

**World Bank-financed Jiangxi Poyang Lake
Basin Town Water Environment
Management Project**

Social Assessment Report

Hohai University

Jiangxi PMO

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Abbreviations

EIA	-	Environmental Impact Assessment
EPB	-	Environmental Protection Bureau
FGD	-	Focus Group Discussion
HD	-	House Demolition
IA	-	Implementing Agency
LA	-	Land Acquisition
LEF	-	Land-expropriated Farmer
MLS	-	Minimum Living Security
MSW	-	Municipal Solid Waste
PMO	-	Project Management Office
PRC	-	People's Republic of China
SA	-	Social Assessment
WWTP	-	Wastewater Treatment Plant

Units

Currency unit	=	Yuan (RMB)
1.00 yuan	=	\$0.15
1 hectare	=	15 mu

Chapter 1 Introduction

1.1 Overview of the Project

Poyang Lake is the largest freshwater lake of China, with a basin area of 162,200 km², in which 157,000 km² is in Jiangxi Province, accounting for 94.1% of Jiangxi's basin area. The environmental management and development of Poyang Lake has always been a state and provincial priority. In March 2008, the Jiangxi Provincial Government made the strategic decision of establishing the Poyang Lake Ecological Economic Zone, and prepared the Development Plan of the Poyang Lake Ecological Economic Zone. The Poyang Lake Ecological Economic Zone includes Nanchang, Jingdezhen and Yingtan Municipalities, and some counties (cities, districts) in Jiujiang, Xinyu, Fuzhou, Yichun, Shangrao and Ji'an Municipalities. The Poyang Lake Ecological Economic Zone is located south of the middle and lower Yangtze River, and has close connections with the Wuhan Metropolitan Region, Wanjiang City Belt and Yangtze River Delta, so its ecological environment is significant for the lower Yangtze River.

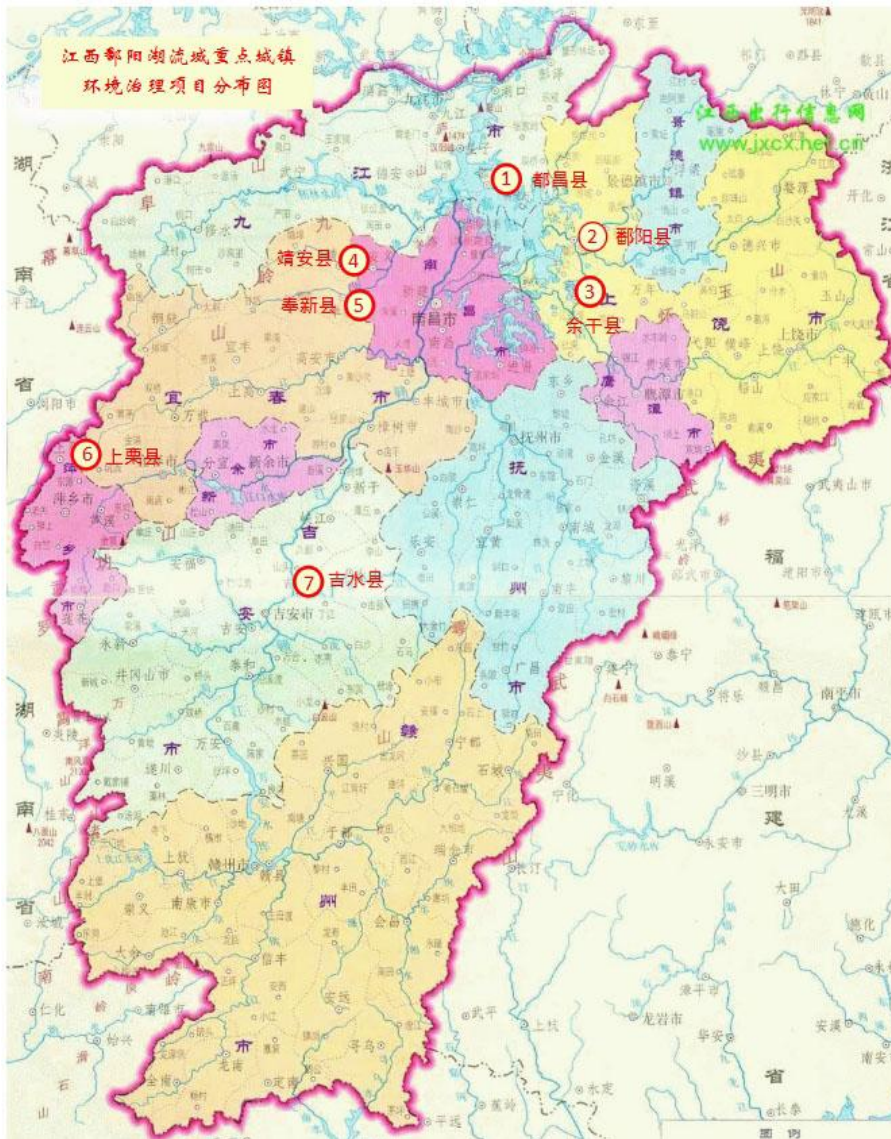


Figure 1-1 Location map of the project

In this context, the Jiangxi Provincial Government proposed that equal attention should be paid

to economic development and environmental protection, and established the ecological strategy of "green development". In order to promote the sound and rapid development of key towns in the Poyang Lake basin, the Jiangxi Provincial Government applied for a loan with the Bank to implement the Project, which was approved by the state in October 2014, and has been chosen as a candidate project for Bank financing during fiscal years 2015-2017. The Project aims to control pollution and improve ecology in the Poyang Lake basin, thereby realizing balanced ecological and economic development, and harmony between mankind and nature, and protecting local social development practically.

1.2 Components

The Project consists of 3 components and involves 7 counties, all covered by the SA. In addition, integrated management mechanisms have been established under the Project to suit local needs, conditions and development plans.

The Project consists of 3 components mainly: 1) wastewater management component, including the construction of urban pollutant collection facilities mainly; 2) MSW disposal component, including the construction of MSW collection, storage, transfer and treatment facilities; and 3) lake management component, including domestic wastewater treatment and water pollution control for key rural areas through a combination of artificial wetland development, water purification and biological aquaculture.

The Project serves Shangli County, Pingxiang City; Poyang and Yugan Counties, Shangrao City; Jing'an and Fengxin Counties, Yichun City; Jishui County, Ji'an City, and Duchang County, Jiujiang City directly, and the whole Poyang Lake basin indirectly. The service ranges of the components are as follows: 1) The sewer line and wastewater treatment subcomponents in the wastewater management component cover south and old urban areas of Jishui County; north new and south old areas of Fengxin County; south and north areas of Jing'an County; Duchang County town and some villages around Duchang Town; 36 villages in the Zhuhu Lake area of Poyang County; 2) The MSW collection and transfer, collection site and transfer station subcomponents in the MSW disposal component cover Changping Xiang, Futian Town, Penggao Town, Dongyuan Xiang, Chishan Town and Yangqi Xiang, Shangli County; Beishan, Dashu and Wangdun Xiangs around the Duchang county town; Pipa Lake area in Yugan County; north and south areas, south industrial zone, and 3 townships (non-urban) of Jing'an County; and 3) The ecological rehabilitation, lake embankment and ecological wetland subcomponents in the lake management component cover 36 villages in the Zhuhu Lake area of Poyang County, Pipa Lake area in Yugan County, Duchang County town and some villages around Duchang Town.

1.3 Development targets and intermediate outputs

The Project aims to improve the environment of the Poyang Lake basin and nearby areas, and promote the balanced economic, social and ecological development of the project area. Table 1-2 shows the development targets and intermediate outputs of the Project.

Table 1-1 Summary of the Components

Component	Scope	Service area	Gross investment
Wastewater management	<p>①Jishui County: construction of drainpipes of 42.6km, including sewer lines of 27.4km (DN200-DN600) and rain pipes of 15.2km (d600-d2000), and 3 wastewater lifting pump stations, and reconstruction of the existing Xiaojiangkou wastewater pump station from 10,000 m³/d to 15,000 m³/d</p> <p>②Fengxin County: construction of intercepting and sewer lines of 24.42km (DN300-DN1500) and rain pipes of 19.29km (DN300-DN1800); road rehabilitation works involving 14 roads with a total length of 7,946m; and canal dredging in the north area</p> <p>③Jing'an County: construction of sewer lines of 28.063km (DN300-400); rain pipes of 17.268km (d600-d1200); and mixed pipes of 1269m</p> <p>④Duchang County: construction of sewer lines of 14.7km (DN400-DN600). and rain pipes of 8.7km (DN800-DN1500); reconstruction of the Zoujiazui drainage culvert measuring 5.0x2.5m, about 15m long; and construction the sewer line of Chengxi Avenue and the intercepting line west of Zoujiazui Lake, 1,925m long;</p> <p>⑤Poyang County: construction of sewer lines of 101.22km (DN300-DN400), and 35 integrated underground treatment facilities</p>	South and old urban areas of Jishui County; north new and south old areas of Fengxin County; south and north areas of Jing'an County; Duchang County town and some villages around Duchang Town; 36 villages in the Zhuhu Lake area of Poyang County;	Jishui County: 162.6189 million yuan, Fengxin County: 160.4452 million yuan, Jing'an County: 109.3043 million yuan, Duchang County: 92.3861 million yuan, Poyang County: 130.8934 million yuan, totaling 647.7376 million yuan
MSW disposal	<p>①Construction of 6 MSW collection and transfer systems in Shangli County, and 3 systems in Changdu County, and improvement of the MSW collection and transfer around Pipa Lake in Yugan County, and that of the county town in Jing'an County</p> <p>②Facilities and equipment: Shangli County: 61,005 50L small indoor trash bins, 928 120L street trash bins, 325 cleaner toolsets, 238 MSW collection trucks, 87 MSW collection stations, 87 cleaning vehicles, 6 14t MSW transfer vehicles, 6 vacuum trucks, 6 street cleaning vehicles; Yugan County: 361 120L trash bins, 2 MSW transfer vehicles, 2 sprinkling trucks, and 2 transfer stations; Duchang County: 25,632 20L small indoor trash bins, 542 cleaner toolsets, 2,118 240L trash bins, 1,059 120L trash bins, 15 MSW collection vehicles, 3 14t MSW transfer vehicles, 3 vacuum trucks; Jing'an County: 1,290 240L trash bins, 470 120L trash bins, 10 MSW collection vehicles, 2 transfer stations, and 2 14t MSW transfer vehicles</p> <p>③Intelligent systems: one intelligent MSW collection, transfer and treatment system, and 6 sanitation display platforms in Shangli County; one intelligent MSW collection, transfer and treatment system in Duchang County, and one intelligent MSW collection, transfer and treatment system in Jing'an County</p>	Changping Xiang, Futian Town, Penggao Town, Dongyuan Xiang, Chishan Town and Yangqi Xiang, Shangli County; Beishan, Dashu and Wangdun Xiangs around the Duchang county town; Pipa Lake area in Yugan County; north and south areas, south industrial zone, and 3 townships (non-urban) of Jing'an County	Shangli County: 182.2034 million yuan, Duchang County: 26.5884 million yuan, Yugan County: 3.6498 million yuan, Jing'an County: 18.6838 million yuan, totaling 231.1254 million yuan
Lake management	<p>①Duchang County: laying of intercepting mains along Zoujiazui Lake northward to Furongshan Industrial Zone to intercept wastewater and dredge part of the lake; permeable pavement for sidewalks and green spaces along Furongshan Avenue, and public parking spaces in the industrial zone; Poyang County: pipeline collection and integrated treatment of domestic wastewater for villages that drain wastewater directly to Zhuhu Lake; management of rural non-point pollution using artificial wetlands and ecological intercepting ditches; Yugan County: laying a DN300-DN400 sewer line along Pipa Lake, and constructing an integrated precast wastewater pump station (Q=3500m³/d) to drain seriously silted drainage canals, and collect floating and bank MSW for land filling; bottom mud dredging for depths of 0.7-2m and a total amount of 30,000m³</p> <p>②Development of natural waterfront landscape and leisure spaces</p>	36 villages in the Zhuhu Lake area of Poyang County, Pipa Lake area in Yugan County, Duchang County town and some villages around Duchang Town	Poyang County: 135.3375 million yuan, Yugan County: 209.2108 million yuan, Duchang County: 73.2979, totaling 425.72 million yuan

Table 1-2 Development targets and intermediate outputs of the Project

No.	Indicator	Baseline value	Cumulative targets					Current targets					Target value
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5	
I	Development target indicators												
1	Direct beneficiary population	0	0	103400	302420	445850	654600	0	103400	199020	143430	208750	654599
2	Female beneficiary population	0	0	49975	145781	214527	314233	0	49975	95806	68746	99706	314231
3	Reduced total nitrogen emission (T/year)	0	0	51.789	215.812	384.263	561.37	0	51.789	164.023	168.451	177.107	561.37
4	Reduced total phosphorus emission (T/year)	0	0	3.67	16.205	29.402	44.024	0	3.67	12.535	13.197	14.622	44.154
5	Reduced pollutant COD discharged to Poyang Lake per annum (T/year)	0	0	223.38	988.722	1801.62	2709.72	0	223.38	765.342	812.898	908.1	2709.59
6	Reduced MSW inflow into the Poyang Lake basin per annum (T/year)	0	0	26036.5	57053.3	63523.75	73439.5	0	26036.5	31016.8	6470.45	9915.75	73439.5
7	Project counties included in the water quality report	Some online data of provincial EP department	0	0	1	3	7	0	0	1	2	4	7
II	Intermediate outcome indicators												
1	Number of meetings under the river administrator system	/	8	16	24	32	40	8	8	8	8	8	40
2	Number of counties where a sound water quality monitoring system has been established	Unsound monitoring systems in 7 counties	0	0	5	7	7	0	0	5	2	0	7
3	Number of households connected to the sewer network	0	0	835	9377	24419	43549	0	835	8542	15042	19130	43549
4	Amount of BOD pollutants treated by the treatment plant under the Project (t/year)		0	51.602	276.77	537.124	867.84	0	51.602	225.168	260.354	330.716	867.84
5	Number Zhuhu water quality monitoring sites	0	0	0	0	0	8	0	0	0	0	8	8
6	MSW collection rate (%)	51.0	2.3	10.8	21.6	26.2	30.6	2.3	8.5	10.8	4.6	4.4	81.6
7	Staff trained	0	186	406	658	894	1124	186	220	252	236	231	1124

1.4 SA tasks

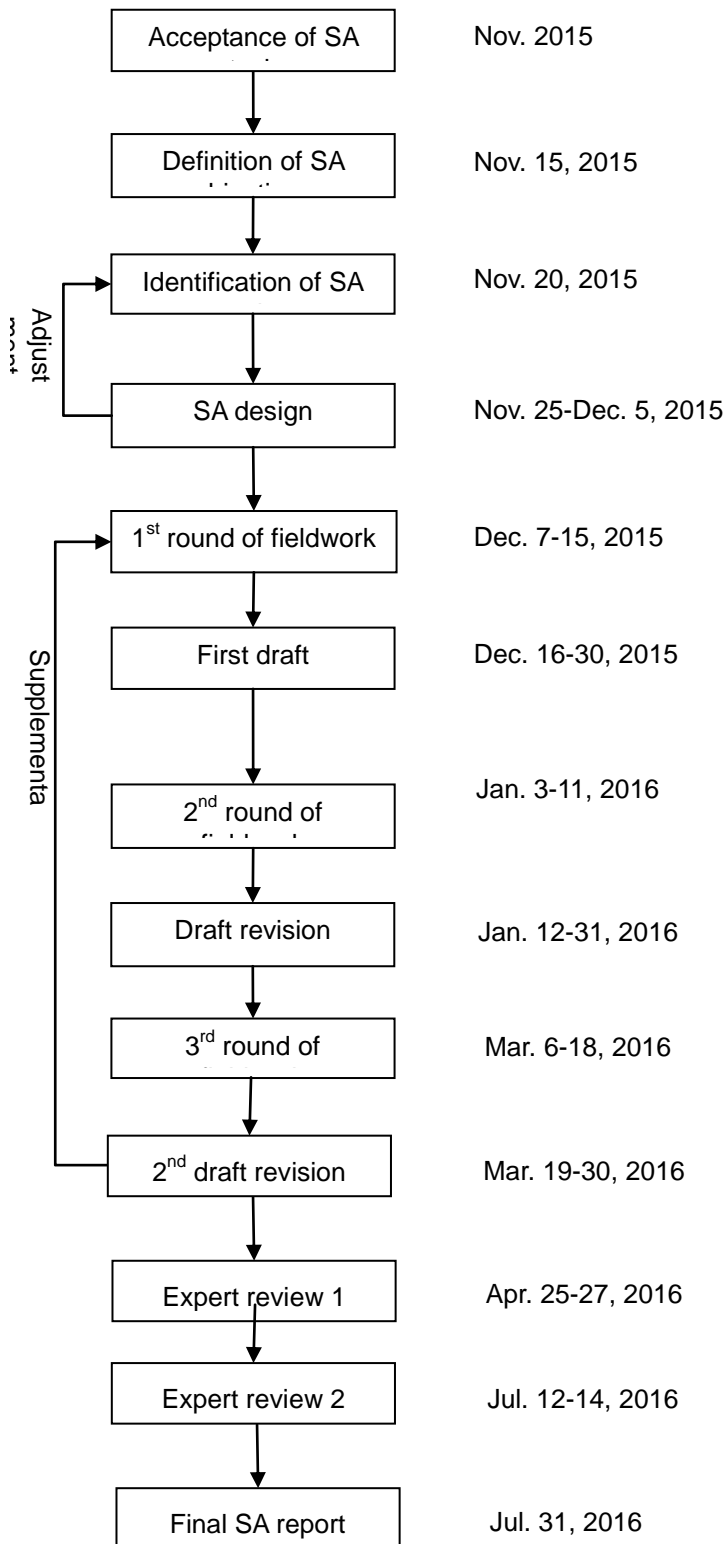


Figure 1-2 Technical roadmap of SA

The objective of the SA is to identify, analyze and evaluate the Project's positive and negative impacts, and potential social risks through adequate consultation with all stakeholders, promote their participation in project activities, optimize the project design and implementation plan, and provide valuable data for subsequent project implementation. See Figure 1-2.

1.5 SA methods

From December 7, 2015 to March 18, 2016, the task force collected data in the project area using the 6 methods of literature study, field visit, key informant interview, FGD, door-to-door interview and questionnaire survey, including the socioeconomic profile of the project area, the Project's positive and negative impacts, ability and willingness to pay of local residents (including the poor, ethnic minorities, women, etc.), their needs and suggestions, etc. See Table 1-2.

1) Literature study

Collecting literatures on local economic and social conditions, population, customs, ethnic minorities, women's development, environmental sanitation, wastewater discharge, collection and treatment, industrial water use, wastewater treatment charges, supporting policies for vulnerable groups, etc.

2) Field visit

Getting a better understanding of local wastewater discharge, MSW transfer station site selection, sewer line routing, local residents' living conditions, etc.

3) Key informant interview

7 key informant interviews were conducted with heads of agencies concerned on local environmental protection, water use, wastewater discharge and treatment, MSW disposal, and environmental sanitation facilities, health impacts of water and MSW pollution, etc.; 5 key informant interviews were conducted with heads of agencies concerned on industrial water use and wastewater treatment; 7 key informant interviews were conducted with heads of agencies concerned, and township and village officials on the Project's positive and negative impacts, conditions of local ethnic minorities, poor population and women, and relevant policies.

4) FGD

16 FGDs were held in the project area in order to better learn the ability and willingness to pay of local residents (including the poor, ethnic minorities, women, etc.), and their needs and suggestions, including ordinary FGDs, FGDs with women and FGDs with vulnerable groups, with 112 participants in total, including 50 women, accounting for 44.64%.

5) Door-to-door interview

Door-to-door interviews were conducted with 196 persons in 127 AHs, including 87 women, accounting for 44.39%.

These interviews are designed to: ① learn their attitudes to and needs for the Project, and potential impacts of LA and HD on their production and livelihoods; and ② learn their willingness to pay wastewater treatment and MSW disposal charges.

6) Questionnaire survey

In the questionnaire survey, purposive sampling was applied to cover APs of different age groups, occupations, income levels, genders and ethnic groups in order to fully reflect different groups' needs, attitudes, and ability and willingness to pay.

The above 6 SA methods were applied together to have a comprehensive mastery of the practical situation of the project area and collect necessary information.

Table 1-3 Summary of SA methods

Method	Time	Subjects	Participants	Details
Literature study	Nov. – Dec. 2015	Literatures on the Project and the project area	6 from the task force	Collecting relevant literatures
FGD	Dec. 7, 2015 – Mar. 18, 2016	Township and village officials, heads of affected enterprises, and representatives of APs	16 FGDs, with 112 participants in total, including 50 women	Local environmental protection, wastewater discharge and treatment, MSW disposal, current situation of lakes and rivers, environmental sanitation

				facilities; attitudes to and needs for the Project, including women
Key informant interview	Dec. 7, 2015 – Mar. 18, 2016	Heads of WWTPs, EPBs, women's federations, poverty reduction offices, water resources bureaus, urban administration bureaus, etc.	6 from the task force, 2 from PMO, and 140 heads of agencies concerned	Industrial water use, wastewater discharge and treatment, MSW disposal, environmental sanitation facilities, health impacts of water pollution, needs for sewer networks and MSW transfer stations; project impacts, vulnerable groups and policies
Door-to-door or interview	Dec. 7, 2015 – Mar. 18, 2016	Local residents, including the poor and women	6 from the task force, 2 from PMO, involving 196 persons, including 87 women (44.39%)	Local livelihoods, potential project impacts on them, their needs for and suggestions on the Project
Field visit	Dec. 7, 2015 – Mar. 18, 2016	Current situation of MSW and wastewater collection and treatment	6 from the task force, 2 from PMO	Local social and living conditions, urban sewer lines, MSW collection sites, and rural ditches
Questionnaire survey	Dec. 7, 2015 – Mar. 18, 2016	Villages in the project area	6 from the task force, with 470 copies in total, including 404 valid copies	Basic information of local residents, ability and willingness to pay, environmental awareness, needs for and suggestions on the Project

1.6 Scope and key points

According to the terms of reference, the SA will describe the socioeconomic profile of the project area, describe key social factors for project implementation, identify primary stakeholders, and analyze their needs and impacts, analyze local women's development, project impacts on them and their needs for the Project, analyze local poverty and project impacts on the poor, analyze how to incorporate stakeholders into the Project effective, propose a public participation plan, identify the Project's potential positive and negative impacts, and social risks, and propose measures to avoid or reduce negative impacts.

