erosion caused by the shutdown of the contractor compensated by the relevant departments of the state?				
7.4 Once cultural relics were identified by experts, was the scope of protection timely de-				

Inspection item	Implementation conditions			Remarks/proposed actions
	Implementation	Not implemented	N/A	
limited?				
7.5 were the cultural relics rescued and excavated due to the urgent construction period or risks of natural damages?				
7.6 Were the cultural relic rescued and excavated by professionals with professional equipment?				
7.7 Was the demonstration of project construction in another place executed once it was defined as significant cultural relics discovery?				
7.8 Others (please specify in detail)				

Schedule 3 Environmental Rectification Notice

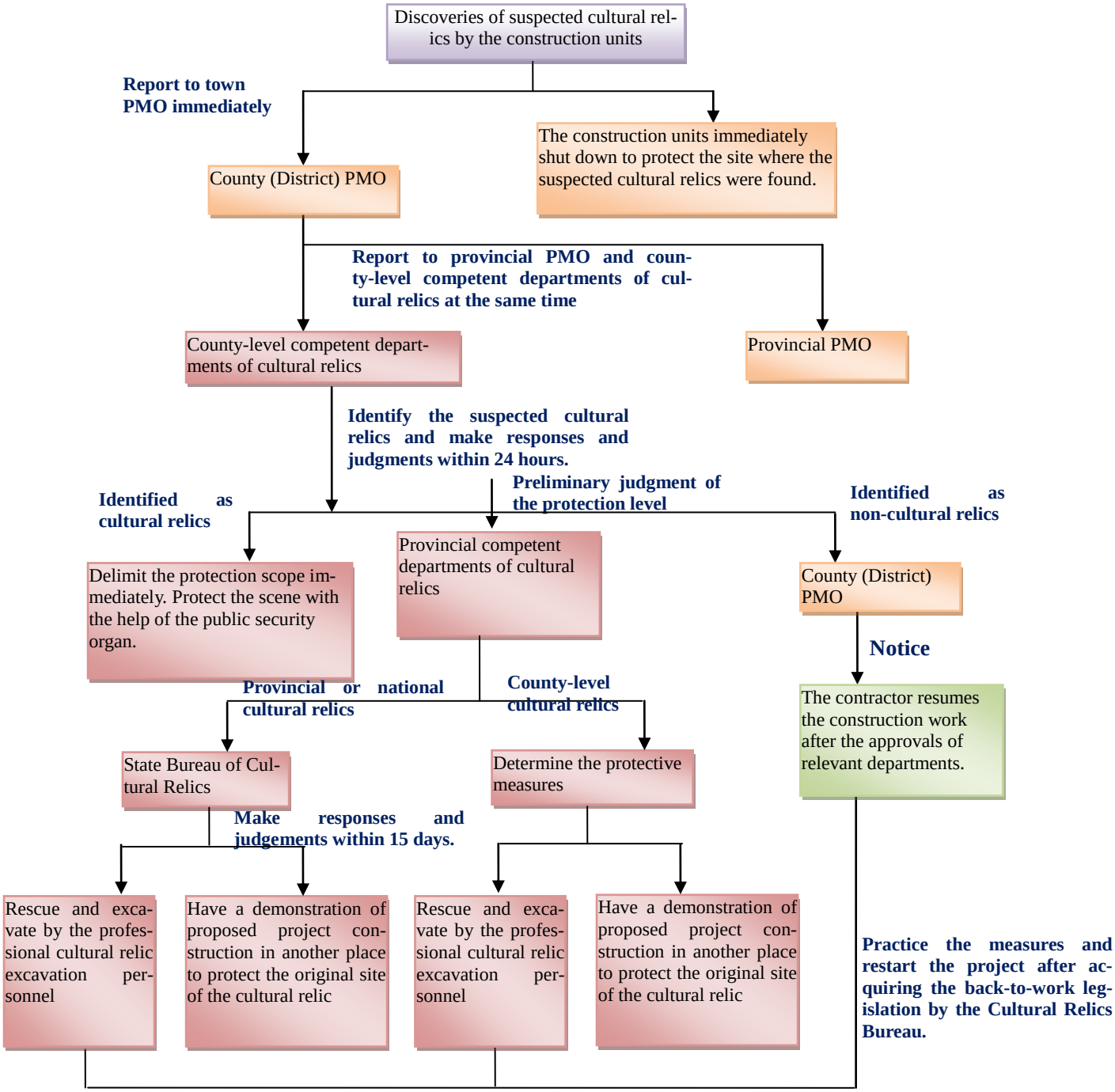
No.: Contract No. and name:

Project name: Cc Unit:

Current construction stage: Date:

Problems concluded from the on-site inspection:
Reasons analysis and improvements:
Rectification opinions of Environmental Protection Department (if necessary):
Environment inspector: Date: Qualified rectification date: Finished within _ Accepter: Date:
Review conclusion: Re-examiner: Date:

Schedule 4 Emergency Response Flow Chart of Cultural Relics Discovering



Appendix 2

Jiangxi Provincial Integrated Urban-rural Water Supply and Rural Wastewater Treatment Project

Physical Cultural Resources Management Plan

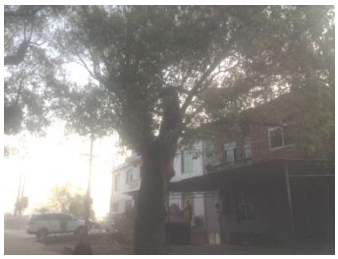
JiangXi Province Water Resources Investment Group

September 2017

1. Investigation of local physical cultural resources

According to the results of the EIA survey, the local physical cultural resources that may be affected by Jiangxi Provincial Integrated Urban-rural Water Supply and rural wastewater treatment project are mainly ancient trees and Putian Six Groups ancestral hall. The details are as follows.

Figure 1-1: List of Local Physical Cultural Resources Which May Be Affected by Jiangxi Provincial Integrated Urban-rural Water Supply and Rural Wastewater Treatment Project

County/ City	Sub-project Name	Location	Name	Distance from the project	Description	Site photos
Yongxin	Pipe Network Extension Project of Yongxin County	Shiqiao Town	Ancient trees	15m	Located in Zhangshi Village, camphor tree, tree-age unknown, grow well	
Nanfeng	Pipe Network Extension Project of Nanfeng County	Qiawan Town	Ancient trees	15m	Located in Taoyuan Village, camphor tree, a 1000-year-old tree, a first grade state protection ancient tree, grow well	
			Ancient trees	15m	Located in Taoyuan Village, camphor tree, a 280-year-old tree, a third grade state protection ancient tree, grow well	
			Ancient trees	15m	Located in Taoyuan Village, camphor tree, tree-age unknown, a third grade state protection ancient tree, grow well	
Leping	Township Pipe Network Extension project of Leping City	Hougang Town	Ancient trees	10m	Located in Panxi Village, camphor tree, tree-age unknown, grow well	

	Rural Water Supply Pipe Network Transfor-mation and Extension Project of Leping City	Yongshan Town	An-cient trees	8m	Located in Fangjia Village, camphor tree, tree-age un-known, grow well	
Xiushui	Rural Wastewater Treatment Project of Xiushui County	Zhajin Town	Putian Group Six An-cestral Hall	30m	Single-storey building, located at the group six of Zhajin town, used for fete by Villag-ers	

2. Project influences on the physical cultural resources and the protective measures

The basic protective measures for the affected physical cultural resources have been included in the environment social management plan of this project. According to the field investigation, Jiangxi Provincial Integrated Urban-rural Water Supply and Rural Wastewater Treatment Project does not involve the transplantation of the affected rare and ancient trees and only involves some noise and dust affections in the project construction process. Putian Group Six Ancestral Hall located about 30m southeast of the wastewater treatment plant area is mainly affected by the noise and dust during the construction.