Table 1-4 Scope of SA

County	Range of SA	Participants	Scope of evaluation
Duchang	Beishan, Wangdun and Dashu Xiangs	Organizations: county PMO, urban administration bureau, EPB, women's federation, poverty reduction office, water resources bureau, task force, provincial reform and development commission, township officials Local residents, including the poor, women, etc.	① Different agencies' and residents' comments on and attitudes to the Project; ② Impacts of the Project on different agencies and residents at different stages; ③ Needs of all stakeholders
Jing'an	South and north areas	Organizations: county PMO, urban administration bureau, EPB, women's federation, poverty reduction office, water resources bureau, task force, provincial reform and development commission; Local residents, including the poor, women, etc.	① Different agencies' and residents' comments on and attitudes to the Project; ② Needs of different agencies and residents; ③ Impacts of the Project on different agencies and residents at different stages
Jishui	South and old urban areas	Organizations: county PMO, urban administration bureau, EPB, women's federation, poverty reduction office, water resources bureau, task force, provincial reform and development commission; Local residents, including the poor, women, etc.	① Comments on and attitudes to the Project; ② Willingness of residents to connect to the sewer network; ③ Impacts of the Project on different stakeholders
Shangli	Changping Xiang, Futian Town, Penggao Town, Dongyuan Xiang, Chishan Town, Yangqi Xiang	Organizations: county PMO, urban administration bureau, EPB, women's federation, poverty reduction office, water resources bureau, task force, provincial reform and development commission, township and village officials; Local residents, including the poor, women, etc.	① Comments on and attitudes to the Project; ② Residents' project awareness and support; ③ Issues during and after project implementation, and potential positive and negative impacts

Fengxin	South and north areas	Organizations: provincial and county PMOs, urban administration bureau, WWTP, water resources bureau, EPB, etc. Local residents, including the poor, women, etc. Task force	① Agencies' attitudes to and needs for the Project; ② Residents' project awareness and willingness to connect to the sewer network; ③ Impacts of the Project on different agencies and residents
Poyang	Zhuhu, Tuanlin and Baishazhou Xiangs, Sishilijie, Gaojialing and Shuanggang Towns	Organizations: provincial and county PMOs, township and village officials, EPB, land and resources bureau, wetland park committee, etc. Local residents, including the poor, women, etc.	① Comments on and attitudes to the Project; ② Residents' project awareness and support; ③ Impacts of the Project on different agencies and residents
Yugan	Residents around Pipa Lake	Organizations: provincial and county PMOs, water resources bureau, EPB, women's federation, poverty reduction office, etc. Local residents, including the poor, women, etc.	① Comments on and attitudes to the Project; ② Residents' project awareness and support; ③ Impacts of the Project on different agencies and residents

The key points of the SA are: 1) evaluating reasons why different agencies and residents participate in the Project actively; 2) identifying the Project's positive and negative impacts on different stakeholders, and proposing suggestions on improving project efficiency; 3) learning willingness to connect to the sewer network, and pay wastewater treatment and MSW disposal charges; 4) establishing a public participation mechanism, and proposing ways to ensure the active participation of vulnerable groups; 5) proposing a village-level publicity strategy; and 6) establishing basic social indicators for project M&E.



Figure 1-3 Interview with residents

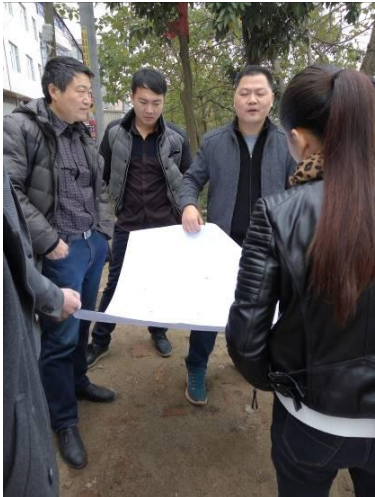


Figure 1-4 Discussion between PMO and design institute



Figure 1-5 Field visit of lake embankment



Figure 1-6 Urban pipeline route

Chapter 2 Background of the Project

2.1 Ecological and environmental issues of the project counties

The 7 project counties are key counties in the Poyang Lake basin, but have been affected seriously by environmental issues despite of economic development in recent years, as detailed below:

Table 2-1 Ecological and environmental issues of the project counties

County	Description of environmental issues
Shangli	<p>①Unsound environmental sanitation system; ②inadequate environmental sanitation facilities; ③no standard urban MSW transfer station; ④inadequate treatment capacity of the 4 existing landfills, resulting in foul odor and water pollution</p> <div style="display: flex; justify-content: space-around;">   </div> <p style="text-align: center;">Figure 2-1 Waterway polluted by MSW Figure 2-2 MSW pile</p>
Yugan	<p>Bad water quality of Pipa Lake: ①direct discharge of domestic wastewater without treatment; ②a water surface of 160,000 m² used for aquaculture; ③MSW dumping on embankments, resulting in foul odor and water pollution</p> <div style="display: flex; justify-content: space-around;">    </div> <p style="text-align: center;">Figure 2-3 Interior of MSW transfer station Figure 2-4 Direct discharge of domestic wastewater Figure 2-5 Water body polluted by garbage</p>
Poyang	<p>Serious pollution of Zhuhu Lake: ①serious industrial pollution; ②domestic wastewater discharged by 61,500 people in the lakefront area and 80,000 people from nearby areas; ③MSW dumping along Zhuhu Lake; ④rural non-point source pollution from cultivation, aquaculture and stockbreeding</p> <div style="display: flex; justify-content: space-around;">    </div> <p style="text-align: center;">Figure 2-6 Clothes washing beside the lake Figure 2-7 Open MSW stacking Figure 2-8</p>

County	Description of environmental issues
Farmland near Zhuhu Lake	
Fengxin	<p>①Waste of water resources; ②most urban sewer lines being rainwater-wastewater confluence, resulting in poor sanitation; ③direct wastewater discharge into the Liaohe River in the south area; ④seriously silted open drain ditches in the old area; ⑤unplanned sewer network construction or reconstruction; ⑥unsound management and maintenance of urban drainage facilities</p> <div style="display: flex; justify-content: space-around;">    </div> <p style="text-align: center;">Figure 2-9 Urban open drain ditch Figure 2-10 Vegetable land irrigation and drain ditch Figure 2-11 Pollution of the Liaohe River</p>
Jishui	<p>①Rainwater-wastewater confluence in most parts of the urban area, and direct wastewater discharge into the Enjiang and Ganjiang Rivers without effective treatment; ②seriously damaged sewer lines in the old urban area, most wastewater discharged directly into the Ganjiang River; ③direct discharge of wastewater into the Ganjiang River in the southeast part of the old urban area, polluting the Ganjiang and Enjiang Rivers seriously</p> <div style="display: flex; justify-content: space-around;">   </div> <p style="text-align: center;">Figure 2-12 Drain ditch in a living area Figure 2-13 MSW dumping near the Ganjiang River</p>
Duchang	<p>①No rainwater-wastewater separation in Furongshan Industrial Zone, discharge into the Zoujiazui Lake; ②pollution of Zoujiazui Lake by domestic wastewater from nearby villages; ③uncontrolled MSW dumping or direct discharge into Poyang Lake; ④encroachment or destruction of the shoreline of Zoujiazui Lake by living and production activities of nearby villagers; ⑤spreading of rainwater runoff from Furongshan Industrial Zone, resulting in inland inundation in some parts of the urban area</p> <div style="display: flex; justify-content: space-around;">   </div> <p style="text-align: center;">Figure 2-14 MSW burning without separation Figure 2-15 Open MSW stacking</p>

County	Description of environmental issues
	  <p>Figure 2-16 MSW dumping near a lake Figure 2-17 Occupation of lakeside wetland by farmland</p>
Jing'an	<p>Due to the unsound urban sewer network and the excessive discharge of industrial wastewater, water quality is bad, and water environment issues are gradually becoming a bottleneck on the county town's development.</p>   <p>Figure 2-18 Open MSW collection site Figure 2-19 Lakeside economic activities</p>

It can be seen that the 7 project counties are affected by serious water pollution, low MSW disposal efficiency, lake ecology deterioration, etc. These issues are attributed to the backward urban environmental infrastructure, including sewer networks and MSW transfer stations, as well as bad public environmental behavior and inadequate public environmental awareness.

2.2 Environmental overview of the project counties

In order to address the environmental issues, engineering and non-engineering measures should be taken.

2.2.1 Existing environmental infrastructure

The existing environmental infrastructure in the project area is as follows:

Table 2-2 Existing environmental infrastructure of the project counties

County	Facility type	Environmental infrastructure	Issue
Shangli	MSW disposal	Environmental sanitation systems in the county town, Tongmu Town, Dongyuan Xiang and Penggao Town only, serving an area of 32km ² (all urban areas), with a daily disposal capacity of 70t, 12 MSW transfer vehicles and 4 simple landfills (having operating for over 10 years and close to full load)	Insufficient coverage of environmental sanitation systems, and inadequate MSW collection and treatment facilities
Yugan	Water supply	8 water supply facilities (one in the urban area), with supply pipelines of over 92km, meeting the Class II water quality standard	①Insufficient rainwater and wastewater separation; ②MSW separation, collection and transfer not friendly to the environment enough
	Drainage	No sound drainage system around Pipa Lake, and sewer lines not fully connected to the WWTP	
	Wastewater treatment	40,000 m ³ /d WWTP, located in Hongjiazui Xiang, close to the Huhui River, sewer lines of 15.2km	
	MSW disposal	Two MSW transfer stations, a landfill, backward rural MSW disposal facilities	
Poyang	Water supply	One drinking water source in the Zhuhu Lake basin, with the water intake located in Ligongnao Village, Baishazhou Xiang	Serious lack of drainage facilities, and unsound wastewater treatment facilities
	Drainage	No drainage facility around Zhuhu Lake	
	Wastewater treatment	WWTP (Phase 1) in Leijiazhou Village, Poyang Town, with a treatment capacity of 20,000 t/d	

Fengxin	Water supply	Complete water supply system in the urban area, one waterworks with a supply capacity of 50,000 t/d, supply pipelines of 68.02km, serving a population of over 100,000	Disorderly sewer network system of the county town, with mixed discharge modes, and inadequate coverage of sewer network
	Drainage	3 drainage systems (north, south and Huangxi New Area) in the county town, where rainwater and wastewater separation is mostly applied in new communities, while rainwater and wastewater confluence is mostly applied in the built-up area	
	Wastewater treatment	A WWTP, located in the northeastern county town, serving the county town and Huangxi New area, with a treatment capacity of 20,000 m ³ /d, to be expanded to 30,000 m ³ /d in the future; a proposed urban industrial WWTP, located northwest of Matian Industrial Park, with a near-term treatment capacity of 20,000 m ³ /d, to be expanded to 50,000 m ³ /d in the future	
Jishui	Water supply	3 water supply facilities in the urban center, which are the Qiliwan waterworks (backward, standby only), south waterworks (design capacity 40,000 m ³ /d) and west waterworks (design capacity 20,000 m ³ /d)	Sound water supply facilities, confluent drainage which is adverse to wastewater purification, resulting in the pollution of the Enjiang and Ganjiang Rivers
	Drainage	Mixed, confluent and separate drainage all existing in the south area	
	Wastewater treatment	A WWTP in the county town, with a treatment capacity of 10,000 m ³ /d, to be expanded to 20,000 m ³ /d soon; a WWTP for the west industrial zone, with a treatment capacity of 10,000 m ³ /d (30,000 m ³ /d in the future); a WWTP under construction for the food industry park, with a treatment capacity of 10,000 m ³ /d (30,000 m ³ /d in the future); west WWTP under preparation	
Duchang	Water supply	Existing Nanshan waterworks; 2 nd waterworks under construction in the west county town, with a design capacity of 30,000 m ³ /d	①Confluent drainage in the old urban area and Furongshan Industrial Zone, with leakage risk; ②inadequate coverage of the sewer network in the county town, resulting in water pollution; ③some extent of secondary pollution
	Drainage	Mostly confluent sewer lines; intercepting lines of 14.5km and confluent lines of 51.6km in the county town	
	Wastewater treatment	A WWTP, located beside Jishan Lake, meeting the National IB effluent standard; two wastewater lifting pump stations, with design capacities of 49 L/s and 129L/s respectively; intercepting lines of 14.5km in the county town	
	MSW disposal	An urban MSW disposal plant, to be put into operation in early 2016, with a design capacity of 300t/d of MSW and 600t/d of sludge; 13 MSW transfer stations in the county town, with a collection capacity of 150t/d	
Jing'an	Water supply	Two waterworks in the county town with a total supply capacity of 35,000 m ³ /d, both located on the south branch of the Liaohe River, urban water supply pipelines of 112.4km	①Drainage facility construction behind urban construction; ②insufficient MSW collection sites and vehicles
	Drainage	Mixed, confluent and separate drainage all existing in the urban area	
	Wastewater treatment	Intercepting mains and a WWTP	
	MSW disposal	A landfill, with a capacity of 730,000 m ³ ; over 600 trash bins, 6 MSW collection sites and one MSW collection station in the county town	

With the acceleration of urban construction and urban-rural integration, the amount of domestic MSW and wastewater is growing rapidly. However, the existing MSW disposal and wastewater treatment facilities in the 7 project counties are backward and inadequate.

2.2.2 Environmental behavior of local residents

In respect of MSW disposal, 71.5% of the respondents would dump MSW into public trash bins, 13.9% would dump MSW into outdoor ditches, 5.3% would dump MSW into lakes, 2.6% would bury MSW, 2.6% would dump MSW beside roads, 2% would burn MSW, 1.3% would MSW dumping into grasses or forests, and only 0.7% would otherwise dispose of MSW. It can be seen that most local residents would dump MSW into public trash bins, while other disposal modes are harmful to the ecological environment to some extent. Therefore, the environmental awareness of local residents must be improved, and existing public environmental sanitation facilities fully utilized.

Table 2-3 MSW disposal modes of local residents

MSW disposal mode	N	Valid percent
Dumping into public trash bins	108	71.5%

Dumping beside roads	4	2.6%
Dumping into outdoor ditches	21	13.9%
Dumping into grasses or forests	2	1.3%
Dumping into lakes	8	5.3%
Burning	3	2.0%
Burial	4	2.6%
Other	1	0.7%
Total	151	100%

Source: SA questionnaire survey

In respect of wastewater treatment, 64.9% of the respondents would pour domestic wastewater into sewers, 20.5% would pour into ditches, 4.6% would pouring into grasses or forests, 4.6% would pouring into lakes, 4% would pouring into toilets, 0.7% would pouring on roads, and 0.75% are not clear. It can be seen that more than half of local residents would pour domestic wastewater into sewers, but it cannot be ignored that behaviors of many local residents are non-normative.

Table 2-4 Domestic wastewater disposal modes of local residents

Domestic wastewater treatment mode	N	Valid percent
Pouring into sewers	98	64.9%
Pouring into toilets	6	4%
Pouring into grasses or forests	7	4.6%
Pouring into ditches	31	20.5%
Pouring into lakes	7	4.6%
Pouring on roads	1	0.7%
Not clear	1	0.7%
Total	151	100%

Source: SA questionnaire survey

Inappropriate domestic wastewater treatment modes will also have significant impacts on lake ecology, drinking water and the surrounding environment. For example, in Shuinanbei Village, Jishui County, many water hyacinths have grown in stinky ditches due to excessively high phosphorus content from wastewater poured by nearby residents.



Figure 2-20 Direct drain ditch in a household Figure 2-21 Water hyacinth in a drain ditch

In addition, there are some issues in nearby lakes. In the questionnaire survey, 21.9% of the residents choose “water hyacinth overgrowth”, 20.8% choose seasonal stinking, 16.7% choose silting, 11.5% choose water loss and soil erosion, 11.5% choose too much MSW in the lake, 7.3% choose overflow during heavy rains, 6.3% choose none, and 4.2% choose other.

Table 2-5 Issues in nearby lakes

Issue	N	Valid percent
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No problem	6	6.3%
Silting	16	16.7%
Water hyacinth overgrowth	21	21.9%
Seasonal stinking	20	20.8%
Overflow during heavy rains	7	7.3%
Water loss and soil erosion	11	11.5%
Too much MSW in the lake	11	11.5%
Other	4	4.2%
Total	96	100%

Source: SA questionnaire survey

📖 Villagers in Dawan Village, Yugan County (female, 32 years old)

The river has smelled bad seriously in the village for more than ten years, and there are more flies, mosquitoes and rats around the river. I'm very satisfied with the water environment condition in the residential zone, the previous river was relatively clean, but now becomes dirty, the domestic wastewater and MSW are thrown casually so that the river is affected. The more exaggerated thing is that there is no person willing to pour MSW in the village, this point must be improved!

📖 Resident in Xiaojiangkou in Jishui County (female, 70 years old)

I'm not satisfied about the wastewater collection and treatment conditions in my residence, I'm often worried about it, my son and daughter have moved out, they do not want to live here, but I cannot, I must guard the old house. My husband named our house as "Balcony" when it was built, but now it is not elegant at all.

📖 Zhou Dehua, Jinhua Village, Shuanggang Town, Poyang County (male, 65 years old)

The villagers' environmental awareness is very good, they don't litter MSW, I am satisfied with the village environment management, but in 2008, the village restored the sewer, but the project was not done very well, thereby the wastewater in the village cannot be treated since then, this aspect should be improved, and the domestic wastewater must be treated well.

📖 Mr. Du, Mingshan Village, Shangli County (male, 63 years old)

Currently, we are less satisfied, because we really need such a MSW transfer link there are two main MSW treatment methods in the world: Incineration and landfill. Like the MSW incineration in our village, but sometimes the MSW cannot be burned in time, so it is necessary to set up a MSW transfer.

Generally, most residents dispose of MSW and domestic wastewater scientifically, but still quite a number of people act improperly, thereby affecting the living environment negatively.

2.3 Necessity of the Project

It can be seen from Section 2.2 that the project counties are faced with great pressure in environmental protection, such as backward environmental infrastructure, insufficient coverage, and bad environmental behaviors of residents. Therefore, it is particularly urgent and necessary to implement the Project.

The Project aims to rehabilitate the environment of the Poyang Lake basin, and improve domestic wastewater collection and treatment systems, and MSW collection and disposal systems through a series of engineering and non-engineering measures.

Chapter 3 Socioeconomic Profile of the Project Area

3.1 Definition of the project area

The project area refers to the area directly and indirectly affected by the Project, where the directly affected area is the area affected directly by construction, and the indirectly affected area is the area served by the Project.

3.2 Directly affected area

The directly affected area includes urban and rural areas within the range of construction.

Table 3-1 Directly affected area

County	Urban areas	Rural areas
Shangli	/	Construction of 11 MSW transfer stations in 10 townships (Tongmu, Jinshan, Futian, Chishan, Penggao and Shangli Towns, Jiguanshan, Yangqi, Dongyuan and Changping Xiangs)
Yugan	Whole urban area, bordered by Dongshan Street, Huanhu East Road and Huanhu West Road	
Poyang	/	183 villages in (Tuanlin, Shuanggang, Baishazhou, Sishilijie, Gaojialing and Zhuhu) around Zhuhu Lake
Fengxin	North area, bordered by Tiangong Avenue, Huancheng West Road, the Liaohe River and Chongxian Avenue; south area, bordered by Lingying Road, Huancheng West Road, Huancheng South Road and the Liaohe River	/
Jishui	Old urban area, east of the Ganjiang River, south of the Enjiang River, and north of Qingyuan District of Ji'an City	/
Duchang	Built-up area of the county town	Beishan, Dashu and Wangdun Xiangs; villages and wetlands in the Zoujiazui Lake basin
Jing'an	North and south areas	/

According to the current design, the directly affected area includes both urban and rural areas. Specifically, the directly affected area of the wastewater management component is mostly in urban areas, that of the MSW disposal component mostly in rural areas, and that of the lake management component beside lakes.

3.3 Indirectly affected area

3.3.1 Jiangxi Province

Jiangxi Province, known as "Gan" for short, is located south of the lower Yangtze River, between north latitude 24°29'-30°04' and east longitude 113°34'-118°28', with a land area of 166,900 km². Jiangxi is composed of 11 prefecture-level municipalities, 11 county-level cities, 70 counties and 26 urban districts.

At the end of 2013, Jiangxi had a population of 45.22 million (51.45% males and 48.55% females), including a nonagricultural population of 12.15 million, accounting for 46.26%, and an agricultural population of 33.06 million, accounting for 55.74%, a natural population growth rate of 6.91‰, and a population density of 217/km².

In 2014, Jiangxi's GDP was 1.57146 trillion yuan, up 9.7% year on year, in which the added value of primary industries was 168.37 billion yuan, up 4.7%; that of secondary industries 824.79 billion yuan, up 10.9%; and that of tertiary industries 578.3 billion yuan, up 9.1%, and the ratio of primary, secondary and tertiary industries was adjusted from 11.0:53.5:35.5 in the previous year to 10.7:52.5:36.8. In 2014, Jiangxi's fiscal revenue was 268.1 billion yuan, up 13.7%.

In 2014, rural residents' per capita net income was 10,117 yuan and urban residents' per capita disposable income 24,309 yuan. At the end of 2014, rural residents' per capita house size was 50.2 m² and urban residents' per capita house size 41.0 m²; 7.839 million people were covered by urban basic endowment insurance, 5.792 million people covered by medical insurance for urban employees, all rural population covered by new-type rural cooperative medical insurance, and 2.71 million people covered by unemployment insurance.

3.3.2 Poyang Lake Ecological Economic Zone

Poyang Lake is located in Jiangxi and is the largest freshwater lake of China, 173km long longitudinally and 16.9km wide latitudinally on average, with a lakeshore length of 1,200km, a surface area of 3,583 km² (outlet level 21.71m), an average depth of 8.4m, a maximum depth of 25.1m and a volume of about 27.6 billion m³. It receives water from the Ganjiang, Fuhe, Xinjiang, Raohe and Xiuhe Rivers, and discharges water to the Yangtze River – the longest river of China. Poyang Lake has a basin area of 162,200 km², accounting for 97% of Jiangxi's basin area and 9% of the Yangtze River basin area.

The Poyang Lake Ecological Economic Zone is planned as an ecological economic demonstration zone and low-carbon economy pioneer zone of China in which ecological civilization is coordinated with social and economic development, and human and nature live together harmoniously. On December 12, 2009, the Poyang Lake Ecological Economic Zone became a national strategy formally, which was a far-reaching milestone in Jiangxi's development history.



Figure 3-1 Geographic location and functional zoning of Poyang Lake Ecological Economic Zone

The Poyang Lake Ecological Economic Zone is located in northern Jiangxi, and includes Nanchang, Jingdezhen and Yingtan Municipalities, and some counties (cities, districts) in Jiujiang, Xinyu, Fuzhou, Yichun, Shangrao and Ji'an Municipalities, with 38 counties (cities, districts) in total and a population of 20.066 million, accounting for 50% of Jiangxi's population. This zone performs a number of ecological functions, including flood and climate regulation, water impoundment, and pollutant decomposition. Poyang Lake is also an important regulating lake of the Yangtze River, and plays an important role in the water safety of the Poyang Lake basin, and the middle and lower

Yangtze River basin. The Poyang Lake Ecological Economic Zone is also the direct hinterland for the Yangtze River Delta, Pearl River Delta and West Coast Economic Zone, one of the growth poles being formed in central China, an important manufacturing base in central China, and one of the three main innovative regions of China, and has favorable conditions for developing the ecological economy, and promoting balanced ecological and economic development.

In the past 6 years, the GDP of the Poyang Lake Ecological Economic Zone grew from 394.8 billion yuan in 2008 to over 900 billion yuan in 2014, showing the great potential of its ecological economy. However, since enterprises in the zone are relatively small, resource-intensive and of low technology level, there is a sharp conflict between resources and the environment. In addition, local farmers rely excessively on lake resources and rural non-point pollution is serious, threatening the ecological environment of Poyang Lake.

3.3.3 Profile of project counties

3.3.3.1 Shangli County

Shangli County is located in western Jiangxi, between north latitude 27°38'-28°01' and east longitude 113°47'-114°04', governing 6 towns and 4 Xiangs (Shangli, Tongmu, Futian, Jinshan, Penggao and Chishan Towns; Changping, Dongyuan, Jiguanshan and Yangqi Xiangs), and 159 administrative villages. In 2014, the county's population was 516,700, GDP 16.095 billion yuan, and fiscal revenue 1.787 billion yuan.

The county abounds with water, forest and mineral resources, especially coal and porcelain clay. Firework is the traditional industry, while building material, high-tech material and equipment manufacturing have been developed greatly in recent years.

3.3.3.2 Yugan County

Yugan County is located in northeastern Jiangxi, between east longitude 116°13'-116°54' and north latitude 28°21'-29°3', governing 5 towns (including Ruihong, Huangjinbu, Shikou, Gubu, Wuni), and 11 Xiangs (Kangshan, Dongtang, Datang, Lusigang, Santang, Hongjiazui, Baimaqiao, Jiangbu, Fenggang, Daxi and yangbu). In 2014, the county's population was 1.061 million, GDP 11.27 billion yuan, and fiscal revenue 1.256 billion yuan.

The county abounds with water, mineral and animal resources, and characteristic farm and aquatic products, especially pepper, peanut, soybean, fish and pearl.

3.3.3.3 Poyang County

Poyang County is located in northeastern Jiangxi, on the east shore of Poyang Lake, between east longitude 116°23'45"-117°06'15", north latitude 28°46'26"-29°42'03", governing one sub-district (Raozhou), 14 towns (Poyang, Shuanggang, Xiejiatan, Shimenjie, Sishilijie, youdunjie, Tianfanjie, Jinpanling, Gaojialing, Fenggang, Guxiandu, Raofeng, Lefeng, Raobu), 15 Xiangs (Houjiagang, Lianhuashan, Xiangshuitan, Jiantianjie, Zhegang, Yaquehu, Yinbaohu, Youcheng, Zhuhu, Baishazhou, Tuanlin, Changzhou, Miaoqian, Lianhu and Lutian), with a land area of 4,215km². In 2014, the county's population was 1.57 million, GDP 15.9 billion yuan, and fiscal revenue 1.401 billion yuan.

The county abounds with mineral resources and aquatic products, and has extensive aquaculture water surface, farmland and woodland.

3.3.3.4 Fengxin County

Fengxin County is located in northwestern Jiangxi, between east longitude 114°45'-115°31' and north latitude 28°34'-28°52', governing 18 townships (Fengchuan, Shangfu, Ganzhou, Luoshi, Songbu, Chitian, Zaoxia, Chi'an, Huibu and Ganfang Towns, Zaoxi, Yangshan, Dongfeng and Ganken Xiangs, Baizhangshan Administration Committee, and Shixi Sub-district). In 2014, the county's population was 334,200, GDP 10.568 billion yuan, and fiscal revenue 1.819 billion yuan.

The county is known for high-quality rice, bamboo, kiwifruit and hydropower.

3.3.3.5 Jishui County

Jishui County is located in central Jiangxi, between east longitude 114°38'-115°36' and north latitude 26°52'-27°33', governing 15 towns (Wenfeng, Butian, Pangu, Fengjiang, Huangqiao, Jintan, Badu, Shuangcun, Laoqiao, Luotian, Baisha, Baishui, Dingjiang, Wujiang and Shuinan), and 3 Xiangs (Shangxian, Shuitian and Guanshan). In 2014, the county's population was 525,800, GDP 11.15 billion yuan, and fiscal revenue 1.24 billion yuan.

The county abounds with mineral, water and animal resources, and 9 out of the 12 categories of mineral resources are found here, including ferrous and non-ferrous metals, noble metals, rare earth, fuels, etc.

3.3.3.6 Duchang County

Duchang County is located in northern Jiangxi, between east longitude 116°2'24'-116°36' and north latitude 28°50'-29°38', governing 12 towns (Duchang, Zhouxi, Sanchagang, Zhongguan, Dasha, Wanhu, Nanfeng, Tutang, Dagang, Cailing, Xubu and Zuoli) and 12 Xiangs (Hehe, Yangfeng, Xiyuan, Xiangxi, Shishan, Mingshan, Chunqiao, Sushan, Duobao, Wangdun, Beishan and Dashu). In 2014, the county's population was 810,500, GDP 8.509 billion yuan, and fiscal revenue 1.246 billion yuan.

The county has extensive woodland, water surface, and rich mineral, plant and animal resources.

3.3.3.7 Jing'an County

Jing'an County is located in northwestern Jiangxi, between north latitude 28°46'-29°06' and east longitude 114°55'-115°31', governing 5 towns (Shuangxi, Renshou, Baofeng, Gaohu and Zaodu), 6 Xiangs (Xiangtian, Shuikou, Zhongyuan, Luowan, Leigongjian and Sanzhualun), two industrial parks, 11 forest farms and one horticultural farm. In 2014, the county's population was 153,500, GDP 3.394 billion yuan, and fiscal revenue 719 million yuan.

The county is one of the major bases of non-ferrous metals, rare metals and rare earth, and abounds with tourism resources.

Table 3-2 Summary of basic economic indicators of the project counties (2014)

No.	Indicator	Unit	Shangli	Yugan	Poyang	Fengxin	Jishui	Duchang	Jing'an
1	Land area	km ²	720.91	2330.77	4214.68	1642	2531.73	2669.53	1377.49
2	Gross population	0,000	51.67	106.1	158.4	33.42	52.58	81.05	15.15
2.1	Nonagricultural population	0,000	6.37	15.8	24.22	8.1	13.67	12.71	4.13
2.2	Males	0,000	26.81	56.92	82.79	17.05	29.75	42.67	7.88
3	GDP	00m yuan	160.95	112.7	159	105.68	111.5	85.09	33.94
3.1	Primary industries	00m yuan	15.04	34.4	39.75	16.17	15.09	17.4	5.88
3.2	Secondary industries	00m yuan	100.25	41.2	67.26	59.75	59.44	41.04	17.28
3.3	Industrial added value	00m yuan	90.95	32.1	50	54.97	42.2	31.40	14.02
3.4	Tertiary industries	00m yuan	45.66	37.1	51.99	29.76	36.97	26.65	10.78
4	Social investment in fixed assets	00m yuan	172.46	107.8	152	109.52	112	73.8	36.28
5	Social retail sales of consumer goods	00m yuan	54.19	41.57	58.3	29.85	32.6	37.77	5.84
6	Export volume	\$0,000	23300	8827	11001	10677	38000	23933	10640
7	Foreign capital actually used	\$0,000	4560	4180	5171	6479	6500	8030	1930
8	Fiscal revenue	00m yuan	17.87	12.56	14.01	18.19	12.4	12.46	7.19
9	Urban residents' per capita disposable income	yuan	24331	17571	17833	23325	21280	18984	21436
10	Rural residents' per capita net income	yuan	12486	6826	6207	11782	11690	5461	9898

Source: statistical yearbooks of the project counties (2014)

Chapter 4 Analysis of Social Impacts

4.1 Impacts of the wastewater management component

4.1.1 Necessity analysis

With the accelerated urbanization of the Poyang Lake basin, water pollution is increasingly serious. Monitoring data shows that the surface water quality of the Poyang Lake basin is generally good, but some segments are seriously polluted, especially urban segments, and urban domestic wastewater has become the primary pollution source. However, urban sewer networks are backward and of small coverage, affecting the efficiency and effectiveness of wastewater treatment. In the project area, the centralized treatment rate of urban domestic wastewater is only 39.14%, and most domestic wastewater is discharged directly into rivers without treatment.

In rural areas in the Poyang Lake basin, the most prominent water environment issue is rural non-point pollution caused by rural domestic wastewater and MSW, but there is no special collection and transfer system, so that much domestic wastewater and MSW is discharged directly onto the ground or into water bodies.

The sewer line and wastewater treatment subcomponents in the wastewater management component cover south and old urban areas of Jishui County; north new and south old areas of Fengxin County; south and north areas of Jing'an County; Duchang County town and some villages around Duchang Town; 36 villages in the Zhuhu Lake area of Poyang County. This component will expand the coverage of sewer networks, and improve wastewater treatment capacity and water management capacity, thereby improving water quality and the living environment, and realizing the sustainable development of towns.

4.1.2 Impact on urban areas

1. Positive impacts

1) Improving local wastewater collection systems and improving wastewater treatment capacity

Currently, some parts of Pipa Lake in Yugan County are seriously polluted; most parts of the Jishui county town are not covered by sewer lines, so that wastewater is discharged into the Enjiang and Ganjiang Rivers directly; Furongshan Industrial Zone in Duchang County is not subject to rainwater and wastewater separation, where industrial wastewater is discharged into Zoujiazui Lake directly; most existing sewer lines in Jing'an County are confluent, where some wastewater is discharged into water bodies directly; Fengxin County is also faced with the same problem.

According to the questionnaire survey, most local residents expect to improve wastewater treatment facilities and wastewater treatment capacity.

 **Mr. Guo, Family Dorm, Agricultural Bureau, Fengxin County (male, 54 years old)**

Now, the domestic wastewater is discharged out directly, the nearby river pollution is very serious, there are less fishes than the original, and the wastewater in some factories is directly discharged into the ditch without treatment, now the wastewater in the ditch becomes dirty and smells bad, and it is not pumped in time, it has had an impact on health.

2) Improving local water quality and reducing waterborne diseases

Many local residents think that river pollution caused by untreated domestic wastewater and industrial wastewater will lead to diseases, which may affect people's work and lives seriously, and result in additional medical expenses. This component will improve local water quality and local

residents' physical health, and reduce the incidence of waterborne diseases.

📖 Resident Ms. Zhang, Hu District, Pipa Lake, Yugan County (female, 65 years old)

You can see how muddy the river is, it smells very bad in hot day, if people drink this water, they will certainly get sick.



Figure 4-1 Collection of residents' comments on sewer network Figure 4-2 Inviting a business owner to fill up the questionnaire

3) Improving the local environment and living standard

The wastewater management and lake management components will reduce pollutant discharge, put an end to orderly wastewater discharge, and improve local water quality, the local environment and people's living standard.

📖 Resident Miss Shi, Yugan County (female, 45 years old)

There are sewers in our home, but they are not connected together, the dirty water has been infiltrated to the underground or to the ditch, the nearby ecological park also drainage wastewater, we often drink the tap water, I do not know about the groundwater? You must find a way quickly to deal with the wastewater, when the environment becomes better, and all of us will be very happy.

2. Negative impacts

1) Damaging the living environment during construction

Noise produced by machinery and vehicles during construction will affect nearby residents, construction operations will increase suspended particles in the air, and construction waste and MSW produced by construction workers may also damage the living environment.

However, these impacts can be reduced or avoided as long as the construction agency takes appropriate measures.

📖 Resident Ms. Shen in Duchang County (female, 56 years old)

During the project construction, there will certainly be some dust fallen into the family, and sometimes the noise will be generated by construction that will affect the rest of us. Large machinery may be operated on site, the children cannot run around, it will certainly be dangerous. So, we hope that the construction party can out efforts to avoid the above problems.

2) Affecting store operations during construction

During sewer network construction, pavement excavation or disturbance will affect operations of nearby stores and daily traffic. Storeowners and nearby residents can accept this and will find alternative ways to overcome this but expect the period of disturbance be shortened where possible.

Mr. Zhang in Fengxin County (male, 43 years old)

After excavation of the sewer network, our business will be affected, because the goods cannot be transported, therefore, I hope to shorten the construction period of the project as much as possible, so the impact on our business will be smaller.

3) Impacts of LA, HD and temporary land occupation

Sewer network construction will involve LA, HD and temporary land occupation, thereby affecting local residents' livelihoods seriously. However, most residents recognize the importance of the Project, and expect proper resettlement through timely consultation.

Resident Mr. Lin in Fengxin County (male, 34 years old)

The excavation of sewer network will inevitably cause land acquisition and temporary land occupation problems, we certainly hope that it should not affect our normal livelihood, but taking into account the long-term interests of the project, we believe that our support is most important, but I also hope the government can consider our benefits.



Figure 4-3 Interview of a roadside household affected by temporary land occupation

4.1.3 Impact on rural areas

1. Positive impacts

1) Creating rural jobs and optimizing rural industry structure

Most local residents and their relatives are willing to get employed or reemployed by participating in the Project to increase income.

The Project will generate unskilled jobs, such as material handling and cooking, at the

construction stage, and such jobs as maintenance, landscaping and cleaning at the operation stage. The Project will promote local investment and tourism development through environmental improvement, thereby generating more jobs for local residents, especially women and the poor.

The PMO will make these jobs first available to the poor, ethnic minorities, women and other vulnerable groups in the project area.

📖 Resident Mr. Zhang in Poyang County (male, 43 years old)

Through the construction of the wastewater sewer network, the domestic wastewater in our village can be collected, so that it will become more neat, but it will also bring more tourists to visit our village, there are also a lot farmhouses, they can also be developed well, thus, the economic development will be driven better

2) Changing backward behaviors and improving the rural environment

In the past, Chinese rural areas were characterized by dirtiness and disorder. In rural areas in the project area, domestic wastewater is mostly poured directly without treatment, resulting in serious pond pollution. After project completion, rural domestic wastewater will be collected centrally through drain ditches, thereby improving the rural environment.

📖 Villager in Dawan Village, Yugan County (female, 43 years old)

I'm very satisfied with the water environment condition in the residential zone, the previous river was relatively clean, but now becomes dirty, the domestic wastewater and MSW are thrown casually so that the river is affected.



Figure 4-4 Collection of residents' comments on water environment management

3) Providing leisure spaces

This component will create an integrated lakefront landscape, and provide good leisure spaces to nearby residents.

📖 Mr. Yang, Yangjiagang Village, Duchang County (male, 65 years old)

Previously, I often took a walk along the lake, but now the water can not be seen, and the water hyacinth is grown everywhere. It was occurred the year before last, now it is grown everywhere, and the lake is full of it.

2. Negative impacts

1) Risk of sewer network connection

Sewer network connection determines the extent to which the project objectives are realized and is an important measure of the project outputs. If most households in the project area are unwilling to get connected, the Project will become pointless.

It is learned that it is costly and difficult to connect house sewers to the sewer network directly. Local residents generally expect that wastewater outlets be reserved for villages for conflux into the sewer network. In addition, this can be implemented as part of new countryside building.

📖 Resident Mrs. Wang, Duchang County (female, 45 years old)

There are no wastewater sewer networks connected here, because the cost will be increased after the connection of the sewer network, we are reluctant. However, if the wastewater disposal charge is not increased after the implementation of the project, we want to improve the current laying of the sewer network.

2) Safety risks of construction

During construction, vehicles, slag, spoil and wastewater may threaten the personal safety of local residents, especially old people, children and pregnant women. The owner will attach great importance to this, give safety education and take appropriate measures to mitigate such risks.

📖 Resident Miss Cai, Wenshui Avenue, Jishui County (female, 56 years old)

The construction can certainly affect me, I usually pick up my grandson in the school across Wenfeng Avenue, I don't now about the construction project, but the whole road has been excavate, if it is occurred beside our home, the traffic will become very inconvenient near our home. I do not know if I can ride my bicycle at that time.

4.1.4 Measures and suggestions

1) Policy support for LEFs: A compensation mechanism should be established for losses suffered by LEFs during project implementation, and they should be resettled rationally.

2) Social support for vulnerable groups: Poor households should be exempted wholly or partly from MSW disposal and wastewater treatment charges, and entitled to policy support. Women should be assisted in receiving training under the Project and applying for small-amount loans to promote their development.

3) Environmental risks during construction mainly include land occupation, noise and dust pollution, traffic congestion and construction waste. See the EIA Report submitted by the EIA agency for the specific environmental risk mitigation measures.

4) According to the Community Participation Handbook, the following tasks should be completed mainly to improve the project implementation management system:

a) Preparation stage: Determine the project implementation program and how to handle key issues through free, prior and informed community consultation.

b) Implementation stage: Improve the project supervision and management system, procurement system, financial and material management system, etc.

c) Operation and management stage: A sound safety management organization should be established across the township and county levels to ensure effective project operation.



Figure 4-5 Organizational FGD in Fengxin County

4.2 Impacts of the MSW disposal component

4.2.1 Necessity analysis

Since existing MSW collection and transfer systems of the project area are unsound, MSW is mostly dumped into nearby lakes, resulting in serious environmental pollution.

MSW pollution is more significant in rural areas due to the lack of MSW disposal facilities, leading to extensive land occupation and threatening public health.

MSW collection and transfer systems will be established with a rational layout, a proper scale and a rational management pattern to address this as the connecting point between the source and the disposal terminal. This will be significant for improving MSW collection and transfer efficiency, reducing MSW disposal costs, and controlling rural pollution. The MSW collection and transfer, collection site and transfer station subcomponents in the MSW disposal component cover Changping Xiang, Futian Town, Penggao Town, Dongyuan Xiang, Chishan Town and Yangqi Xiang, Shangli County; Beishan, Dashu and Wangdun Xiangs around the Duchang county town; Pipa Lake area in Yugan County; north and south areas, south industrial zone, and 3 townships (non-urban) of Jing'an County.

4.2.2 Impact on urban areas

1. Positive impacts

1) Improving the living environment

Currently, MSW pollution has become a serious issue in urban areas. The MSW disposal component will strengthen MSW disposal, and improve the urban image and urban residents' living quality.

2) Ensuring urban safety

Since MSW has high organic content and gives rise to biogas when stored together, there will be an explosion risk when an open flame is encountered. This component will ensure that MSW is transferred and disposed of timely to avoid this risk.

3) Improving urban environmental sanitation level and reducing operation management costs
In the project area, most MSW transfer trucks are unenclosed, resulting in serious MSW and leachate leakage. The establishment of MSW transfer stations will realize centralized and enclosed MSW collection and transfer, and reduce operation management costs.

 **Director Yu, Environmental Sanitation Office, Jing'an County, December, 9, 2015**

Now, all of the environmental works have been market-oriented, which have been subcontracted in different regions- "Shenzhen Baozhengtonag Company" that is only responsible for cleaning and pouring into the MSW collection station, but not the remaining operation. MSW transfer within the scope of the whole country should be borne by the environmental sanitation office (county +town).

4) Attracting investment to promote urban economic and social development

The improved environment will attract more external capital, thereby promoting local economic development and generating more jobs for local residents. This will in turn increase local fiscal and tax revenue, which will be used to further promote economic and social development.

5) Promoting tourism development

This component will promote the development of tourism, and related service industries and commerce.

2. Negative impacts

1) Increasing the financial burden of poor households

After project completion, MSW disposal charges will be higher and unaffordable for some poor residents. Therefore, the government should develop a preferential policy for vulnerable groups in order not to reduce their living standard.

2) Construction impacts

Flying dust, noise, waste and sludge produced during construction will affect the local environment and residents' daily lives temporarily.

Transport during construction will also lead to traffic congestion, noise and air pollution. Therefore, the construction agency should strengthen management, and keep construction sites and roads clean through sprinkling and cleaning.

3) Impact of sites of MSW transfer stations on nearby residents

The site selection of MSW transfer stations needs the support of nearby residents, and may encounter great obstacles in practice. MSW transfer stations should be located remotely where possible in order not to affect regular lives of nearby residents.

4) Secondary pollution arising from MSW transfer

Measures should be taken to ensure that trucks that transfer MSW from MSW transfer stations to landfills are fully enclosed to avoid secondary pollution.

4.2.3 Impact on rural areas

1. Positive impacts

1) Improving the rural living environment

The MSW disposal component will improve the rural living environment and rural residents' living quality, promote rural economic development greatly, reduce MSW pollution, and eliminate related diseases.

📖 Shangli villager Liu (male, 38 years old)

The village production brigade rents a MSW vehicle to collect the MSW (several times each week) There are fixed MSW stack points in the village, the villagers will put MAW in it, then the MSW truck will take it away, the villagers will also the MSW on the door, and put them into the MSW truck when it comes. But the MSW vehicle only comes to our village once a week, the time interval is too long, some villagers have too many MSW and they cannot wait but directly throw them into the ditch. Additionally, there are too many people building house now, the street is filled with building materials and construction MSW, they obstruct the road, the vehicle cannot come in and the residents are unwilling to run too far, so they just throw them out.

📖 Mrs. Chan, Yu villagers Yugan Town (female, 50 years old)

The village has no trash bin, MSW and other MSW collection facilities, there are a lot of thrown domestic MSW and construction MSW next to the river in the village, the water pollution is very serious and the river is blocked. In summer, the odor is unpleasant, and there are a lot of flies; The crops irrigated by the wastewater are grown poorly; For the disordered wastewater discharge and MSW throwing in the river, the irrigation station has taken publicity measures and made a billboard, but there was no effect.



Figure 4-6 Collection of residents' comments on MSW disposal

2) Enhancing local residents' environmental awareness

Local residents' participation in project activities will improve their public participation capacity and environmental awareness, which will be significant for the sustainable development of the project area.

3) Offering job opportunities

Temporary jobs will be generated at the construction stage to increase local residents' income.

4) Improving farm product quality

This component will improve farm product quality and economic efficiency by improving the environment and reducing pollution.

2. Negative impacts

1) MSW disposal and transfer

MSW and leachate leakage may occur during MSW transfer, which may result in secondary pollution.

2) LA and HD

LA and HD may result in income losses, and a series of prolonged, potential social, cultural and

mental impacts. If the APs are not resettled properly and compensation is not paid timely, conflicts may occur. Particular attention should be paid to the resettlement and livelihood restoration of LEFs.

 **Huangyi, director of Poyang Lake Management Office, Duchang County, December 10, 2010**

Now, the planned MSW transfer station in (Wangdun Township, Duchang County) is near the original MSW landfill (across the street) and occupies 4 mu of wasteland (weeds and some trees are grown here), and it belongs to the villagers near Yanggang; The land acquisition has not been yet completed and the land needs the consent of the villagers.

3) The collection of MSW disposal charges will affect the poor more severely than ordinary residents. It is advised to enact preferential policies to alleviate their financial burden.

4.2.4 Measures and suggestions

1) Relief for rural poor households: Rural poor households should be partly or wholly exempted from MSW disposal charges, and included in social security with priority.

2) Social gender action plan: Women should be fully involved in project activities, especially training on MSW separation. Financial support should be granted to poor women to promote their development.

3) Support for LEFs: LEFs under the Project should receive full compensation for their losses according to the applicable state regulations.

4) Environmental risk mitigation measures: The MSW disposal component involves such environmental risks as noise, air and dust pollution during construction, and MSW leakage and odor produced during transfer. See the EIA Report submitted by the EIA agency for the specific environmental risk mitigation measures.

5) According to the Community Participation Handbook, the following tasks should be completed mainly to improve the project implementation management system:

a) Preparation stage: Determine the project implementation program and how to handle key issues through free, prior and informed community consultation.

b) Implementation stage: Improve the project supervision and management system, procurement system, financial and material management system, community participation system, etc.

c) Operation and management stage: Community operation management procedures, and MSW transfer station operation management and maintenance systems will be established and improved.



4.3 Impacts of the lake management component

4.3.1 Necessity analysis

The ecological rehabilitation, lake embankment and ecological wetland subcomponents in the lake management component cover 36 villages in the Zhuhu Lake area of Poyang County, Pipa Lake area in Yugan County, Duchang County town and some villages around Duchang Town. This component will improve the lake functions and the water environment, reduce lake pollutants, and enrich aquatic biodiversity.