Figure 1-2: Protective Measures to Local Physical Cultural Resources Which May Be Affected by Jiangxi Provincial Integrated Urban-rural Water Supply and Rural Wastewater Treatment Project

S/N	Physical cultural resources type	Name	Key influences	Mitigation measures
1	Famous and ancient tree	Camphor tree	All the ancient trees are not sited in the scope of construction and are 8~15m away from the construction area. The influences of pipe network construction on ancient trees mainly include the ecological influence and construction fugitive dust influence.	The construction shall be strictly carried out in accordance with *Measures for the Protection of Ancient and Famous Trees* and relevant laws and regulations to ensure that the project construction will not adversely affect the ancient trees. Specific measures include: 1. Number each tree and hang tags with the name, diameter and age of the tree and the protection precautions on each tree; and provide dedicated tools. 2. Establish tree files including the photo of each tree in addition to the text information; implement the tracking management of the entire construction process. 3. Strengthen the environmental management during the construction for the soaking of construction waste liquid into the roots of the trees and soil can result in soil compaction and poor permeability, and can affect the growth of trees or directly injure the roots of trees. 4. Prohibit operations under fire or gas around the ancient trees, keep clean it and pile no sundries around the ancient trees, ensure that each tree is equipped with sufficient fire-fighting equipment within10m radius around it.
2	Ancestral hall	Putian Group Six Ancestral Hall	Putian Group Six Ancestral Hall located about 30m southeast of wastewater treatment plant area is mainly under noise and dust influences during the construction, and noise and atmosphere influences during the operation.	1. Before construction, the construction unit shall negotiate with the family patriarch of the ancestral hall and the Village head to formulate practical and effective protection plans. 2. Before construction, a detailed construction plan shall be formulated. At the construction site, the protection identifier of the ancestral hall shall be clear. The identifier shall indicate the nature of the ancestral hall, the Village it belongs to, the scope of protection and the protective measures as well as the contact person and contact information of the administrative agency of the ancestral hall. 3. Before the construction team enters into the site, first of all, all the construction workers shall be organized to study in-depth the construction operation rules. The construction shall be regulated to prevent random expanding of the construction scope. 4. During the construction process, temporary fence and noise barrier shall be set around the construction site. Watering shall be carried out regularly to reduce the construction dust. In order to avoid influencing the normal worship activities in Putian Ancestral Hall, Villagers shall be consulted in advance and the construction can be continued only after the Villagers' agreement. 5. The ecological restoration work in the affected areas shall be immediately carried out after the completion of construction activities. 6. During operation of the wastewater treatment plant, the major odor pollutants shall be added with top cover or cover plate. The dehydration machine room shall be sealed. The exhaust gas collected be handled by the deodorizing device and discharged after reaching the standard.

3. Measures for discovering cultural relics during the construction process

Purpose

This procedure is intended to illustrate good practices of the cultural relics discovered during the construction process.

Risk:

This procedure will explain what measures shall be taken if a historic site of great importance is discovered during the construction process. These measures include staff training and the mechanism of notifying and reporting to the environmental management department of the construction contractors to determine the appropriate management measures that shall be taken. In addition to the cultural relics that have been identified, it can be told from the current information that there is little possibility to find valuable resources in this project.