4.3.2 Impact on urban areas

1. Positive impacts

1) Improving public health in the directly affected area

Currently, the project area is affected by MSW pollution due to inadequate collection and transfer, not only affecting local residents' lives, but also increasing the incidence of relevant diseases. This component will create a favorable living environment for local residents, reduce secondary pollution, and improve local public health.

2) Beautifying the lake landscape

This component will create an integrated lakefront landscape, and provide good leisure spaces to nearby residents.

3) Promoting local urban and rural integration

This component will not only improve the local water environment and public health, but also break the urban-rural dualistic structure and promote urban-rural integration by attracting population, technology, capital and resources.

2. Negative impacts

1) Affecting environmental sustainability

If sound MSW collection and transfer systems are not available, and local residents do not have environmental awareness after project completion, this component will be unsustainable.

2) Subsequent management and maintenance, and public participation

Since the environmental awareness of local residents is still insufficient, a sound supervision and management mechanism will be critical to project operation.

3) Secondary pollution arising from lake dredging

Lake dredging will inevitably produce sludge that may affect the nearby vegetation adversely. Sludge must be removed timely to reduce the risk of secondary pollution.

4.3.3 Impact on rural areas

1. Positive impacts

1) Improving the living environment and public health

Wetland construction will control non-point pollution, ensure ecological safety, and improve public health.

2) Promoting local employment directly and indirectly

This component will generate some skilled and unskilled jobs at the construction and operation stages, such as catering and retail at the construction stage, and maintenance, landscaping and cleaning at the operation stage, 40% of which will be first made available to vulnerable groups.

3) Improving rural residents' environmental awareness

This component will improve local environmental management and rural residents' environmental awareness.

2. Negative impacts

1) Secondary pollution and health impact due to sludge stacking

If sludge produced by lake dredging is not transferred and disposed of properly, secondary pollution will occur, thereby affecting public health and the surrounding environment.

2) Subsequent maintenance

A supervision mechanism should be established for subsequent management and maintenance because rural residents' environmental awareness is yet to be improved.

3) LA

Ecological rehabilitation may involve LA, thereby affecting some households' income and livelihoods to some extent. Livelihood restoration and compensation should be conducted properly.

4.3.4 Measures and suggestions

1) Social gender and project implementation: Women should be fully involved in project activities, and financial support should be granted to poor women to promote their development.

2) Support for the poor: Poor households should be exempted wholly or partly from self-fundraising, and financial support should be granted to them to promote their development.

3) Support for LEFs: LEFs under the Project should receive full compensation for their losses according to the applicable state regulations.

4) The lake management component involves such environmental risks as noise, air and dust pollution during construction, traffic congestion, etc. See the EIA Report submitted by the EIA agency for the specific environmental risk mitigation measures.

5) According to the Community Participation Handbook, the following tasks should be completed mainly to improve the project implementation management system:

a) Preparation stage: Determine the project implementation program and how to handle key issues through free, prior and informed community consultation.

b) Implementation stage: Improve the project supervision and management system, procurement system, financial and material management system, community participation system, etc.

c) Operation and management stage: Sound project management will reduce risks in subsequent operation and maintenance, and ensure project benefits.

Chapter 5 Stakeholder Analysis

5.1 Project area and beneficiary population

5.1.1 Overview of stakeholders

The Project serves Shangli County, Pingxiang City; Poyang and Yugan Counties, Shangrao City; Jing'an and Fengxin Counties, Yichun City; Jishui County, Ji'an City, and Duchang County, Jiujiang City directly, and the whole Poyang Lake basin indirectly, with a beneficiary population of 1.1735 million, in which urban population accounts for 40.15% and rural population for 59.85%.

5.1.2 Stakeholders of components

5.1.2.1 Wastewater management component

This component covers south and old urban areas of Jishui County; north new and south old areas of Fengxin County; south and north areas of Jing'an County; Duchang County town and some villages around Duchang Town; 36 villages in the Zhuhu Lake area of Poyang County. This component aims to improve the water environment of the Poyang Lake basin and local residents' living standard. It will generate some jobs during construction, which will be first made available to local women and the poor.

5.1.2.2 MSW disposal component

This component covers Changping Xiang, Futian Town, Penggao Town, Dongyuan Xiang, Chishan Town and Yangqi Xiang, Shangli County; Beishan, Dashu and Wangdun Xiangs around the Duchang county town; Pipa Lake area in Yugan County; north and south areas, south industrial zone, and 3 townships (non-urban) of Jing'an County. This component aims to improve urban and rural MSW collection and transfer systems, the living environment, and urbanization level, and promote sustainable development. It will generate some jobs during construction, which will be first made available to local women and the poor.

5.1.2.3 Lake management component

This component covers 36 villages in the Zhuhu Lake area of Poyang County, Pipa Lake area in Yugan County, Duchang County town and some villages around Duchang Town. This component aims to rehabilitate lake systems, improve the water environment, and promote local economic and social development. It will generate some jobs during construction, which will be first made available to local women and the poor.

Table 5-1 Estimated Direct Beneficiary Areas and Beneficiary Populations of the Components

Component	Directly affected area	Beneficiary population (0,000)	Remarks
Wastewater management	South and old urban areas of Jishui County; north new and south old areas of Fengxin County; south and north areas of Jing'an County; Duchang County town and some villages around Duchang Town; 36 villages in the Zhuhu Lake area of Poyang County	30.15	The beneficiary population is an estimate of gross population minus affected population.
MSW disposal	Changping Xiang, Futian Town, Penggao Town, Dongyuan Xiang, Chishan Town and Yangqi Xiang, Shangli County; Beishan, Dashu and Wangdun Xiangs around the Duchang county town; Pipa Lake area in Yugan County; north and south areas, south industrial zone, and 3 townships (non-urban) of Jing'an County	64.75	The beneficiary population is an estimate of gross population minus affected population, and overlaps with the population affected by the lake management component.
Lake management	36 villages in the Zhuhu Lake area of Poyang County, Pipa Lake area in Yugan County, Duchang County town and some villages around Duchang Town	22.45	The beneficiary population is an estimate of gross population minus affected population.

5.2 Stakeholder identification

5.2.1 Definition

Stakeholders mean individuals or groups who can affect or be affected by the objectives of the Project. The Bank proposes the concept of “stakeholder” in its aid policies and has divided stakeholders. Stakeholder refers to “those people affecting the Bank’s actions and policies and affected by the Bank” (World Bank 1994:1). Based on the understanding that poverty relief is a goal of the Bank, the stakeholders involved in a development project are divided into: 1) Primary stakeholders: referring to the target peoples of the development project, especially those poor and marginal peoples that lack information and power, and are excluded from the course of development; 2) Borrowing stakeholders: referring to a borrowing country’s government; 3) Secondary stakeholders: mainly including NGOs, commercial institutions, and experts with some kind of expertise and facing the primary stakeholders directly.

Through preliminary identification, the Project’s stakeholders include IAs (owners), government agencies concerned, local residents, enterprises, etc., as detailed in Table 5-2.

Table 5-2 Stakeholder identification

Component	Primary stakeholders	Secondary stakeholders
Wastewater management	Urban: local residents, the poor, nearby residents and stores, residents affected by temporary land occupation Rural: local residents, the poor, residents affected by temporary land occupation	Urban: provincial and county PMOs, water resources bureau, EPB, urban administration bureau, civil affairs bureau, land and resources bureau, urban construction bureau, EPB, Shanghai Urban Construction Design & Research Institute, Jiangxi Colliery Design Institute Rural: village committees
MSW disposal	Urban: local residents, the poor, residents near MSW transfer stations, cleaners, LEFs, stores and residents near MSW transfer stations Rural: local residents, the poor, cleaners, LEFs	Urban: provincial and county PMOs, EPB, urban construction bureau, land and resources bureau, civil affairs bureau, EPB, Shanghai Urban Construction Design & Research Institute, Jiangxi Colliery Design Institute Rural: village committees
Lake management	Urban: local residents, the poor, residents affected by temporary land occupation and LA Rural: local residents, the poor, residents affected by temporary land occupation and LA	Urban: provincial and county PMOs, water resources bureau, EPB, urban administration bureau, civil affairs bureau, land and resources bureau, urban construction bureau, EPB, Shanghai Urban Construction Design & Research Institute, Jiangxi Colliery Design Institute Rural: village committees

The Project’s primary stakeholders have been identified as local ordinary residents, residents affected by temporary land occupation and LA, residents near MSW transfer stations, and residents and stores near sewer lines, especially women, old people and the poor, while secondary stakeholders include 1) PMOs, owners and design agencies; and 2) government agencies concerned.

5.2.2 Primary stakeholders

Local residents are a primary stakeholder and a target group of the project, especially poor and marginal residents who are short of information and power, and are excluded from the development process. In the Project, lake pollution and water quality, MSW collection, water supply, and the living environment are closely associated with every local resident. Specifically, the MSW disposal component involves the NIMBY effect, the wastewater management component involves temporary land occupation and LA, and the lake management component involves lake dredging. Therefore,

needs and attitudes of local residents cannot be ignored. In addition, particular attention should be paid to needs and attitudes of women, old people, the poor and other vulnerable groups (no minority population is involved).

5.2.3 Secondary stakeholders

Secondary stakeholders mainly include NGOs, commercial institutions, and experts with some kind of expertise and facing the primary stakeholders directly. In the Project, secondary stakeholders include PMOs, owners, design agencies and government agencies concerned.

The county PMOs are responsible for organizational coordination in project implementation, the IAs include county development and reform commissions, finance bureaus, EPBs, water resources bureaus, civil affairs bureaus, urban administration bureaus, land and resources bureaus, construction bureaus, etc. The design agencies are Jiangxi Colliery Design Institute and Shanghai Urban Construction Design & Research Institute. The Project cannot be implemented successfully without their support.

Other stakeholders include: 1) municipal and county governments; 2) IAs; 3) county government agencies; 4) township and rural organizations; and 6) market players related to the Project.

Table 5-3 Stakeholder analysis

Stakeholder	Way of being affected by the Project	Importance for the Project
Urban and rural poor residents	Benefiting	Medium
LEFs	Suffering	Strong
Ordinary residents	Benefiting	Strong
Residents affected by temporary land occupation	Suffering	Strong
LEFs	Suffering	Strong
Residents near MSW transfer stations	Suffering	Strong
Residents near sewer lines	Suffering	Strong
Stores near sewer lines	Suffering	Strong
Municipal and county governments	Benefiting	Strong
IAs	Benefiting	Strong
County government agencies	Benefiting	Medium
Township and rural organizations	Benefiting	Strong

5.3 Stakeholder analysis

5.3.1 Stakeholder survey

In order to identify primary and secondary stakeholders, and their needs, the task force conducted a series of public participation activities with different stakeholders at the preparation stage, especially vulnerable groups in order to involve them in the Project, share information with them, learn their expectations and needs, promote the public awareness of the Project, and improve the project design.

1) Organizational FGD

The task force held organizational FGDs to learn the following:

- ① Attitude to the Project (necessary or not, supporting or not)
- ② Needs for the Project (funds, land, manpower, etc.)
- ③ Role in the Project
- ④ Comments on the Project (pros and cons)
- ⑤ Expectations for and suggestions on the Project
- ⑥ Risk analysis

In addition, the task force has collected relevant literatures, including urban development plans,

statistical yearbooks, compensation policies, training programs, women’s development plans, poverty reduction plans, etc. In subsequent preparation, the task force will also consult with all stakeholders on the social action plan, gender development plan and public participation plan.



Figure 5-1 Organizational FGD in Duchang County

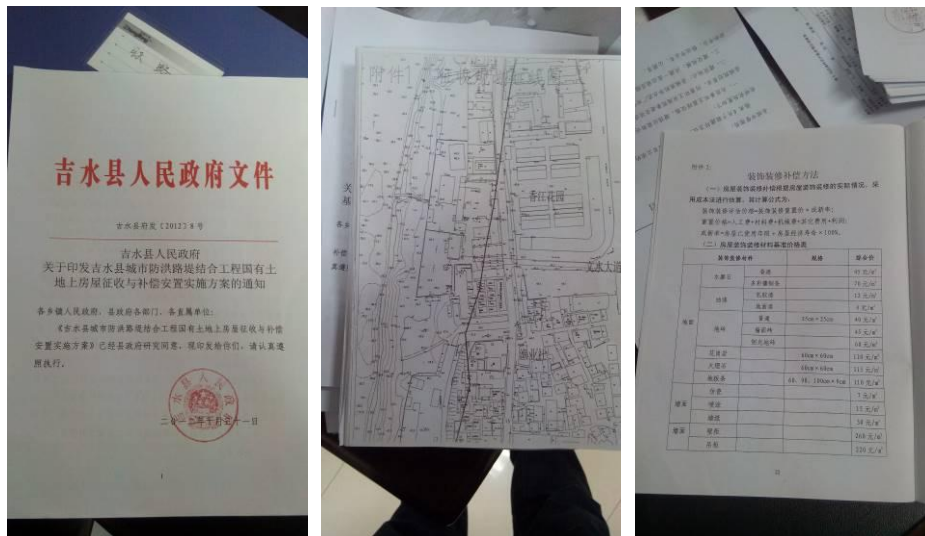


Figure 5-2 Government documents

2) Owner FGD

The task force held FGDs with the owners to discuss the following:

- ① Background of the Project
- ② Issues in the Project
- ③ Publicity on the Project
- ④ Difficulties in project implementation
- ⑤ How to evade risks during project implementation and thereafter
- ⑥ Subsequent management
- ⑦ Considerations on site selection
- ⑧ Project information collection

3) Interview and questionnaire survey

The task force conducted a socioeconomic questionnaire survey on local residents to learn their family background, current modes of MSW disposal and wastewater treatment, existing environmental sanitation facilities, awareness of the components, impacts of the Project on them, and suggestions on the Project.

Table 5-4 Investigation of primary stakeholders

Subjects	Survey method	Targets
Residents near MSW disposal sites (including the poor, women, LEFs)	FGD Questionnaire Interview Sequencing Drawing	①Project information sharing ②Project demand analysis ③Comments on project design and practice ④Project impact analysis ⑤Project issue analysis ⑥Proposing expectations and suggestions
Residents affected by the wastewater management component (including the poor, women, LEFs, stores, residents affected by temporary land occupation)	FGD Interview Sequencing	①Project information sharing ②Project demand analysis ③Comments on project design and practice ④Project impact analysis ⑤Project issue analysis ⑥Proposing expectations and suggestions ⑦Analyzing willingness and ability to pay
Residents affected by the lake management component (including the poor, women, LEFs, residents affected by temporary land occupation)	FGD Questionnaire Interview Sequencing	①Project information sharing ②Project demand analysis ③Comments on project design and practice ④Project impact analysis ⑤Project issue analysis ⑥Proposing expectations and suggestions

5.3.2 Demand analysis of stakeholders

Analyzing different stakeholders' needs for the Project will help evade potential social risks and promote successful project implementation. The task force has learned their needs by means of questionnaire survey, interview, FGD and observation.

1) Ordinary residents

Wastewater management component: ① improving wastewater collection and treatment services to improve the living environment; ② imposing wastewater treatment charges within their affordability, and developing preferential policies for poor households; ③ conducting proper resettlement and livelihood restoration for LA and HD; ④ strengthening publicity and training on environmental protection; ⑤ shortening the construction period where possible, and minimizing secondary noise, dust and sludge pollution during construction; ⑥ offering jobs to local residents during construction where possible.

📖 Villager in Jinghua Village, Shuanggang Town, Poyang County, December 10, 2010

Currently, the pollution in Zhuhu is not serious, because there is no surrounding factory, mostly wastewater is poured into the river, the toilet wastewater is usually used for irrigation, but will not be fallen into it, but in rainy day, the water will flow into the lake. Because the sewer in our village had not been completed in 2008, so there is no way to deal with the wastewater, so I hope the construction of this project can improve the service of wastewater collection system, it must be built, the quality must be guaranteed, we also believe that it is our own thing, if the environment is very good, our life will be comfortable.

📖 Villager in Dawan Village, Yugan County December 7, 2015

I'm not very satisfied about the current environmental treatment in the village, I feel that there is no MSW in the river and channel at present, the river smells good now, but it smells bad previously, because the people in Zhejiang contracted the fish ponds here to cultivate pearls, the ponds became very smelly because of them, in the first half of this year, the township expelled them, because the river has been become smelly for more than ten years. There are more flies, mosquitoes and rats around the river. I'm very satisfied with the water environment condition in the residential zone, the previous river was relatively clean, but now becomes dirty, the domestic wastewater and MSW is thrown casually so that the river is affected. Our advice about the project construction is that the duration should become as short as possible, we have only one road here, the construction project will result in travel inconvenience for the residents, additionally, if there is no temporary land occupation, the compensation should be made in accordance with the national compensation standard.

📖 Resident in Dianpu, Chian Village, Fengxin County, December 5, 2015

I don't know how to construct the project, the project is good, but I do not know it, so I hope that the appropriate publicity should be made for the project office. The original intention for improving the environment situation is good, it does not pollute the river. But the laying of wastewater sewer network may damage the road, the road will be repaired again, it should not affect the normal life and affect our business. Engineering construction can influence the traffic safety, road will be re-repaired, but it will affect the business, the construction will also affect the traffic safety, so I hope the construction period should be as short as possible and not affect people's normal work and life.

MSW disposal component: ①improving environmental sanitation; ②locating MSW transfer stations away from residential areas; ③transferring MSW timely from MSW transfer stations; ④conducting project planning in consultation with local residents; ⑤disposing of MSW scientifically and safely; ⑥training residents on MSW separation and environmental protection; ⑦providing environmental sanitation facilities, and establishing sound MSW transfer and treatment systems to minimize secondary noise, dust and sludge pollution during construction; ⑧ using enclosed vehicles for MSW transfer to prevent MSW pollution and odor diffusion; ⑨providing adequate MSW disposal infrastructure and increasing the remuneration of cleaners; ⑩ensuring that MSW disposal charges are affordable, and developing a preferential policy for the poor.

📖 Head Rong, Dongyuan Village, Dongyuan Township, Shangli County, December 3, 2015

I'm a township cadre, I know this project, but the people do not know at present, the investigation about the rural MSW cleaning has been done, and every household has been mobilized, but they also don't know the specific building of the MSW transfer station very well. In 2013, the project was also declared, 147 MSW ponds has been built now, our county has set with an MSW incinerator, the incineration will cause pollution, but the pollution after burning is just 10% of the original, just like our explanation to the people. These are the processes of building rural economy, if the project is used, it can avoid 10% of the pollution generated by the burning, its role is the same with the role played by the MSW transfer station inside the city, the building of the MSW incineration plant or landfill in the city is not our responsibility, because the MSW has been transported out.

📖 Cadre in Beishan Township, Duchang County, December 8, 2015

In order to cover all environmental treatment works, we must do some trails to make the people's awareness become better slowly, and now the township government should do this work, and this project has not been started for a long time, but has been just started, so that a lot of works are not recognized by the people, their awareness has not been become better, our work is more difficult. People have littered harmful traditional practices and it is not realistic to make them give up.

In this part of MSW cleaning and transport, we have been equipped with special vehicles, although the town has approved 3 vehicles, they are rented, not professional sealed vehicles, and just covered with a shed in transporting, and now the country is building "green agriculture", our work pressure is great. On one hand, the vehicles are not enough or professional, on the other hand, our pond is an open simple MSW pond, which will also affect the appearance of the village beside the street, in the summer, the smell will be emitted, the people will not agree to build this thing, when it rains, it will become more difficult to treat. Because we have no sprinklers, many facilities are not equipped.

📖 Sunjia Village, Yvting Town, Yugan County December 9, 2015

In this village, over a hundred households, impoverished people are a relatively large population, accounting for 60% of all households, most of whom are doing farm work. Most people here grow vegetables and sell vegetables for a living. In this family, there are 7 people, the husband is working in a Fujian factory for over 3000 Yuan a year, and the interviewee is a housewife. There is no collectively-owned industry here, and no one is farming fish. We support this project, as long as the MSW can be removed in time and there would be no much impact, in addition, the site selection of MSW transfer station must be farther away from the household and occupy collective land as must as possible occupation rather than farmland.

Lake management component: ① minimizing damages to the existing infrastructure; ②strengthening environmental publicity and education to improve public environmental awareness; ③minimizing production and living impacts during construction; ④granting reasonable compensation to affected aquaculture households; ⑤ avoiding secondary pollution arising from dredging; ⑤providing environmental sanitation facilities, and establishing sound MSW transfer and treatment systems to ensure environmental sanitation; ⑥Shortening the construction period where possible.

📖 Aquaculture farmers, Yugan County, December 9, 2015

After Pipa Lake is regulated, the aquaculture farmers will be impacted, and with the fodder and nourishment being forbidden to pour in the lake, their yield will be decreased. Economic benefits will be relatively poor. The compensation should comply with the opinions of the county government. And those from Zhejiang who were growing pearls here and caused awful smell in the air were forced to move away. The people growing pearls were compensated with forty or fifty thousand Yuan of resettlement fee and we help them find proper aquaculture bases. In the past, aquaculture covered an area of 200 mu. Fish farming was the conventional farming category, namely, four major Chinese carps, and the fishponds are connected to Pipa Lake, which has some impact on it. Among the villagers, there are 30-40 households contracting fish farming work, covering 820 mu, and the area is also up to hundreds of mu even excluding the fishponds. The annual yield of aquatic products in total is over 150 tons.

📖 Villager in Hushan Village, Taolin Township, Poyang County, December 10, 2015

Our villagers have a better awareness about the environment because of the protection of the land, in 2007, we created "ecological fishing village", the county puts money into the project, so that the people become rich, the village appearance attracts many foreigners to visit our village, the happy farmhouse develops better. I think it is beneficial for the environment, it is a people-benefit project, as long as no land is acquired and no money is paid, the people will provide more supports.

📖 Resident along Zoujiazui Lake, Duchang County, December 8, 2015

The occupied wetland in the lakeside should be restored, of which the vegetable fields and lands should be leveled, thus one year's crop compensation should be given; The pipeline construction will affect some residents in the three villages, and the temporary land compensation should be given to them, but the standard has not been determined. But the project construction should not affect our normal life or pollute our land.

2) Residents affected by LA and HD

①Wastewater management component: conducting proper resettlement and livelihood restoration for LA and HD; conducting LA through adequate consultation with them during project implementation; granting housing resettlement and other compensation (e.g., employment) to residents affected by LA and HD; ②MSW disposal component: granting housing resettlement and other compensation (e.g., employment) to residents affected by LA and HD; resettling residents affected by LA and HD properly, and offering reasonable cash compensation; ③Lake management component: resettling residents affected by LA and HD properly, and offering reasonable cash compensation and other measures.

📖 Cadre in Wangdun Township, Duchang County, December 8, 2015

If the establishment of MSW transfer station involves in land requisition, it should be in remote place, if there is no compensation, we hope to get cash and land, at the same time, if the land is demolished, additional accommodation should be arranged, the project should not affect our normal life.

📖 Cadre in Hushan Village, Taolin Township, Poyang County, December 7, 2015

Capital investment should be increased. Wastewater treatment does not involve land acquisition but MSW transfer station needs land, which would not be paid by individuals. Each household should build a blind ditch to lead wastewater to the wastewater treatment facilities.

The location of the MSW transfer station should be far away from the residential area and within the collective land, and if there is no collective land, the method of land use should be acquisition or leasing. There is no project problem. It should be noted that before design and plan, the communication with the town government should be enhanced. The township's party committee and government know villagers most, and plans should be developed based on the specific situation of different villages, otherwise problems will come up during the implementation. Once involving in land matter, the construction of MSW transfer stations will meet difficulties. The MSW transfer station covers over 100m², a relatively large area, and currently, as long as the villagers don't have to pay money or hand over land, they will be supportive. Land acquisition is the major problem.

3) Enterprises and stores

Their needs for the Project include creating a favorable environment for their development, taking appropriate measures to reduce negative impacts of construction, and expecting the government to develop policies to reduce or exempt wastewater treatment charges.



Figure 5-3 A timber mill in Jishui County Figure 5-4 Stores along pipelines in Jishui County

4) IAs

Project leading groups have been established in the project counties, headed by county leaders, with members from functional departments, responsible for organizational coordination in project implementation. Their needs for the Project include meeting social, cultural and living demand, and promoting economic and social development to the greatest extent, realizing environmental protection, obtaining funds to improve the remuneration and working environment of the staff, improving the service capacity of urban environmental infrastructure, ensuring long-term project planning to benefit people, implementing the Project successfully through adequate consultation, and minimizing adverse impacts.

5) Government agencies

County EPBs are responsible for environmental monitoring and supervision in the Project. They can also take this opportunity to strengthen publicity to improve environmental awareness.

Director Fu, Environmental Protection Bureau, Poyang County, December 7, 2015

We will do the publicity widely, with the town publicizing “the construction of a new village”. Village cleanness is a very important element, the township government should conduct propaganda to mobilize the awareness of farmers. A restriction mechanism should be established based on villagers’ consciousness.

Collection and treatment of MSWs and wastewater should be done in a concentrated manner by the government, and if the work is done by villagers, it might be unable to achieve the goal. In this way, the treatment effects will be better, and the goal of being durable can also be realized. In the design process, this work should be guaranteed by the government. The Rural Work Sector should be responsible for the construction of new villages of the town. The wastewater should be treated in a concentrated manner. Otherwise the work cannot be controlled very well.

County water resources bureaus are closely associated with the Project, and are responsible mainly for water resources planning, water quality monitoring, water management and conservation, etc.

Director of Water Conservancy Bureau, Yugan County, December 9, 2015

The land around Huhui River is within the scope of water conservancy, currently, it belongs to the villagers, and the confirmation of land rights has not implemented.

The law enforcement for water conservancy is not implemented, and the river levee within 20m is all land for channel. The key problem is law enforcement.

Villagers have not obtained contract operation certificates. If the project occupies land within the scope, there will no compensation, but villagers will not agree. Usually there should be compensation for young crops. After site selection, the red line should be marked as soon as possible, and once cultivated land is involved, it should be submitted for approval. The town should issue a relevant policy. Aquaculture should be controlled in a proper degree.



Figure 5-5 Aquatic Occupational Training School of Yugan County

County civil affairs bureaus are responsible for social affairs management, social welfare, urban and rural MLS, etc. In the Project, they are not involved directly, but are responsible for the identification urban and rural MLS population for the purpose of collection of wastewater treatment and MSW disposal charges.

Director of Bureau of Civil Affairs, Shangli County, December 4, 2015

It is necessary to support the construction of MSW transfer stations, and it is recommended to take towns as the main construction body of the project. Families enjoying minimum living guarantee will not be charged with this fee, and since there are very few such families in each village, it won't be a problem. And they can work as cleaners.

County land and resources bureaus are responsible for the optimal allocation and ownership management of land and resources, and will handle LA in the Project in accordance with the Land Administration Law of the People's Republic of China, and the Notice of the Jiangxi Provincial Government on Adjusting AAOV Rates and Location-based Land Prices for Land Acquisition.

📖 Director of Land and Resources Bureau, Poyang County, December 8, 2015

1. Land acquisition standard: The provincial government document 2015871 (accessible online) should be followed, and no rules are issued by the county government, it can be reviewed online. It should be implemented based on GF ZI [2015] 81 Document.

2. Standard of the road construction: For roads shorter than 6.5m, the approval procedures are not needed, and such roads can be constructed as per the management rules for rural road construction rather than being limited by quota. But land acquisition procedures are necessary. Roads longer than 6.5m should be submitted for approval and the compensation system for farmland occupation should be implemented.

3. Compensation should be paid to the bank accounts of residents.

Advice: (1) Land acquisition should be in line with a strict standard, the town government should take the responsibilities, and the basic farmlands should be protected largely;

(2) The road surface (5m) plus the roadbed are 6.5m in total;

(3) The location of the MSW transfer station should be at the downwind part;

(4) The land acquisition should avoid damages to villagers' graves as well as disputes with villagers.

Possible safety problems: Land acquisition will be involved, the land ownership is not clear, and compensation should be done for controversial lands.

County urban administration bureaus are responsible for enforcing laws, regulations and bylaws on urban administration, including city appearance, planning, traffic order, business, utilities, landscaping, environmental protection, construction site management, etc.

📖 Director of Urban Management Bureau, Shangli County, December 4, 2015

(1) The villager's consciousness of environmental protection should be enhanced and it should be convenient to villagers rather than bringing troubles to them.

Currently, villagers behave based on convenience. If dumping MSWs remains inconvenient, they will keep dumping them in the river.

(2) Construction work should be restricted and houses should be restricted to be built near rivers and lakes so as to protect water sources

(3) Instead of being conceptual, leaders should think from the perspective of villagers

(4) The construction of the project should be practical and realistic. The road should be maintained properly and the planning should be made in a long term.

(5) There should be no impact on people's life

(6) The cleaning and transport done by MSW transfer vehicles should be timely

The above government agencies have the following needs: minimizing negative impacts, promoting successful implementation to improve the environment and living standard, considering things from the perspective of people, combining theory with practice, and giving full play to the Project's positive impacts to improve the urban environment, people's living standard, promote economic and social development, and improve the government's image.

Table 5-5 Demand analysis of primary stakeholders

Stakeholder		Need
EA	Provincial Project Leading Group	<ul style="list-style-type: none"> ①Meeting social, cultural and living demand, and promoting economic and social development to the greatest extent;; ②Realizing environmental protection, and improving the service capacity of urban environmental infrastructure; ③Ensuring long-term project planning to benefit people
IAs	County project leading groups	<ul style="list-style-type: none"> ①Meeting social, cultural and living demand, and promoting economic and social development to the greatest extent; ②Realizing environmental protection, effective resource utilization, and maximizing project profits; ③Implementing the Project successfully through adequate consultation, and minimizing adverse impacts; ④Obtaining funds to improve the remuneration and working environment of the staff
Governments	EPBs, water resources bureaus, civil affairs bureaus, land and resources bureaus, etc.	<ul style="list-style-type: none"> ①minimizing negative impacts, and promoting successful implementation to improve the environment and living standard; ②Considering things from the perspective of people, combining theory with practice; ③Promoting new countryside building
Enterprises	Enterprises affected by the wastewater management and lake management components	<ul style="list-style-type: none"> ①Creating a favorable environment for their development; ②Taking appropriate measures to reduce negative impacts of construction; ③Expecting the government to develop policies to reduce or exempt wastewater treatment charges
Residents	Ordinary residents and APs in the area of the wastewater management component	<ul style="list-style-type: none"> ①Improving wastewater collection and treatment services to improve the living environment; ②Imposing wastewater treatment charges within their affordability; ③Developing preferential policies for poor households; ④Conducting proper resettlement and livelihood restoration for LA and HD; ⑤Strengthening publicity and training on environmental protection; ⑥Granting housing resettlement and other compensation (e.g., employment) to residents affected by LA and HD; ⑦Shortening the construction period where possible; ⑧Minimizing secondary noise, dust and sludge pollution during construction; ⑨Conducting LA through adequate consultation with them during project implementation
	Ordinary residents and APs in the area of the MSW disposal component	<ul style="list-style-type: none"> ①Transferring MSW from MSW transfer stations timely; ②Using enclosed vehicles for MSW transfer to prevent MSW pollution and odor diffusion; ③Providing adequate MSW disposal infrastructure and increasing the remuneration of cleaners; ④Ensuring that MSW disposal charges are affordable, and developing a preferential policy for the poor; ⑤Carrying out publicity and training on MSW separation; ⑥Resettling residents affected by LA and HD properly, and offering reasonable cash compensation and other measures; ⑦Minimizing secondary noise, dust and sludge pollution during construction
	Ordinary residents and APs in the area of the lake management component	<ul style="list-style-type: none"> ①Providing environmental sanitation facilities, and establishing sound MSW transfer and treatment systems; ②Strengthening environmental publicity and education to improve public environmental awareness; ③Minimizing production and living impacts during construction; ④Shortening the construction period where possible; ⑥Minimizing damages to the existing infrastructure; ⑦Avoiding secondary pollution arising from dredging; ⑧Granting reasonable compensation to affected aquaculture households

5.3.3 Impacts of the Project on stakeholders

The task force has learned the Project's impacts on different stakeholders by means of questionnaire survey, interview, FGD and observation.

1) Local residents

① Wastewater management component

For urban residents, this component will improve urban wastewater collection systems and the living environment, thereby protecting their physical health. In addition, this component will generate some jobs for them and improve their public participation awareness.

However, this component may increase wastewater treatment rates, which means a heavier financial burden, especially for low-income households. Construction will affect traffic, and nearby stores and enterprises temporarily. In addition, urban residents may also be affected by LA or temporary land occupation.

📖 Residential District, Times Square, Laocheng District, Jingan County, December 9, 2015

It is a snack road in the town, the road is narrow, during the construction, it is not very convenient for our normal work and the children to school, in addition, the noise impact of the construction caused by the village residents is very big. There are many businesses beside the road, therefore it has a great impact on the business.



Figure 5-5 Somewhere near Time Plaza in Jing'an County

For rural residents, this component will improve the ecological environment greatly, and protect their physical health and drinking safety.

However, they may be affected by noise and dust pollution during construction, and have to pay more wastewater treatment charges. In addition, LA and temporary land occupation will affect livelihoods of LEFs.

📖 Sunjia Village, Yvting Town, Yugan County December 9, 2015

In overall, the environmental treatment in our village is very poor, no wastewater sewer network is connected, but our village is poor in reality, so if the wastewater disposal charge should be borne by us, I hope it should be not expensive, the government should pay it, because we often drink water from the well at ordinary times, the tap water is too expensive.



Figure 5-6 Field visit in Yuting Town, Yugan County

②MSW disposal component

For urban residents, this component will promote urban development and modernization, and improve their physical health.

However, this component will increase MSW disposal charges. Construction will affect their daily lives temporarily. In addition, urban residents may also be affected by LA or temporary land occupation.

Residents, Chengnan Avenue, Jingan County, December 9, 2015

We hear that the MSW station site is in Nangang Road, but at present, the land is for vegetable, once built completely, our vegetable garden was occupied, we are not willing to see it, but it is a project which can benefit the nation and the people, we are supportive, and the vegetable field loss is not serious.



Figure 5-7 Vegetable land on Nangang Road in Jing'an County (possibly occupied)

For rural residents, this component will renew the village appearance, and improve their

physical health and sense of responsibility for environmental protection.

It should also be noted that MSW transfer stations may occupy their land and affect their livelihoods. In order to protect their rights and interests, resettlement will be conducted in conformity with the applicable Bank policies, and state laws and policies, and through extensive consultation. In addition, MSW disposal charges will increase their financial burden, and should preferably not exceed 10 yuan per month per household.

📖 Mrs. Shen, Hengshui Village, Jinshan Town, Shangli County, December 5, 2015

The establishment of the MSW transfer station will be beneficial for the individual and village collective, the health can get better, the foreigners will feel more comfortable when visiting, it can also improve our quality of life, but the establishment of MSW transfer station will occupy the mountain, there will be not a lot of compensations, additionally, we are worried about the smell pollution during compressing MSW after the establishment the MSW transfer station.



5-8 Proposed site of the MSW transfer station in Hengshui Village, Jinshan Town

③ Lake management component

For urban residents, this component will improve the living environment, the city appearance and their physical health.

However, construction will affect their daily lives temporarily.

📖 Villager in Pipa Lake District, Yugan County, December 7, 2015

We support the lake governance project greatly, it is more busy in the market at night, so that the pollution in Pipa Lake is very serious, so the water quality becomes more and more bad in recent years, it smells bad in the summer, but it has no adverse effect on us, if the leisure green is built in the future, we can walk along the lake, it is also very fine.

For rural residents, this component will improve rural behaviors of MSW disposal and wastewater treatment, and promote new countryside building.

However, this component will involve LA, secondary pollution arising from lake dredging, and farmland damage, so resettlement and compensation should be planned in advance. In addition,

noise, dust and other pollution during construction will affect their physical health and daily lives.

📖 Villagers in Yangjiagang Village, Duchang County, December 8, 2015

If involving in land acquisition and temporary land occupation, it will certainly affect our interest, we hope the project party can reduce the impact on our livelihood, try not to take the land and not to make the project become too complicated.



Figure 5-9 Yangjiagang Village, Duchang County Figure 5-10 Farmland in Yangjiagang Village, Duchang County

2) Vulnerable groups

For vulnerable groups, the Project will have the following impacts: 1) improving local environmental sanitation and their health, and reducing medical expenses; 2) generating some jobs for them; 3) improving their living environment; and 4) promoting their own capacity building. The government will exempt vulnerable groups wholly or partly from wastewater treatment and MSW disposal charges.

In the Project, vulnerable groups mainly include women and the poor. Since women are closely related to wastewater and MSW in daily life, more attention should be paid to their attitudes, needs and suggestions in project publicity, training and implementation, especially elderly women, in order to improve the project design. The Project will release women from wastewater and MSW disposal, and let them spend more time and efforts on housework and personal development.

The poor will be exempted from MSW disposal and wastewater treatment charges in order not to increase their financial burden.

3) County PMOs

The Project will improve the local environment and promote local economic development, which will be a major administrative achievement of local governments, and lay a good foundation for the application and implementation of similar projects in the future. The Project is also a challenge for the county PMOs, which should conduct management and coordination properly.

Table 5-6 Analysis of the Project's impacts on primary stakeholders

Component	Positive impacts	Negative impacts
Wastewater management	Rural: ①Generating nonagricultural jobs ②Promoting urbanization Urban: ①Improving environmental sanitation ②Improving health ③Promoting industry transformation and upgrading	Rural: ①Damaging the rural environment ②Affecting residents' production and daily lives ③Affecting physical health and traffic ④Increasing financial burden Urban: ①Increasing wastewater treatment charges ②Affecting operations of nearby stores and enterprises

Component	Positive impacts	Negative impacts
	④Promoting employment ⑤Laying a foundation for further urbanization	during construction ③Affecting residents' daily lives
MSW disposal	Rural: ①Promoting new countryside building ②Improving environmental awareness ③ Improving health Urban: ① Improving the living environment ②Improving health ③Promoting urban economic development	Rural: ①Occupying land ②Affecting agricultural production during construction ③Increasing MSW disposal charges ④Producing odor from MSW transfer stations Urban: ①Increasing MSW disposal charges ②Noise and other pollution during construction ③ Producing odor from MSW transfer stations
Lake management	Rural: ①Changing bad behaviors of MSW disposal and wastewater treatment effectively ② Promoting new countryside building and the transformation of rural development patterns Urban: ①Protecting water ecology ②Improving the city appearance	Rural: ①Damaging farmland (lake embankment and ecological wetland) ②Secondary pollution arising from lake dredging ③Noise and other pollution during construction Urban: ①Affecting residents' daily lives ②Secondary pollution arising from lake dredging

5.3.4 Impacts of stakeholders on the Project

While the Project affects stakeholders, it is also affected by stakeholders. Identifying such impacts will promote project implementation.

1) Local residents

①Urban residents

Most urban residents support the wastewater management component, which has minimized LA and HD through design optimization.

Sewer line construction will affect nearby stores and enterprises, and passing vehicles and pedestrians temporarily, but such impact will disappear with the completion of construction. Most urban residents can accept this, and do not resist increased wastewater treatment charges strongly, because such charges account for a very low proportion to their expenditure, but such charges should preferably not exceed 2 yuan per ton.

Urban residents support the MSW disposal component conditionally, because they are unwilling to live near MSW transfer stations, and untimely MSW transfer will result in air pollution.

Urban residents support the lake management component actively, because it will improve the urban environment and their physical health.

②Rural residents

Rural residents support the wastewater management component actively, because lake pollution is serious in many rural areas. However, wastewater treatment charges should be controlled, preferably not more than 0.8 yuan/ton.

Rural residents, especially LEFs, have the power to determine the site of a MSW transfer station. If the relationship with local rural residents is not handled properly, the construction and operation of the Project will be affected greatly. In addition, MSW disposal charges should preferably not exceed 20 yuan per household, otherwise this component will be resisted by rural residents.

Rural residents also support the lake management component greatly, because good lake water quality is important to them.



Figure 5-11 Vegetable washing beside Zhuhu Lake in Poyang County

2) Vulnerable groups

Vulnerable groups also support the Project, because they expect to improve their living conditions through the Project. Therefore, livelihood improvement and employment opportunities should be provided to them to facilitate project implementation and promote their own development. In addition, they should be wholly or partly exempted from wastewater treatment and MSW disposal charges in order to win their support.

3) PMOs

The PMOs are responsible for project organization, management and coordination, and their attitude, capacity and efficiency will determine how successful the Project will be. Therefore, they must coordinate relations among the provincial PMO, owners, design agencies and township governments to ensure successful project implementation.

4) County governments and other agencies

County governments will make major decisions during preparation and implementation, and coordinate project implementation. Other agencies such as EPBs, land and resources bureaus, and urban planning bureaus will play their own roles in project implementation. Their attitude and support are essential to successful project implementation.

Chapter 6 Development Analysis of Vulnerable Groups

Generally, women, children, the poor and ethnic minorities are classified as vulnerable groups. It is necessary to collect their basic information at the early preparation stage, and take appropriate measures to minimize the Project's impacts on them.

6.1 Women

6.1.1 Overview of local women

In the project area, female population accounts for roughly half of gross population. See Table 6-1.

Table 6-1 Female population of the project counties (2014)

County	Gross population (0,000)	Female population (0,000)	Percent (%)	Gender ratio
Shangli	51.67	24.86	48.11	107.8
Yugan	106.10	49.18	46.35	115.7
Poyang	158.40	75.61	47.73	109.5
Fengxin	33.42	16.37	48.98	104.2
Jishui	53.58	25.48	47.56	110.3
Duchang	81.05	38.38	47.35	111.2
Jing'an	15.15	7.27	47.99	108.4

Source: statistical yearbooks of the project counties (2014)

The questionnaire survey involves 219 women, accounting for 54.2% of all respondents.

1) Age

53.4% of the female respondents are aged 31-59 years, indicating that the project area abounds with adult female labor. 22.8% are aged 60 years or above, above the international aging line of 10%, indicating that the project area has a strong population aging trend.

Table 6-2 Gender-age distribution of the samples

Age	Female		Male		Total	
	N	Percent (%)	N	Percent (%)	N	Percent (%)
30 years or below	49	22.4	41	22.2	90	22.3
31-59 years	117	53.4	105	56.8	222	55.0
60 years or above	53	24.2	39	21.1	92	22.8

Source: SA questionnaire survey

2) Educational level

57.1% of the female respondents have received junior high school or senior high school / secondary technical school education, and 16.4% and 11.0% (totaling 27.4%) have received junior college and undergraduate education, respectively.

Table 6-3 Gender-educational level distribution of the samples

Gender \ Educational level	Female		Male		Total	
	N	Percent (%)	N	Percent (%)	N	Percent (%)
Primary school or below	34	15.5	21	11.4	55	13.6
Junior high school	65	29.7	58	31.4	123	30.4
Senior high school / secondary technical school	60	27.4	51	27.6	111	27.5
Junior college	36	16.4	38	20.5	74	18.3
Undergraduate or above	24	11.0	17	9.2	41	10.1

Source: SA questionnaire survey

3) Occupation

41.3% of all respondents deal with farming, forestry, stockbreeding or fishery, and 23.8% with commerce or service worker. It should be noted that more female respondents (92) deal with farming, forestry, stockbreeding or fishery than males, possibly because some men were working outside during the survey.

Table 6-4 Gender-occupation distribution of the samples

Occupation	Female		Male		Total	
	N	Percent (%)	N	Percent (%)	N	Percent (%)
Civil servant	9	4.1	7	3.8	16	4.0
Technician	13	5.9	25	13.5	38	9.4
Enterprise employee	22	10.0	21	11.4	43	10.6
Commerce or service worker	56	25.6	40	21.6	96	23.8
Farming, forestry, stockbreeding or fishery worker	92	42.0	75	40.5	167	41.3
Other	27	12.3	17	9.2	44	10.9

Source: SA questionnaire survey

6.1.2 Local women's development strategies

In order to promote gender equality and women's development, and protect women's lawful rights and interests, numerous projects have been implemented in the project counties.

Table 6-5 Near-term women's development projects in the project counties

County	Measures
Shangli	Establishing the Women's Home platform to organize activities and protect women's rights AIDS prevention knowledge publicity Assisting women in learning and employment
Yugan	Establishing women's federations at the village level Performing cancer screening for women, and granting subsidies to sick poor women Women's volunteer environmental protection campaign
Poyang	Women's volunteer service team Demonstration in protection of women's rights Women's contribution, care and protection
Fengxin	Legal consulting for women Women's training, practice and business startup
Jishui	Skills training for rural women Childbirth knowledge training for rural women Publicity on the new marriage law Educational support for poor girls
Duchang	Establishing the association of women enterprisers Obedient wife appraisal Establishing rural women's specialized cooperatives Free cancer screening for 20,000 rural women
Jing'an	Most beautiful home appraisal Grass-root female official training Women's reading Poverty reduction projects for women

Source: reports of county women's federations during 2010-2015

6.1.3 Relationship between local women and the environment

The survey shows that there is a significant division of labor by gender in wastewater and MSW disposal.

35.8% of the female respondents (23.2% young and 12.6% elderly), and 59.6% of the males would dispose of wastewater, while young and elderly women are the main force of MSW disposal, accounting for 24.8% and 41.4% respectively.

Table 6-6 Division of labor by gender in domestic wastewater disposal

		Young woman	Young man	Elderly woman	Elderly man	Child
Wastewater disposal	N	33	47	19	43	7
	Percent (%)	23.2	31.1	12.6	28.5	4.6
MSW disposal	N	39	19	65	22	12
	Percent (%)	24.8	12.1	41.4	14.0	7.6

Source: SA questionnaire survey

It can be seen that about 1/3 of local women are exposed to wastewater, which contains high levels of pathogenic bacteria, viruses and worm eggs, and is likely to cause infectious and intestinal diseases after exposure. Similarly, MSW also contains pathogenic bacteria and poses risks to women. Since women are closely related to wastewater and MSW in daily life, more attention should be paid to their attitudes, needs and suggestions in project publicity, training and implementation, especially elderly women, in order to improve the project design.

6.1.4 Social gender action plan

The Project will improve the local environment, and promote the development of secondary and tertiary industries greatly. Local women will benefit from the Project through labor input. However, the Project may pose some potential risks. Therefore, gender-sensitive measures should be taken to enhance the Project's positive benefits and minimize its negative impacts, thereby promoting women's participation and development.

The social gender action plan has been developed through consultation with the county PMOs, IAs, women's federations and other agencies concerned. See Table 6-7.