Actions plan

No.	Action description	Supervision
Construction personnel training		
1	Training for the construction workers shall include a description of possible cultural relic sites or objects. Construction workers shall know the reporting and informing procedure for a suspected object of cultural relic and the importance of the procedures.	Check the registration form of the training participation
If the location is confirmed, the steps shall be taken.		
2	The following steps will be taken to protect the unidentified cultural relic sites/objects: i. Once the worker identifies a(n) site/object that may be cultural relics, he/she shall immediately notify the construction supervisor on site. ii. The construction supervisor will determine whether the site/object is a cultural relic or not; iii. If it is considered as cultural relics, the operation within 50m of the site shall be immediately stopped by the construction supervisor; iv. Construction supervisor shall immediately notify the environmental coordinator of the construction contractor; v. The environment coordinator of the construction contractor will follow up the notification procedure and notify the environmental supervisor of the environmental management department who will notify the project manager of the construction supervision company and the County PMO. The reporting form shall be completed within 24 hours after determining the location.	--
3	Temporary fence or similar facility within a 50m radius of the site shall be set.	Check
Instruction by the design units		
4	No operation shall be continued within a 50m radius of the area until it is directed by the environmental management unit.	Visual inspection during the check
5	The environmental coordinator of the construction contractor shall be notified 15 days before the commencement of construction at the identified target or location. The instructions on the protection measures of the site or the requirements by the environmental management unit of the construction supervision company shall be recorded by the environmental supervisor of the construction contractor and the site inspector and shall be conveyed to the construction personnel.	Check

Schedule 1 Possible Cultural Relic Site Notification Form

Part 1 - Location Confirmation	
Location confirmation date	
Description of place and location (including the name of the construction area)	
Location type	
General description of the location	
Person who confirms the location	
Time and date of stopping the operation	
Time and date of notifying the construction contractor - the environment coordinator	
Time and date of notifying the environmental management unit - the environment supervisor	
Person who fills in the form	
Person who verifies the form	
Part 2: Instruction and suggestions of the environmental management unit	
Date of receiving the request of the environmental management unit	
Summary of the environmental management unit requirements (refer to the attachment if necessary)	
Workers' training date	
Verification of the implementation of requirements by the environmental management unit (signature & date)	

Complementation

Transportation arrangement	**Yongxin County Yangqiao Village, Tutian Village, Huangmen Village, Rongxi Village, Guangming Village, Shuanghu Village, Longan Village, United Village, Qingtang Village and other Villages along the road;** **Yueping dike Village, Guankou Village, Chexi Village, Kui Village, Ancient Jinshan Village, Liuxi Village and other Villages along the road;** **Xiushui County, Dragon Village, Bailuo Foothill, Zou Family Harbor and other Villages along the road.** **Duanshang Primary School, Maoao town, Xiushui County, Laixi Primary School, Nanfeng County; Liang Xian Primary School, Liuchuan District; Dongxing technician training Primary School, Dongxiang Village; Boyu middle school, Dongxiang District; Guangchang Primary School, Dongxinag District;**	**Will the construction plan be submitted to the traffic police department and the transportation department before the construction work has affected the public transport?** **Are you ready to make public transit plans and get a permit?** **Do you put a sign on the site before construction?** **Do you specify the project content, construction time, and inform the contact person and the complaint hotline pager?** **Have you used news media, weibo, WeChat and other platforms to inform you in advance?** **Is the project divided into sections and completed the excavation and backfill as soon as possible?** **In the near Village construction, is it possible to set up special construction roads, reduce the use of rural roads, and avoid the destruction of roads by large instruments and vehi-**

	Star Experimental Kindergarden, Leping City and other schools along the raod;	**cles?** **Shall the traffic police conduct the traffic control and dispatch during peak hours of school, and set up temporary traffic signals and other indicators?**
Closure of small-sized water plants	**Xiushui County sewage water plant, Nanfeng County water plant, Nanfeng County mountain bay water plant, Dongxiang County Huimin water plant, Daongxiang County Xiaohuang town water plant, Dongxiang County Gangshangjichengwang water plant- a total of 36 employees**	**Will the water plant be shut down, employee resettlement and other information be informed to every employee of the relevant water plant at least 3 months in advance?** **Does the original private business owner make a one-stop provisional compensation for other employment based on labor laws and employees' wishes?** **With labor ability and skills, will employees stay after the restructuring of the new water plant, by means of business skills and on-the-job training and then signing labor contract, making Runquan water plants to hire contracted staff for the laid-off reemployment?** **Will the project implementation, operational maintenance and other low-skill positions provided during the post-operation period for reemployment in the new water plant?**