Table 6-7 Social gender action plan

Proposed action	Target group	Agencies responsible	Funding source	Stage
① Hiring women for lake and ditch maintenance and landscaping	Local women	PMOs, contractors	Project budget	Construction
② Hiring women to clean public spaces				
③ Providing MSW collection facilities to local women	Local women	EPBs	EPBs	Construction
④ Making jobs first available to women affected by LA and HD	Affected women	Labor and social security bureaus, land and resources bureaus, women's federations, village committees	Government budget	Construction
⑤ Ensuring lakeside landscaping to provide women with leisure spaces	Local women	EPBs, PMOs	Project budget, government budget	Construction
⑥ Installing streetlamps and cameras on streets and beside lakes to ensure women's safety				
⑦ Giving publicity on health and environmental knowledge	Local women	EPBs, disease control centers, women's federations, PMOs, village committees	EPBs, disease control centers	Construction and operation
⑧ Providing skills training to affected women on ecological agriculture, handicrafts, etc.	Local women	Agriculture and stockbreeding bureaus, women's federations, village committees	Agriculture and stockbreeding bureaus, women's federations	Construction and operation

6.2 Children

6.2.1 Local children's development strategies

Children represent the future of the country and are essential to the sustainable development of mankind. The Outline for Children's Development of Jiangxi Province (2011-2020) proposes main objectives and strategic measures for children's development in terms of health, education, law and environmental protection, and the county governments have implemented specific projects under the outline to promote children's development^[1].

Table 6-8 Near-term children's development projects in the project counties

County	# of children	Measures
Shangli	94788	Home education workshop Establishing the Caring Center for Staying Women and Children Aiding over 1,000 poor students since 1995 under the Spring Bud Program
Yugan	75330	Establishing a kindergarten for staying children Training first-aid teachers for high schools Giving publicity on children's preventive inoculation
Poyang	189995	Rural children's palaces Educational quality improvement Yihong Scholarship Foundation
Fengxin	58497	Care for staying children Training on child maltreatment prevention
Jishui	92082	Establishing a collegial panel to protect lawful rights of women and children Establishing a complaint station for women and children Providing volunteer diagnostic service to rural children Children's edification
Duchang	133086	Improving the serious illness and outpatient assistance system for children Improving the educational pattern
Jing'an	34558	Investing 11.83 million yuan in school standardization in 2014 Campus reading campaign A series of theme activities, covering moral education, environmental protection and the Chinese Dream Teacher morality examination

Source: reports of county women's federations and education bureaus during 2010-2015

In addition, the Project will improve the local environment greatly and reduce the incidence of infectious diseases, thereby providing a good growth environment to children.

6.2.2 Children's participation plan

Children's environmental education will serve future environmental protection. Although children participate in the Project to a limited extent, their environmental awareness will be essential to future community building. In view of this, the following activities have been conducted to promote children's participation in the Project:

- 1) Community environmental publicity by students and parents at weekends;
- 2) Dissemination of knowledge on MSW separation and water conservation by means of campus broadcast, blackboard newspaper and bulletin board;
- 3) Article solicitation and speech contest on environmental protection;
- 4) Establishing volunteer service teams at schools for campus cleaning and environmental awareness improvement

6.3 Poor population analysis

^[1] The UN Convention on the Rights of the Child stipulates that children are aged 0-18 years.

6.3.1 Overview of poverty in Jiangxi Province

Jiangxi Province is a well-known old revolutionary region, and is relatively underdeveloped due to bad traffic conditions, insufficient resources and unsound industry structure.

In 2011, the Outline for Rural Development-oriented Poverty Reduction of Jiangxi Province (2011-2020) was promulgated, increasing the poverty line from 1,196 yuan to 2,300 yuan. Correspondingly, the poor population of the province grew from 750,000 to 4.38 million.

3,400 key poor villages have been identified in Jiangxi Province, accounting for about 60% of Jiangxi's poor population. Development-oriented poverty reduction now covers 38 counties.

6.3.2 Overview of poverty in the project counties

Most of the project counties are located in the underdeveloped central mountain region, with a large poor population, and construction will inevitably affect their production and livelihoods. Therefore, great attention must be paid to the local poor population.

Table 6-9 Poor populations and compensation rates of the project counties (2014)

County	Poor population (0,000)	MLS households			
		Urban		Rural	
		N	Rate (yuan/month)	N	Rate (yuan/month)
Shangli	1.23	5516	450	11688	240
Yugan	11.2	15736	450	41280	240
Poyang	17	17815	400	40329	200
Fengxin	0.96	6017	430	10711	220
Jishui	1.9	10827	450	17820	240
Duchang	9.6	9685	430	33041	220
Jing'an	0.74	3893	445	6315	245

Source: statistical yearbooks of the project counties (2014)

6.3.3 Poverty reduction strategy and measures

1) Provincial poverty reduction strategy

The provincial government requires that departments at all levels to vigorously strengthen development-oriented poverty reduction as a prerequisite to building a well-being society, and has enacted a number of important policies for this purpose in order to build an integrated poverty reduction mechanism based on special, social and industrialized poverty reduction, which includes poverty reduction by relocation, poor village improvement, poor labor transfer (Rain and Dew Program), and poverty reduction by industrialization. In addition, a point-to-point poverty reduction mechanism has been established for the 38 key poor counties, with an annual poverty reduction budget of 10 million yuan each.

Despite of a good beginning, the challenge remains daunting. Jiangxi still has a poor population of 2.9 million, in which over 1 million people live in remote mountain areas, reservoir areas and geologic hazard areas.

2) Poverty reduction measures in the project counties

According to the Outline for Rural Development-oriented Poverty Reduction of China (2011-2020) and local policies, poor reduction is conducted in the project counties in the following 5 aspects mainly: 1) focusing on infrastructure construction to improve local production and living conditions; 2) developing characteristic industries to broaden income sources; 3) offering training under the Rain and Dew Program to improve farmers' competencies; 4) strengthening relocation to improve living conditions; and 5) conducting point-to-point poverty reduction properly. Specifically, relevant projects fall into the 4 categories of infrastructure construction (e.g., rural highways), rural production and living condition improvement (e.g., water and power supply, house renovation,

relocation), basic public services (e.g., education, IT building), and characteristic industries (e.g., tourism, agritainment, commercial crop cultivation).

On the other hand, poverty reduction measures vary from county to county, such as livestock, fruit and vegetables in Jishui County, infrastructure, industry development, labor output and relocation in Poyang County, and point-to-point poverty reduction (by civil servants) in Yugan Village.

3) Poverty reduction measures under the Project

The Project will improve the living and working environment, and living quality of the poor. In addition, the following measures will be taken to provide further assistance to the poor:

- a) Exempting them from wastewater treatment and MSW disposal charges wholly or partly;
- b) Making training opportunities first available to the poor; and
- c) Making new jobs first available to poor laborers, such as cleaner and MSW collector.

6.4 Ethnic Minorities

Jiangxi Province has 55 ethnic groups, and over 99% of its population is composed of Han people. The ethnic minorities with the largest populations are Hui and She. See Table 6-10.

Table 6-10 Ethnic minority composition of the project counties (2010)

County	Ethnic composition		Minority village
	Han	Ethnic minorities	
Shangli	441503	357	None
Yugan	887603	0	None
Poyang	129600	399	None
Fengxin	312531	425	None
Jishui	498731	2606	Qianfang and Yuanjia She Villages, Dingjiang Town Xiaochong She Village, Wujiang Town Shatian She Village, Shuinan Town
Duchang	715609	761	Duobao Hui Village, Duobao Xiang
Jing'an	140000	0	None

Source: Bulletin of the Sixth National Population Census, 2010

Among the 7 project counties, minority villages can be found in Jishui and Duchang Counties only, but none of them is within the project area. Therefore, the Project will not affect any ethnic minority.

Chapter 7 Willingness and Ability to Pay

The Project offers public products and services, and therefore involves willingness and ability to pay, as analyzed based on the data of the questionnaire survey.

7.1 Willingness to pay

The construction of sewer lines and MSW transfer stations will certainly involve relevant charges. The willingness to pay of local residents will determine the sustainable operation and management of the Project directly. In general, most residents accept such charges because they understand the significance of the Project.

The data here is from the “willingness and ability to pay” part of the questionnaire. In the survey, 470 copies were recovered in total, with 404 valid copies, including 151 for the wastewater management component, 157 for the MSW disposal component and 96 for the lake management component.



Figure 7-1 Questionnaire on willingness to pay filled up by a resident

Interview of resident in Pipa Lake District, Yugan County (female, 51 years old)

For MSW charges here, one household paid 110 yuan per year, and I feel it is still reasonable. Because if the environmental health becomes good, our life can become comfortable, if the MSW disposal charge is risen, and within the reasonable limits, we can accept them.

7.1.1 Willingness to pay by component

When asked “What wastewater treatment charges are the most reasonable?”, 27.3% of the respondents choose 0.4 yuan or below, 54.7% choose 0.5-0.8 yuan, 16.4% choose 0.9-1.2 yuan, and only 1.6% choose 1.3 yuan or more. Therefore, most residents think it reasonable to collect wastewater treatment charges, and the most reasonable range is 0.5-0.8 yuan.

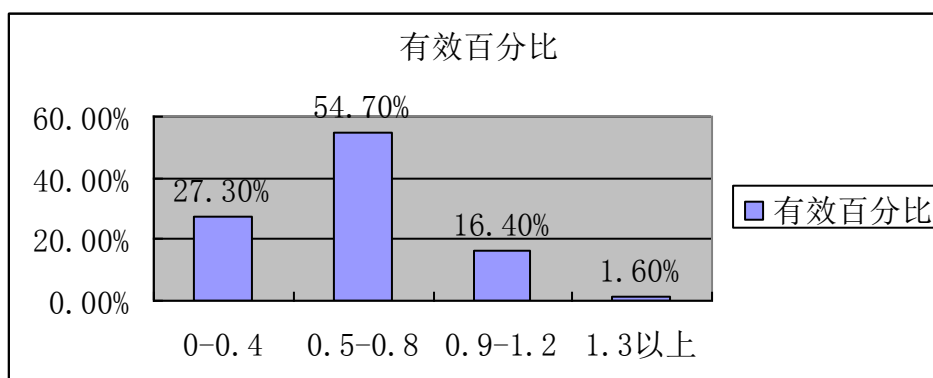


Figure 7-2 Willingness to pay wastewater treatment charges of local residents (monthly)

Source: SA questionnaire survey

When asked “What MSW disposal charges are the most reasonable?”, 12.7% of the respondents choose 0-5 yuan, 22.3% choose 6-10 yuan, 41.4% choose 11-15 yuan, 17.2% choose 16-20 yuan, and only 6.4% choose 21 yuan or more. Therefore, most residents think the most reasonable range is 11-15 yuan.

Table 7-1 Willingness to pay MSW disposal charges of local residents (monthly)

MSW disposal charges	Frequency	Valid percent
0-5	20	12.7%
6-10	35	22.3%
11-15	65	41.4%
16-20	27	17.2%
21 or more	10	6.4%
Total	157	100%

Source: SA questionnaire survey

7.1.2 Household income vs. willingness to pay

Household income affects willingness to pay greatly. 95.4% of the respondents are willing to pay wastewater treatment charges, and only 4.7% are unwilling. Those with the highest willingness to pay are mostly within the range of 30,001-45,000 yuan, accounting for 35.1%, and those with annual household income of 15,000 yuan or less have low willingness to pay. However, there is no significant correlation between willingness to pay and household income.

Table 7-2 Willingness of households of different annual income levels to pay wastewater treatment charges (monthly)

Household income	Willing to pay	Unwilling to pay
15,000 yuan or less	9 (6.0%)	1 (0.7%)
15,001-30,000 yuan	45 (29.8%)	3(2%)
30,001-45,000 yuan	53 (35.1%)	2(1.3%)
45,001 yuan or more	37 (24.5%)	1 (0.7%)
Total	144 (95.4%)	7 (4.7%)

Source: SA questionnaire survey

68.2% of the respondents are willing to pay MSW disposal charges, and 31.8% are unwilling. There is a certain level of positive correlation between household income and willingness to pay, where those with annual household income of 45,001 yuan have the strongest willingness to pay, accounting for 49%.

Table 7-3 Willingness of households of different annual income levels to pay MSW disposal charges (monthly)

Household income	Willing to pay	Unwilling to pay
15,000 yuan or less	7 (4.5%)	6 (3.8%)
15,001-30,000 yuan	8 (5.1%)	5 (3.2%)
30,001-45,000 yuan	15 (9.6%)	6 (3.8%)
45,001 yuan or more	77 (49.0%)	33 (21.0%)
Total	107 (68.2%)	50 (31.8%)

Source: SA questionnaire survey

7.1.3 Educational level vs. willingness to pay

In general, educational level is positively correlated with willingness to pay wastewater treatment charges. 84.8% of the respondents are willing to pay wastewater treatment charges, and only 15.2% are unwilling. In general, local residents have high willingness to pay, and willingness to pay rises with educational level. Those having received primary school or below education have the lowest willingness to pay (2.6%), followed by those having received junior high school education (5.3%), having received senior high school / secondary technical school education (9.3%), those having received junior college or above education (31.8%), and those having received undergraduate or above education (35.85%). This is mainly because those better educated better recognize the importance of environmental protection.

Table 7-4 Willingness of households of different educational levels to pay wastewater treatment charges (monthly)

Educational level	Willing to pay	Unwilling to pay
Primary school or below	4 (2.6%)	9(6%)
Junior high school	8 (5.3%)	6(4%)
Senior high school / secondary technical school	14 (9.3%)	5(3.3%)
Junior college	48 (31.8%)	2(1.3%)
Undergraduate or above	54 (35.8%)	1(0.6%)
Total	128 (84.8%)	23(15.2%)

Source: SA questionnaire survey

87.9% of the respondents are willing to pay MSW disposal charges, and only 12.1% are unwilling. Those having received primary school or below education have the lowest willingness to pay (0), followed by those having received junior high school education (2%), those having received senior high school / secondary technical school education (15.3%), those having received junior college or above education 21%, and those having received undergraduate or above education (50%). It can also be concluded that educational level is positively correlated with willingness to pay MSW disposal charges.

Table 7-5 Willingness of households of different educational levels to pay MSW disposal charges (monthly)

Educational level	Willing to pay	Unwilling to pay
Primary school or below	0	7 (4.5%)
Junior high school	3 (2%)	8 (5.1%)
Senior high school / secondary technical school	24 (15.3%)	1 (0.6%)
Junior college	33 (21.0%)	2 (1.3%)

Undergraduate or above	78 (50.0%)	1 (0.6%)
Total	138 (87.9%)	19 (12.1%)

Source: SA questionnaire survey

7.1.4 Occupation vs. willingness to pay

By occupation, those more willing to pay wastewater treatment charges are civil servants, enterprise employees, and commerce or service workers, while those less willing are farming, forestry, stockbreeding or fishery workers. This is mainly because civil servants have a better understanding of the Project and higher environmental awareness.

Table 7-6Willingness of residents of different occupations to pay wastewater treatment charges (monthly)

Occupation	Willing to pay	Unwilling to pay
Civil servant	33 (21.9%)	0
Technician	21 (13.9%)	2 (1.3%)
Enterprise employee	23 (15.2%)	2 (1.3%)
Commerce or service worker	25 (16.6%)	5 (3.3%)
Farming, forestry, stockbreeding or fishery worker	15 (1.0%)	20 (13.2%)
Other	3 (2%)	2 (1.3%)
Total	120 (79.5%)	31 (20.5%)

Source: SA questionnaire survey

87.9% of the respondents are willing to pay MSW disposal charges, and most of them are farming, forestry, stockbreeding or fishery workers, because this component is mostly implemented in rural areas. In this respect, willingness to pay has little correlation with occupation.

Table 7-7Willingness of residents of different occupations to pay MSW disposal charges (monthly)

Occupation	Willing to pay	Unwilling to pay
Civil servant	5 (3.2%)	0
Technician	12(7.6%)	2 (1.3%)
Enterprise employee	10 (6.4%)	0
Commerce or service worker	35 (22.3%)	6 (3.8%)
Farming, forestry, stockbreeding or fishery worker	65 (41.4%)	11 (7%)
Other	11 (7%)	0
Total	138 (87.9%)	19 (12.1%)

Source: SA questionnaire survey

7.1.5 Age vs. willingness to pay

Age is also highly correlated with willingness to pay wastewater treatment charges. Those aged 31-59 years have the highest willingness to pay, while those aged 60 years or more have the lowest willingness to pay. This is mainly attributed to environmental awareness and income.

Table 7-8Willingness of residents of different ages to pay wastewater treatment charges (monthly)

Age	Willing to pay	Unwilling to pay
30 years or below	37 (24.5%)	5 (3.3%)
31-59 years	79 (52.3%)	1 (0.7%)
60 years or above	17 (11.3%)	12 (8%)
Total	133 (88%)	18 (11.9%)

Source: SA questionnaire survey

Those aged 31-59 years have the highest willingness to pay MSW disposal charges (51.6%), while those aged 60 years or more have the lowest willingness to pay. This is also mainly attributed to environmental awareness and income.

Table 7-9 Willingness of residents of different ages to pay MSW disposal charges (monthly)

Age	Willing to pay	Unwilling to pay
30 years or below	25 (15.9%)	3 (2%)
31-59 years	81 (51.6%)	5 (3.2%)
60 years or above	24 (15.3%)	19 (12.1%)
Total	130 (82.8%)	27 (17.9%)

Source: SA questionnaire survey

7.1.6 Government support vs. willingness to pay

Identifying the willingness to pay of residents entitled to government support^[2] can further protect the interests of vulnerable groups, especially MLS households. Those entitled to government support are willing to pay 1.3571 yuan in wastewater treatment charges, higher than those not entitled by 0.2622 yuan. See Table 7-10.

Table 7-10 Ability to pay wastewater treatment charges of residents entitled/not entitled to government support (monthly)

Government support	Sample size	Average	Standard deviation
Entitled	14	1.3571	0.49725
Not entitled	137	1.0949	0.29414
Total	151	2.452	0.79139

Source: SA questionnaire survey

Those entitled to government support are willing to pay 1.4444 yuan in MSW disposal, while those not entitled are willing to pay 1.1554 yuan.

Table 7-11 Willingness to pay MSW disposal charges of residents entitled/not entitled to government support (monthly)

Government support	Sample size	Average	Standard deviation
Entitled	9	1.4444	0.52705
Not entitled	148	1.1554	0.36352
Total	157	2.5998	0.89057

Source: SA questionnaire survey

It can be seen that local residents' willingness to pay are correlated to household income, age, educational level and entitlement to government support.

7.2 Impacts of willingness to pay on the Project

According to the above analysis: 1) Residents aged 31-59 years and with some income often show high willingness to pay, whether urban or rural; 2) Willingness to pay is positively correlated with educational level, whether in urban or rural areas; 3) Willingness to pay is positively correlated with income, whether in urban or rural areas; 4) In urban areas, civil servants, enterprise employees, and commerce or service workers are often more willing to pay due to their higher awareness of the project, while in rural areas, there is no correlation between willingness to pay and occupation,

^[2] Entitlement to government support includes: 1) MLS benefit; and 2) five-guarantee support.

because most rural residents deal with farming, forestry, stockbreeding or fishery; and 5) Those entitled to government support are more willing to pay than those not entitled.

It can be seen that improving rural educational level, promoting rural development, and strengthening publicity on environmental protection in rural areas will improve willingness to pay significantly, especially in poor rural areas.

Local governments should increase financial and resource inputs into rural areas to promote rural economic development, improve rural residents' living standard, and improve public environmental awareness. Only if rural residents' willingness to pay is improved will the Project be implemented more successfully and effectively.

7.3 Ability to pay

Ability to pay is an important measure of the Project's sustainability. Modern wastewater treatment and MSW disposal systems involve high construction, operation and maintenance costs, and high service charges, which may pose financial difficulty to those served by these systems. Therefore, it is very important to fix wastewater treatment and MSW disposal rates accepted by most local residents, expressed as a percentage to gross household income (usually 3% according to international practices).

Interview of principals at village level in Tuanlin Township, Poyang County (male, 48 years old)

There are two environmental sanitation workers in the village, with the front village and the back village both having one, and there is also one people collecting MSWs specially, who ride a vehicle and transport MSWs to a distant place, which is a mountain hole five li away from the lake, to incinerate them. Each day, two environmental sanitation workers are assigned to clean the environment and paid 18000 Yuan or 5000 Yuan by the government, with the person transporting MSWs with a motor vehicle being paid 18000 Yuan (diesel). The MSW disposal charge should be ignored, otherwise, the villagers will be not willing to support it.

7.3.1 Estimation of ability to pay

The ability to pay wastewater treatment charges, MSW disposal charges and other social charges in a region depends on local economic and social development level. Since the project counties are of medium development level, residents' ability to pay is relatively low, especially the poor. In the project area, the urban water rate (usually 2 yuan) consists of water resource charges (1.2 yuan) and wastewater treatment charges (0.8 yuan), while no water charge is collected in rural areas. Urban MSW disposal charges are usually 5-10 yuan per month per household, while rural MSW disposal charges can hardly be collected.

Studies by the Bank and other international organizations reveal that it is acceptable for household water charges to account for 3%-5% of household income. A report published by the Ministry of Construction in 1995 states that it is appropriate for household water charges to account for 2.5%-3% of household income.

In rural areas, the average per capita disposable income of urban residents and urban MLS residents is 24,309 yuan and 5,160 yuan respectively. For them, the maximum acceptable amounts of wastewater treatment charges are 14.4 yuan/ton and 6 yuan/ton respectively, and the maximum acceptable amounts of MSW disposal charges are 252 yuan/year and 110 yuan/year per household respectively; for them, wastewater treatment charges account for 0.02% and 0.01% of household income respectively, and MSW disposal charges for 0.13% and 0.18% of household income respectively.

In the project area, the average per capita net income of rural residents and rural MLS residents is 10,117 yuan and 2640 yuan respectively. For them, the maximum acceptable amounts of wastewater treatment charges are 10 yuan/ton and 5 yuan/ton respectively, and the maximum acceptable amounts of MSW disposal charges are 120 yuan/year and 30 yuan/year per household respectively. For them, wastewater treatment charges account for 0.03% and 0.02% of household income respectively.

Table 7-12 Ability to pay wastewater treatment and MSW disposal charges of local urban and rural residents

	Rate (yuan/year)	Annual household income (yuan)	Wastewater treatment charges (yuan/ton; yuan/year per capita)		MSW disposal charges (yuan/year per household)		Percent of wastewater charges to household income (%)	Percent of MSW charges to household income (%)
			Rate	Maximum affordable	Rate	Maximum affordable		
Urban residents' per capita disposable income	24309	54759	9.6	14.4	72	252	0.02	0.13
Rural residents' per capita net income	10117	23929	7	10	/	120	0.03	/

Source: SA questionnaire survey and statistical yearbooks of the project counties (2014)

Table 7-13 Ability to pay wastewater treatment and MSW disposal charges of local urban and rural MLS households

	Rate (yuan/year)	Annual household income (yuan)	Wastewater treatment charges (yuan/ton; yuan/year per capita)		MSW disposal charges (yuan/year per household)		Percent of wastewater charges to household income (%)	Percent of MSW charges to household income (%)
			Rate ^[3]	Maximum affordable	Rate	Maximum affordable		
Urban MLS	5160	27600	4	6	50	110	0.01	0.18
Rural MLS	2640	12300	3	5	/	30	0.02	/

Source: SA questionnaire survey and statistical yearbooks of the project counties (2014)

7.3.2 Judgment of ability to pay

According to the above analysis: 1) With the development of Jiangxi's economy in the next few years, people's income will further grow, so wastewater treatment and MSW disposal charges will be within the ability to pay of ordinary residents; 2) The impact of wastewater treatment and MSW disposal charges will have a greater impact on the poor than on ordinary residents; 3) Preferential policies for low-income households will help alleviate their financial burden; and 4) The prevailing provincial preferential policy on wastewater treatment charges for vulnerable groups should be followed, and public hearings should be held during water rate reform.

^[3] Note: For wastewater treatment charges, the unit of yuan/year per capita applies to rural areas only.

Chapter 8 Project Risk Analysis and Monitoring

The Project's social risks that may affect the fulfillment of the project objectives have been identified through survey and analysis in order to propose mitigation measures accordingly.

The Project's potential social risks mainly include the following:

8.1 Social adaptation risks of the Project

8.1.1 Analysis framework of social adaptation risks

A co-adaptability analysis of the Project with the project area in terms of local social and cultural conditions should be conducted to assess the feasibility of the Project and identify its social risks.

The logical framework for social co-adaptability analysis is to identify stakeholders, analyze their attitudes and needs, and propose measures accordingly.

Table 8-1 Analysis of social adaptation risks of the Project

Stakeholders	Attitude	Need	Willingness	Measure	
Project management agencies	Provincial PMO	Active	Completing the Project successfully	Completing the Project successfully	Conducting coordination properly
	County PMOs	Active			
Coordinating agencies	County departments concerned	Supportive	Financial support	Completing the Project successfully	Supporting the work of the PMOs
IAs	EPBs/urban administration bureaus	Active	Financial and organizational support	Completing the Project successfully	Implementing the Project
Both benefiting and suffering	Township governments	Active	Financial support	Assisting in project implementation	Conducting publicity and consulting properly
	Village committees	Active	Financial support, resettlement	Assisting in project implementation	Conducting publicity and consulting properly
Suffering	APs	Understanding, worried	Financial support, resettlement	Supportive	Developing the RAP
Both benefiting and suffering	Residents in directly affected area	Supportive, worried	Sanitation measures	Supportive	Conducting publicity and consulting properly
Benefiting	Residents in indirectly affected area	Supportive	Minimum additional charges	Strongly supportive	Support for the poor

8.1.2 Sources of potential social adaptation risks

Project construction will cause inconvenience to local residents and stores, thereby potentially leading in social instability. Therefore, local residents' comments on the Project were collected during the SA, and generally fall into the following 5 categories:

1) Construction quality

Quality is vital to construction. Since the Project is a major environmental management project, local residents strongly expect high construction quality.

Mrs. Wang, Shuinanbei Neighborhood Committee, Jishui County (female, 47 years old)

There are two requirements: First, the wastewater drainage ditch should be wide no matter for open channel and underground pipe, and it should be wider no matter in anyway. Now, the pipe diameter should be less than 1 meter, but this pipe should be 2 meters at least; Additionally, the drainage ditch should be as far away from the home as possible away, I fear that the ditch is too close to the ground, once the water is leaked, would it cause house softness and collapsing?!

Zhou Dehua, Jinhua Village, Shuanggang Town, Poyang County (male, 65 years old)

In order to do it, it must be built well, the quality should be guaranteed, the high-quality project should be constructed, and the domestic wastewater should be treated thoroughly.

2) Construction mode

Local residents expect that construction be conducted in consultation with them in such aspects waste disposal frequency, construction site enclosure and LA.

📖 Mrs. Shen, Hengshui Village, Jinshan Town, Shangli County (female, 60 years old)

The establishment of the MSW transfer station will certainly bring pollution, flies and mosquitoes, and will the MSW compression treatment bring smell? So I hope the MSW must be cleared up every day, it must not be heaped in the village.

📖 Cadre in Hushan Village, Taolin Township, Poyang County, December 7, 2015

The MSW transfer station site should be far away from the residential areas, it should occupy (state-owned) wasteland, but there are no proper places to acquire land, but the compensation should be in place in time.

📖 Resident in Wanli Avenue, Duchang County (female, 26 years old)

I'm worried out the safety problem because the site is beside our home, if the children fall into the pit, it is really dangerous, so the site must be surrounded and blocked well so as to avoid the children into it.

3) Construction duration

All local residents, stores and enterprises expect the construction duration to be as short as possible to minimize adverse impacts on them.

📖 Merchant, Binhe Avenue, Jingan County (male, 38 years old)

If the duration is 1-3 months, I can accept it, but I cannot stand if it is six months, of course, the shorter the better, preferably not more than 2 months, this is my limit, because the construction in front of my store will certainly affect our business.

📖 Villager operating a store in Chian Village, Fengxin County (male, 52 years old)

The laying of the sewer network may damage the road which must be restored, the construction time should be shorter, and it should not affect the people's normal life.

4) Construction time

Stores expect construction to be conducted at night in order not to affect their business, while residents expect construction to be conducted in the daytime in order not to affect their rest. In normal cases, construction will be conducted in the daytime, which requires adequate communication with the affected stores.

📖 Resident in Wenshui Avenue, Jishui County (female, 31 years old)

For construction, it is best not in the evening, it will affect the rest. I live here, near the road very much, I cannot rest well at night affected only by the vehicles on the road, if you construct at that time, then I really cannot rest.

📖 Merchant Mr. Luo, Wenshui Avenue, Jishui County (male, 35 years old)

In terms of the construction duration, it is best in the evening! This is a commercial street, there are a few residents, mostly of them are stores selling decoration materials here, and there are very few people staying at night here, the construction at night will minimize the impact.

5) Compensation

Compensation should be paid for temporary land occupation and permanent LA arising from construction. In addition to timely cash compensation, some residents also accept compensation with land.

📖 Merchant, Times Square, Jingan County (male, 42 years old)

For the compensation, I have no special requirements, but it must not be ignored, then the compensation may be a serious problem. If according to my day-to day account, it is very easily faked, so I think it should be according to the area, it is a real deal, more compensation for large stores, little for small stores. Like the nearby small restaurants, it only covers a few square meters, their business benefit will not be very large, our store is very big, and the rent is more expensive, it is best for us according to the area.

📖 Village secretary Zhang Changhai, Dawan Village, Yugan County (male, 63 years old)

If it is to build wastewater pipelines, which will occupy lands, villagers will have problems with it. Once such issues are involved, there will be conflicts. If making compensation, the people still hope to get land or cash. Additionally, the people can work on site and some can be arranged temporarily.

It can be seen that local residents' comments reflect such logic: The Project is necessary and should be supported; if it is to be built, it should be built "Not In My Back Yard"; if this is inevitable, it should preferably involve neither LA nor HD; if LA or HD is inevitable, compensation must be paid timely and fully; the construction duration should be as short as possible; and fundamentally, construction quality must be ensured.

If negative impacts of construction cannot be avoided or reduced properly, high social adaptation risks may arise, and there may be conflicts between local residents and the construction agency. In view of this, adequate consultation and information disclosure should be conducted.

8.2 Investment and project sustainability risks

In consideration of the high investment and large affected area of the Project, a sustainability analysis should be conducted before implementation to see if the project benefits are sustainable, if beneficiaries can sustain project costs, and if potential sufferers could impede its construction and operation. In general, the sustainability analysis includes economic and financial analysis, technical analysis, environmental analysis, social analysis, and organizational analysis. The focus here is financial analysis.

Table 8-2 Analysis of sustainability risks of social benefits of the Project

Benefiting	Suffering
As long as reasonable charging rates and modes are applied, beneficiaries will support project operation actively.	Households affected by LA and HD suffer most from the Project. Their attitude will determine if the Project is sustainable. A rational resettlement and compensation program should be developed to win their support.

8.2.1 Project investment plan

The estimated gross investment in the Project is 1.555 billion yuan, and will be used for the following mainly: 1) lake management; 2) wastewater management; 3) MSW collection and transfer systems; 4) support for project implementation; and 5) other, such as basic contingencies and loan interests. The funding sources will be the Bank loan and local counterpart funds.

Table 8-3 Project investment plan

No.	Item	Sub-item	Gross investment										Bank loan		
			CNY (0,000)										USD (0,000 yuan)	USD (0,000 yuan)	
			Shangli	Yugan	Poyang	Fengxin	Duchang	Jishui	Jing'an	Provincial PMO	Total	Exchange rate 6.5	15,000	Percent (%)	
I	Lake management costs		1500.0	2180.0	2880.0	1833.0	1209.2	1200.0	2060.0	600.0	13462.2	2071.1	1776.4	7.4%	
1)	Construction costs		520.0	336.0	416.0	66.0	196.2	190.0	568.0		2292.2	352.6	352.6	1.5%	
2)	Equipment purchase and installation costs		400.0	1344.0	1664.0	967.0	908.0	905.0	1152.0		7340.0	1129.2	1129.2	4.7%	
3)	Other costs		580.0	500.0	800.0	800.0	105.0	105.0	340.0	600	3830.0	589.2	294.6	1.2%	
II	Wastewater management costs		0.0	16664.2	12580.5	13135.3	13920.3	13512.1	8712.2	0.0	78524.6	12080.7	8983.5	37.6%	
1	Lake rehabilitation		0.0	16664.2	12580.5	0.0	7891.1	0.0	0.0	0.0	37135.8	5713.2	4253.0	17.8%	
1)	Construction costs			15287.7	9910.0		7891.1				33088.8	5090.6	3630.4	15.2%	
2)	Equipment purchase and installation costs			1376.5	2670.5						4047.0	622.6	622.6	2.6%	
3)	Other costs			0.0							0.0	0.0		0.0%	
2	Management system improvement		0.0	0.0	0.0	13135.3	6029.2	13512.1	8712.2	0.0	41388.8	6367.5	4730.5	19.8%	
1)	Construction costs					8847.8	6029.2	13288.0	8712.2		36877.2	5673.4	4046.0	16.9%	
2)	Equipment purchase and installation costs					4287.5		162.0			4449.5	684.5	684.5	2.9%	
3)	Other costs					0.0		62.1			62.1	9.6		0.0%	
III	MSW collection and transfer systems		17722.6	761.7	10068.8	0.0	2529.2	0.0	1787.8	0.0	32870.1	5056.9	4174.2	17.5%	
1)	Construction costs		9126.0	660.0	9164.1		769.8		281.2		20001.1	3077.1	2194.4	9.2%	
2)	Equipment purchase and installation costs		8596.6	101.7	904.7		1759.4		1506.6		12869.0	1979.8	1979.8	8.3%	
3)	Other costs		0.0	0.0							0.0	0.0		0.0%	
IV	Support for project implementation		580.0	694.0	808.0	580.0	580.0	523.0	523.0	946.0	5234.0	805.2	28.3	0.1%	
1	Equipment		10.0	10.0	10.0	10.0	10.0	10.0	10.0	6	76.0	11.7	11.7		
2	Capacity building		80.0	80.0	80.0	80.0	80.0	80.0	80.0	360	920.0	141.5	16.6		
3	Project supervision		195.0	244.0	293.0	195.0	195.0	170.0	170.0	580	2042.0	314.2			

4	Project reporting		250.0	310.0	370.0	250.0	250.0	221.0	221.0		1872.0	288.0		
5	Project M&E		45.0	50.0	55.0	45.0	45.0	42.0	42.0		324.0	49.8		
V	Other (including basic contingencies)		3998.5	4410.2	5489.0	3393.5	3635.5	2335.3	2133.3	0	25395.2	3907.0	37.6	0.2%
1	Other construction costs (excl. supervision costs)		1917.3	2179.1	2649.6	1672.3	1726.4	792.7	828.8		11766.3	1810.2		
2	Basic contingencies		1691.2	1742.8	2254.3	1331.2	1454.1	1144.4	906.3		10524.3	1619.1		
3	Upfront LA costs 0.25%		32.5	41.0	48.8	32.5	32.5	28.4	28.4		244.2	37.6	37.6	
4	Commitment fee 0.25%		32.5	41.0	48.8	32.5	32.5	28.4	28.4		244.2	37.6		
5	Loan interests during construction period		325.0	406.3	487.5	325.0	390.0	341.3	341.3		2616.3	402.5		
VI	Gross investment	Construction costs	9646.0	16283.7	19490.1	8913.8	14886.3	13478.0	9561.4	0	92259.3	14193.7	10223.4	42.7%
		Equipment purchase and installation costs	8996.6	2822.2	5239.2	5254.5	2667.4	1067.0	2658.6	0	28705.5	4416.2	4416.1	18.5%
		Other costs	580.0	500.0	800.0	800.0	105.0	167.1	340.0	600	3892.1	598.8	294.6	1.2%
		Support for project implementation	580.0	694.0	808.0	580.0	580.0	523.0	523.0	946	5234.0	805.2	28.3	0.1%
		Other construction costs	1917.3	2179.1	2649.6	1672.3	1726.4	792.7	828.8	0	11766.3	1810.2	0.0	
		Contingencies	1691.2	1742.8	2254.3	1331.2	1454.1	1144.4	906.3	0	10524.3	1619.1	0.0	
		Loan interests during construction period	325.0	406.3	487.5	325.0	390.0	341.3	341.3	0	2616.3	402.5	0.0	
		Upfront LA costs	32.5	41.0	48.8	32.5	32.5	28.5	28.5		244.3	37.6	37.6	0.2%
		Commitment fee	32.5	41.0	48.8	32.5	32.5	28.5	28.5		244.3	37.6	0.0	
	Total	23801.1	24710.1	31826.3	18941.8	21874.2	17570.4	15216.2	1546	155486.0	23920.9	15000.0	62.7%	

8.2.2 Repayment capacity of the project counties

The Bank loan for the Project will be repaid from county finance and guaranteed by the provincial finance department. The repayment period will be from March 2022 to September 2042.

The county governments in the project area will repay interests on the Bank loan at an annual rate of 1.5%, and also raise counterpart funds of millions or even tens of millions of US dollars. Based on their fiscal revenue and expenditure, they are able to repay the Bank loan on schedule.

1) Shangli County: It is estimated from its fiscal revenue and expenditure in 2014, and forecasts in 2015 and afterwards using the moving average method that the annual amount of repayment is about \$1.45 million, accounting for 69% of its annual amount available for repayment, showing that this county is well capable of repaying the Bank loan on schedule.

2) Yugan County: It is estimated from its fiscal revenue and expenditure in 2014, and forecasts in 2015 and afterwards using the moving average method that the annual amount of repayment is about \$1.3 million, accounting for 60% of its annual amount available for repayment, showing that this county is well capable of repaying the Bank loan on schedule.

3) Poyang County: It is estimated from its fiscal revenue and expenditure in 2014, and forecasts in 2015 and afterwards using the moving average method that the annual amount of repayment is about \$1.56 million, accounting for 70% of its annual amount available for repayment, showing that this county is well capable of repaying the Bank loan on schedule.

4) Fengxin County: It is estimated from its fiscal revenue and expenditure in 2014, and forecasts in 2015 and afterwards using the moving average method that the annual amount of repayment is about \$1 million, accounting for 67% of its annual amount available for repayment, showing that this county is well capable of repaying the Bank loan on schedule.

5) Jishui County: It is estimated from its fiscal revenue and expenditure in 2014, and forecasts in 2015 and afterwards using the moving average method that the annual amount of repayment is about \$1.1 million, accounting for 3.1% of its annual amount available for repayment, showing that this county is well capable of repaying the Bank loan on schedule.

6) Duchang County: It is estimated from its fiscal revenue and expenditure in 2014, and forecasts in 2015 and afterwards using the moving average method that the annual amount of repayment is about \$1.1567 million, accounting for a low proportion of its annual amount available for repayment, showing that this county is well capable of repaying the Bank loan on schedule.

7) Jing'an County: It is estimated from its fiscal revenue and expenditure in 2014, and forecasts in 2015 and afterwards using the moving average method that the annual amount of repayment is about \$871,600, accounting for a low proportion of its annual amount available for repayment, showing that this county is well capable of repaying the Bank loan on schedule.

In addition, counterpart funds will be raised in multiple ways and well secured, including labor input by local residents, support from superior authorities, and county finance.

In general, the county governments in the project area are well capable of repaying the Bank loan and raising counterpart funds, and the risk of capital shortage is low.

8.2.3 Facility maintenance capacity

The Project is a long-term project that needs continual maintenance in order to function properly. Since the Project is still at the early design stage, the county governments in the project area have not developed subsequent maintenance programs. Their facility maintenance capacity is based on past facility maintenance costs and fiscal capacity.

Table 8-4 Facility maintenance costs in the project counties (unit: 0,000 yuan) (2014)

County	Wastewater treatment	MSW disposal costs	Total costs
--------	----------------------	--------------------	-------------

	costs (0,000 yuan/year)	(0,000 yuan/year)	
Shangli		2500	2500
Yugan	620	1500	2120
Poyang	690	1800	2490
Fengxin	600		600
Jishui	750		750
Duchang	150	800	850
Jing'an	550	1600	2150

In the project area, unit maintenance costs are relatively fixed, such as 100 yuan per rainwater well and 80 yuan per drain well, and a monthly pay of about 1,000 yuan per cleaner. Additional maintenance costs under the Project will be from local public finance and charges collected from local residents.

As mentioned in Chapter 7, most local residents have high ability to pay and strong willingness to pay, and can support local infrastructure construction and maintenance to some extent. However, the fundamental way of raising facility maintenance costs is to develop the local economy and improve local public finance. In view of the promising development potential of the Poyang Lake Ecological Economic Zone, this issue will be addressed gradually.

In sum, sustainability risks are less likely to arise at the construction and operation stages.

8.3 Residents' behaviors and project sustainability risks

Residents' behaviors are closely associated with the surrounding environment. Most local residents have some level of environmental awareness, but do not realize that they are also a pollution source.

It is also found that some local residents think they are responsible for neither environmental pollution nor environmental management, and perceive themselves as passive receivers. Not only the primary stakeholders think that environmental protection is the responsibility of the government, but also the project management agencies and owners hold this view. As a result, inadequate consideration may be given to the rights and obligations of the primary stakeholders in project design, implementation and management.

However, as the economy develops and society progress, most urban and rural residents are paying more and more attention environmental issues. In this context, inappropriate behaviors will be corrected.

8.4 LA and HD risks

8.4.1 Overview of LA and HD risks

LA and HD may result in income losses, and a series of prolonged, potential social, cultural and mental impacts. If the APs are not resettled properly and compensation is not paid timely, conflicts may occur. Therefore, LA and HD were minimized through design optimization at the design stage, but LA and HD risks are still inevitable: LA and HD for the Project will affect 155 villages in 27 townships/sub-districts in 7 counties in 5 cities (Pingxiang, Jiujiang, Ji'an, Yichun and Shangrao), with 231.13 mu of rural collective land acquired (including 1.5 mu of cultivated land, accounting for 0.65% of all acquired collective land), and 418.999 mu of state-owned land occupied. The Project will not involve the demolition of rural residents, but will involve temporary land occupation that affects 431 stores/enterprises with 7,471 persons indirectly. The Project will affect 1,111 persons directly. See Table 8-5.

Table 8-5 Summary of population affected by LA and HD

County	Work	Townships	Villages	Acquired collective land (mu)		Occupied state-owned land (mu)	Directly affected population		Indirectly affected stores / enterprises	
				Total	Cultivated land		HHs	Population	#	Population
Shangli	MSW collection, transfer and disposal system	5	71	102.44	0	0	102	409	0	0
Duchang	Urban sewer network improvement	1				3			53	1178
	Zoujiazui Lake ecology rehabilitation					402.3				
	MSW collection and transfer of 3 suburban towns	3	3	4.5	1.5	0	13	50	0	0
Jishui	Sewer networks of south county town and old urban area	1		0	0	3.085	0	0	156	2948
Fengxin	North urban sewer network	1				0.114			35	140
	South urban sewer network									
Jing'an	Urban sewer network reconstruction	1				3			187	3211
	Urban MSW collection and transfer	1				3	0	0	0	0
Poyang	Wastewater treatment	6	40	53.24	0		76	344	0	0
Yugan	MSW disposal	6	40	70.95	0	0	66	308	0	0
	Pipa Lake intercepting lines	1	1	0	0				0	0
	MSW transfer stations	1				4.5	0	0	0	0
Total	12	27	155	231.13	1.5	418.999	257	1111	431	7477

8.4.2 Resettlement and compensation measures for LA and HD

The county governments have fixed reasonable LA compensation rates, which include land compensation and resettlement subsidy, but exclude compensation for young crops and ground attachments, and should be followed strictly in practice. Temporarily occupied land should be restored by land users upon expiry of the occupation period; temporarily occupied land that cannot be restored should be compensated for accordingly; the period of occupation usually should not exceed two years. See Table 8-6.

Table 8-6 Entitlement matrix of population affected by LA and HD

Type of impact	APs	Compensation / resettlement policy	Compensation rates	
Permanent LA	Land users	①Acquired land will be compensated for based on its original use, and LA compensation includes land compensation and resettlement subsidy; ②Compensation for young crops will be paid to proprietors.	Shangli	Shangli Town: irrigated land 41895 yuan/mu, vegetable land 41895 yuan/mu, young crops 1197 yuan/mu Jinshan and Tongmu Towns: irrigated land 40494 yuan/mu; vegetable land 40494 yuan/mu; young crops 1191 yuan/mu Chishan, Penggao and Futian Towns, Yangqi Xiang: irrigated land 38160 yuan/mu, vegetable land 38160 yuan/mu, young crops 1192.5 yuan/mu Changping, Jiguanshan and Dongyuan Xiangs: irrigated land 36192 yuan/mu, vegetable land 36192 yuan/mu, young crops 1131 yuan/mu
			Yugan	Yuting Town: irrigated land 37400 yuan/mu, vegetable land 37400 yuan/mu, young crops 1100 yuan/mu Gubu Town, Baimaqiao, Lugang and Hongjiazui Xiangs: irrigated land 36185 yuan/mu, vegetable land 36185 yuan/mu, young crops 1096.5 yuan/mu Ruihong, Shikou, Huangjinbu and Wuni Towns, Santang, Meigang, Fenggang and Jiangbu Xiangs: irrigated land 36488 yuan/mu, vegetable land 36488 yuan/mu, young crops 1084 yuan/mu Jiulong and Yangbu Towns, Daxi, Shengeng, Tangshan,

				Dongtang and Datang Xiangs: irrigated land 32896 yuan/mu, vegetable land 32896 yuan/mu, young crops 1028 yuan/mu
			Poyang	Tuanlin and Baishazhou Xiangs: irrigated land 36788 yuan/mu, vegetable land 36788 yuan/mu, young crops 1082 yuan/mu; Gaojialing, Sishilijie and Shuanggang Towns: irrigated land 35591 yuan/mu, vegetable land 35591 yuan/mu, young crops 1078.5 yuan/mu; Zhuhu Xiang: irrigated land 34288 yuan/mu, vegetable land 34288 yuan/mu, young crops 1071.5 yuan/mu
			Fengxin	/
			Jishui	State-owned land obtained by allocation
			Duchang	Wasteland 7419.6 yuan/mu; irrigated land 37098 yuan/mu; young crops 1030.5 yuan/mu
			Jing'an	State-owned land obtained by allocation
Temporary occupation of state-owned land	Proprietors	Going through urban road excavation formalities and paying restoration costs	Yugan	Asphalt excavation: 150 yuan/m ²
			Other counties	Occupation charges exempted
Temporary land occupation	Land users	Restored to the original standard and size after completion of construction	Occupation charges exempted	
Temporary river occupation	River users		Occupation charges exempted	

8.4.3 Grievance redress mechanism

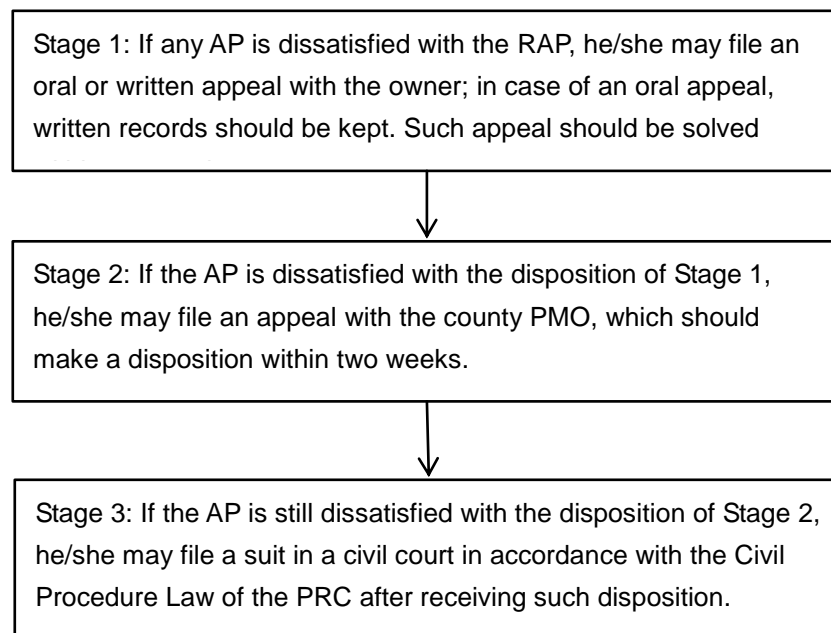


Figure 8-1 Grievance redress flowchart of the Project

A grievance redress mechanism has been established for the Project to address grievances and appeals about LA compensation, etc., and minimize LA and HD risks.

1) Appeal channels

① Provincial, municipal and county offices for letters and visits can handle ordinary appeals;

② Resettlement management agencies at different levels can handle appeals about resettlement;

③The independent resettlement M&E agency can handle appeals about infringement on the rights and interests of the APs;

④The state, provincial, municipal and county supervision, auditing, judicial and other similar departments can handle illegal acts and violations.

2) Appeal procedure

The appeal procedure of the Project is as shown above.

In general, the Project's LA and HD risks will be minor, because the Project does not involve HD, most of the occupied land is state-owned land, and a sound grievance redress mechanism has been established.

8.5 Secondary pollution risks

In the survey, local residents mentioned secondary pollution risks repeatedly. Secondary pollution refers to air, water, soil and ecological pollution that occurs during wastewater, MSW and sludge disposal.

8.5.1 Secondary pollution risks of the wastewater management component

The wastewater management component will be mostly implemented in urban areas, and its secondary pollution risks include:

- ①Pollutant leakage during wastewater treatment;
- ②Dust, noise and wastewater pollution during construction; and
- ③Soil and water pollution caused by sludge and slag produced by WWTPs

8.5.2 Secondary pollution risks of the MSW disposal component

Secondary pollution risks of the MSW disposal component include:

①Leachate, dust and noise pollution: MSW would produce such gases as CH₄, CO₂, H₂S, NH₃, SO₂ and NO_x during storage, in which CH₄ is flammable and explosive, H₂S and NH₃ are odorous, COD_{Cr}, BOD₅ and NO_x may contain pathogenic bacteria and heavy metals, and pollute surface water, groundwater and soil. During transfer, MSW may produce dust and leachate may also leak. MSW compacting and loading machines, and transfer vehicles would produce noise in daily operation, but mostly in the daytime.

②If MSW is not transferred timely, it will give rise to bacteria and insects, thereby posing health risks to nearby residents, especially women and children.

③Improper MSW storage and disposal will result in water pollution, thereby affecting aquaculture and crop cultivation, and resulting financial losses.

8.5.3 Secondary pollution risks of the lake management component

The lake management component is less likely to cause secondary pollution, but attention should still be paid to dust and noise produced during construction, and pipeline leakage that may occur during operation.

Although the Project may give rise to secondary pollution, such risks are mostly caused by improper operation and can be avoided or controlled by taking proper measures.

8.6 Subsequent management risks

In order to reduce subsequent management risks, the Social Management Plan should be developed at the preparation stage, which includes 6 steps: ①optimizing the project design; ②developing a RAP; ③developing an environmental management plan; ④developing a preferential policy for vulnerable groups; ⑤developing an information disclosure and public health education plan; and ⑥developing a community participation plan. This requires that organizational and management mechanism building from the preparation stage.

8.6.1 Organizational building in project management

To ensure the successful implementation of the Project, define the responsibilities of different agencies concerned, and coordinate major issues arising from project implementation, the Provincial Project Steering Committee (PPSC) has been established at the provincial development and reform commission.

The provincial PMO at the provincial reform and development commission has extensive experience in implementing projects financed by the World Bank and the Asian Development Bank, and is responsible specifically for project implementation and construction coordination.

Project leading groups have been established in the project counties, headed by county leaders, with members from functional departments, responsible for organizational coordination in project implementation. The county PMOs thereunder are responsible specifically for project implementation, staff training, and construction coordination.

The specific responsibilities of the county PMOs include:

- 1) Making project planning;
- 2) Drafting annual plans and budgets;
- 3) Reviewing and approving work plans and project costs;
- 4) Supervising material procurement;
- 5) Supervising and inspecting project construction;
- 6) Reviewing withdrawal applications, and conducting financial supervision;
- 7) Supervising construction congress, and establishing a M&E system;
- 8) Preparing progress reports;
- 9) Conducting social, economic and ecological surveys, and monitoring project impacts; and
- 10) Reporting implementation progress to county project leading groups, and completing project evaluation and completion reports

8.6.2 Exploration of management mechanism—river administrator system

A “river administrator system” has been established at the provincial, municipal, county, township and village levels in Jiangxi Province, and is applied to all inland rivers and lakes, where provincial, municipal and county leaders serve as river administrators to perform all-round lake management responsibilities, conserve water resources, prevent water pollution, and maintain water ecology.

This well-defined, long-term water environment management mechanism has been practiced extensively in Jiangxi Province, and played an effective role in unified river and lake management planning, water resources management, water source conservation, integrated water pollution control, water quality monitoring, lake ecology protection and rehabilitation, and institutional capacity building.

This system will be applied to the subsequent management of the Project, which will avoid risks of disorderly and inefficient subsequent management.

8.7 Project risk monitoring

In view of the above social risks, the provincial PMO will appoint an independent M&E agency to conduct external M&E at the construction stage (2017-2022), which will prepare an M&E report annually. See Table 8-7.

Table 8-7 Scope and indicators of project risk monitoring

Type of risk	Actions	Timing	Agencies responsible	Assisted by	Action mode	Monitoring indicators
Social adaptation risks	<ul style="list-style-type: none"> ①Setting up visible warning signs where potential risks exist; ②Setting up fences and warning signs where traffic is affected by construction; ③Organizing a public security patrol to maintain public order during construction; ④Involving local residents in project construction, especially the poor and women 	Construction stage	Owners, construction agency	PMOs, township governments, village committees	Implementing the above actions	<ul style="list-style-type: none"> ①Number and details of complaints about construction impacts ②Number of local residents involved in construction, percentage of poor residents, remuneration
Investment and project sustainability risks	<ul style="list-style-type: none"> ①Developing the project investment plan ②Developing financial management measures ③Developing the procurement and construction plans 	Whole project cycle	Provincial and county PMOs	Owners	Implementing the above actions	<ul style="list-style-type: none"> ①Availability of the Bank loan and counterpart funds ②Disbursement of funds ③Timely completion and reimbursement
Residents' behaviors and project sustainability risks	<ul style="list-style-type: none"> ①Strengthening training on state and local environmental regulations for the public; ②Offering training on water conservation, wastewater treatment, pollution control, disease prevention, and waste recycling; ③Helping local residents realize impacts of their behaviors on the surrounding environment 	Whole project cycle	Owners, EPBs	Township governments, village committees	Implementing the Environmental Management Plan	A series of training arrangements in the Environmental Management Plan
LA and HD risks	Preparing the RAP and the terms of reference for M&E	Preparation and implementation stages	Owners, PMOs	Resettlement consulting agency	Implementing the RAP	Monitoring indicators specified in the RAP
Secondary pollution risks	<ul style="list-style-type: none"> ①Monitoring water, soil and other environmental indicators annually, and issuing an environmental monitoring bulletin; ②Using advanced treatment and prevention techniques to evade potential negative environmental impacts 	Whole project cycle	EPBs	Construction bureaus, township governments, village committees	Optimizing the design, and monitoring the environment	Monitoring indicators specified in annual environmental monitoring reports and the feasibility study report
Subsequent management risks	Strengthening institutional capacity building through training	Monitoring stage	Provincial and county PMOs	Owners		<ul style="list-style-type: none"> ①Scope of training ②Men-times trained ③Training costs

Chapter 9 Community participation and consultation

9.1 Community participation mechanism planning

9.1.1 Community participation framework

The Bank defines “participation” as an active process of stakeholders. This requires that all stakeholders and their relations are identified, and considered at all stages of the Project. See Table 9-1.

Table 9-1 Community participation framework

No.	Stage	Step	Role of primary stakeholders	Role of the government	Role of experts	Effect
		Role	Decision executor	Guarantor	Supporter	Unity of roles
1	Preparation	Issue analysis and goal setting	Analyzing issues and causes	Administrative, policy and financial support	Helping primary stakeholders find out issues and causes	Identifying real issues accurately
2		Project scope and framework	Proposing own needs and establishing an issue-solving framework	Studying if such framework can be supported	Giving technically feasible opinions to the government and primary stakeholders	Combining project scope with needs of primary stakeholders
3		Project planning	Preparing a project activity plan and fixing persons responsible	Reviewing the plan and government appropriation	Developing the plan together with primary stakeholders	Ensuring the plan is suited to primary stakeholders
4	Implementation	Project implementation	Establishing an organizational system	Providing conditions for implementation	Offering technical support	Ensuring that beneficiaries are responsible for themselves
5	Monitoring	M&E	Monitoring and evaluating their activities regularly	Participating in M&E	Analyzing and reporting M&E results	Learning activity progress timely
6		Final evaluation	Evaluating final effects of internal and external inputs	Participating in evaluation	Participating in evaluation	Evaluating if beneficiaries have benefited

The above 6 steps will run through all stages of the Project.

9.1.2 Community participation principles

During project design, implementation and monitoring, the following principles should be followed to ensure that all stakeholders receive relevant information timely, and have equal opportunities to express opinions and suggestions:

- 1) Disclose project information to the primary stakeholders timely throughout the project cycle by means of meeting, slogan, TV, broadcast, etc.
- 2) Offer the following training to the primary stakeholders: ①participatory training on wastewater treatment, MSW transfer, environmental protection and ecological rehabilitation; ②training on environmental protection knowledge, and environmental impacts of behaviors; and ③training on techniques used in the Project.
- 3) Involve the primary stakeholders in project construction.
- 4) Give play to community officials and organizations in project implementation, including publicity, training, mobilization, communication, coordination and subsequent management.

9.2 Current situation of community participation

9.2.1 Scope

In order to build the road construction and improvement subprojects on a reliable basis, protect the lawful rights and interests of local residents, reduce grievances and disputes, improve the RAP, and give full play to the benefits of these subprojects, it is very important to conduct public participation and consultation at the preparation and implementation stages. The community participation activities at the preparation stage are shown in Table 9-2.

Table 9-2 Scope of community participation at the preparation stage

No.	Activity	Details	Mode	Participants	Agencies responsible	Remarks
1	Project publicity	①Communicating the importance and necessity of the Project, and collecting public opinions and suggestions; ②Communicating important project information timely; ③Giving publicity on the increase of charges from the preparation stage	Poster, brochure, radio, TV, public meeting, slogan, leaflet	①All community members ②Owners ③County PMOs	County PMOs, owners	Assisted by local agencies concerned, township governments and village committees
2	Participatory AP analysis	①Identifying all stakeholders ②Identifying the Project's positive and negative impacts	Community /village congress	①Community reps. (incl. reps. of vulnerable groups)		Assisted by the task force
3	Participatory issue analysis	①Analyzing environmental issues, and impacts on community and personal development; ②Helping residents analyze how their behaviors are correlated with pollution	Community /village congress	②Village committees ③PMOs		Assisted by the task force
4	Participatory demand analysis	①Identifying needs of stakeholders, and analyzing gaps between such needs and the project design	Community /village congress			Assisted by the task force
5	Issue feedback	①Evaluating the project design; ②Learning primary stakeholders' expectations for the Project	Community /village congress			Assisted by the task force
6	Ability and willingness to pay	①Analyzing issues in charging ②Analyzing affordability; ③Giving suggestions on charging	Community /village congress			Assisted by the task force
7	Training	①Strengthening training on state and local environmental regulations for the public; ②Offering training on wastewater treatment, MSW separation and wetland conservation; ③Giving publicity on wastewater treatment and MSW disposal to eliminate local residents' worries	①Community meeting ②Poster, brochure, radio, TV, slogan, leaflet	①All community members ②Owners ③PMOs ④EPBs ⑤Village committees		Assisted by local agencies concerned, township governments and village committees

To date, most community participation activities have been implemented, as detailed below:

- 1) Project publicity has begun through local media and official websites since October 2014.

However, since the Project was still at the design stage at the time of this report, detailed project information was unavailable yet.

Urban Management Bureau, Fengxin County, December 5, 2015

For the project publicity, the county government's publicity department should be responsible for the contact with the media, and each of the relevant departments will hold a mobilization meeting, then various departments will promote it to a great extent.

Development and Reform Commission, Yugan County, December 9, 2015

We plan to make a promotion bar in a prominent location around Pipa Lake through Yugan County government website to disclose the design scheme and ask advice from others. We will set up first, second and third prizes and encourage and reward better one.

Environmental Protection Bureau, Poyang County, December 7, 2015

We will do the publicity widely and publicize it with “the construction of a new village” as the theme. Village cleanness is a very important element, the township government should conduct propaganda to mobilize the awareness of farmers.

Poyang Lake Management Office, Duchang County, December 7, 2015

Educate people through media and school, give lectures in organizations, distribute brochures, and issue some measures, with the focus being to make every villager familiar with this project, draw their attention, and further enhance their environmental protection awareness.

- 2) Participatory AP analysis: See Chapters 5 and 6.
- 3) Participatory issue analysis: See Chapter 2.
- 4) Participatory demand analysis: See Chapter 5.
- 5) Issue feedback: See Chapters 4, 8 and 9.
- 6) Survey on willingness and ability to pay: See Chapter 7.

7) Training: In the project area, training on environmental monitoring, water conservation, cancer prevention for women, MSW separation, etc. has been offered to local residents to help build up environmental awareness and correct their environmental behaviors.

In addition, the PMOs will offer relevant training to improve the capacity of the project management staff. At the preparation and implementation stages, the provincial PMO will appoint experts to train the staff on relevant policies and regulations, Bank requirements, success experience from other domestic projects, etc.

9.2.2 Organizational participation

During the SA, agencies concerned participated actively in FGDs and interviews. However, except development and reform commissions, and PMOs, most of them have just heard of the Project but know little about it.

These agencies have proposed many pertinent opinions in FGDs and interviews based on their rich experience, which will serve as an effective basis for project design and revision.

Table 9-3 Organizational optimization opinions during SA

County	Component	Revision opinion	Reason	Agency
Shangli	MSW disposal	Selecting sites of MSW transfer stations carefully	Villagers want MSW collection sites to be far away from their homes, and there have been complaints in the county.	Development and reform commission
		Further reviewing the necessity of engineering measures	It is costly and troublesome to build all MSW transfer stations in the design.	EPB
Yugan	Wastewater management	Ensuring sewer line connection in each community	Sewer line connection is not available on some roads in the current construction scheme.	EPB
		Laying a sewer line under the river dam	Direct discharge to the Pipa Lake should be avoided.	EIA agency
	MSW disposal	Setting up MSW collection sites first	The current number of MSW collection sites in Yugan County is insufficient.	PMO

	Lake management	None		
Poyang	Wastewater management	Avoiding discharging wastewater into Zhuhu Lake	Zhuhu Lake should be protected from wastewater pollution to ensure the quality of drinking water.	EPB
	MSW disposal	Adjusting the MSW transfer route	The current route runs through villages, and MSW spills and odors will increase management costs.	Urban administration bureau
	Lake management	Ensuring the height of the work exceeds 25m for flood storage	The flood storage capacity of 6 townships should be met.	Zhuhu Lake Administration Office
Fengxin	Wastewater management	Excluding Huangxi New Area from the Project	Huangxi New Area is underdeveloped, where wastewater treatment facilities may be left unused after completion.	Bank experts
Jishui	Wastewater management	Replacing the culvert material	A more impermeable material than reinforced concrete should be used for rainwater pipes.	Land and resources bureau
		Replacing open ditches with concealed ones	Concealed ditches cannot be blocked easily.	Village committee
Duchang	Wastewater management	Connecting every house to the sewer network	The sewer network of the county town needs improvement.	Bank experts
	MSW disposal	Broadening the road beside the MSW transfer station in Beishan Xiang	This road is too narrow (4m), and should be preferably broadened to 6.5m for the easy turning of MSW transfer vehicles.	Bank experts
		Providing financial support for cleaning through the Project	MSW transfer and disposal costs are currently borne by villagers, but should be eventually borne by the government.	Village committee
		Adjusting MSW transfer equipment	It is enough to provide each village with one MSW transfer vehicle. This will also be convenient for unified management and maintenance.	
	Bringing the MSW transfer station in Wangdun Xiang closer to the residential area	The current site is inconvenient in traffic.	FS agency	
Lake management	Minimizing LA and HD	LA and HD risks should be avoided where possible.	PMO	
Jing'an	Wastewater management	None		
	MSW disposal	Relocating the two MSW collection stations in the south	It is infeasible to build MSW collection stations here.	Land and resources bureau
		Renovating existing environmental sanitation facilities and training management staff	Existing MSW collection stations are simple and should be renovated to function properly. Existing transfer vehicles and equipment should be upgraded.	EBP
Separating MSW from the beginning	An incentive mechanism should be established to encourage MSW separation.	EBP		

It should be noted that the above revision opinions are preliminary only, but will be used as a basis for the feasibility study agency to adjust the project design.



Figure 9-1 Site selection by the head of Duchang County in Wangdun Xiang

Figure 9-2 Organizational FGD in Jishui County



Figure 9-3 Field visit in Shangli County

Figure 9-4 Field visit in Fengxin County

Figure 9-5 Interview with the Shuangxi Town Government in Jing'an County



Figure 9-6 Project preparation kickoff meeting

Figure 9-7 Expert FGD

9.2.3 Residents' participation

Residents' participation includes direct and indirect participation. During the SA, residents' participation was learned based on their awareness and recognition of the Project by means of interview and questionnaire survey.

According to interviews, most residents are unaware of the Project or have just heard of it, and generally support the Project except for the MSW disposal component, as verified by the data of the questionnaire survey.

9.2.3.1 Residents' awareness of the Project

60.2% of the respondents are aware of the Project, where the awareness of the wastewater management component is the highest, and that of the lake management component is the lowest. This is possibly because compared to lake management, local residents are more concerned about wastewater treatment and MSW disposal in daily lives. In addition, 39.8% of the respondents had never heard of the Project before the survey. This shows that project publicity should be strengthened.

It should be noted that door-to-door publicity by community/village officials is much more effective than publicity by mass media, especially in relatively isolated rural areas. This will help

truly meet local residents' needs and suit local conditions. In this process, community/village committees should be given full play in communicating information and collecting public opinions.

Table 9-4 Residents' awareness of the Project (frequency + percentage)

Component	Aware	Unaware	Total
Wastewater management	97 (64.2)	54 (35.8)	151
MSW disposal	92 (58.4)	65 (41.4)	157
Lake management	54 (56.3)	42 (43.8)	96
Total	243 (60.2)	161 (39.8)	404

Source: SA questionnaire survey

📖 Jinghua Village and Shuanggang Village, Poyang County

We plan to hold a villager group meeting so as to tell you about this project and mobilize the people to improve their environmental awareness. Our villagers are positive in attending village meetings, most of them are usually women, the elderly and households enjoying the minimum living guarantee and the adult men often work out of the village.

📖 Hushan Village, Taolin Township, Poyang County

The village level matter should be decided by the villager group and the village committee often asks advices from the people. If our villagers have any questions, we often give a notice through telephone.

📖 Hengshui Village, Jinshan Town, Shangli County

During the project implementation, we will organize the representative assembly of villagers for the project content so as to tell everyone about the advantages and disadvantages of the project clearly, the villagers should take a vote by a show of hands.

9.2.3.2 Residents' recognition of the Project

47.8% of the respondents think the Project is necessary, 27.9% don't care, and 24.3% think the Project is unnecessary. Local residents' overall recognition of the Project is yet to be improved. In particular, only 18.5% of the respondents recognize the MSW disposal component, because they worry that MSW transfer stations may pollute the surrounding environment.

Table 9-5 Residents' recognition of the Project (frequency + percentage)

Component	Necessary	Don't care	Unnecessary	Total
Wastewater management	103 (68.2)	22 (14.6)	26 (17.2)	151
MSW disposal	29 (18.5)	75 (47.8)	53 (33.8)	157
Lake management	61 (63.5)	16 (16.7)	19 (19.8)	96
Total	193 (47.8)	113 (27.9)	98 (24.3)	404

Source: SA questionnaire survey

📖 Mrs. Zou, Shuangxi Village, Shuangxi Town, Jingan County (female, 46 years old)

It is not proper, the MSW transfer station is far away from our home. We do not want to build this project, we hope you could build the wastewater pipe here, you see no one would dare to eat fruit along the water to the orange tree.

Mr. Jiang, Yanggang Village, Wangdun Township, Duchang County (male, 63 years old)

Everyone don't want it, but it will be located in our village finally, I don't want to say this thing. The key is that the establishment of the MAW station also occupied few mu of land in our village, someone will commence the construction if the money is in place, but I am not willing to build it, I would rather not to get the money.

Due to the NIMBY effect, most residents object the MSW disposal component that involves the construction of MSW transfer stations mainly. This effect is attributed to the lack of understanding. In the survey, many residents, especially rural residents, regarded MSW transfer stations as dumping sites. After the researchers explained to them that MSW wouldn't be burned or stored at these stations, but would be transferred daily, most of them could accept. Therefore, the PMOs should strengthen publicity in this respect.

Wang Huazhi, Jinghua Village, Shuanggang Township, Poyang County (female, 59 years old)

Will there be such MSW transfer station in large city? If so, I will not be worried about it, the project which can be built in large cities should be cleaned up. If our lives become better, we will be willing to pay attention to the environmental protection.

9.2.4 Suggestions on improving community participation

Community project management teams should be established to give publicity on environmental protection, MSW reduction, water conservation, etc., thereby improving residents' environmental awareness and behaviors, and making them realize the necessity and importance of the Project. Such teams should have the following responsibilities:

- 1) Giving publicity on domestic laws and regulations on environmental protection;
- 2) Assisting in disclosing project information;
- 3) Giving publicity and education on MSW disposal, wastewater treatment, wetland conservation, etc. regularly;
- 4) Offering suitable jobs under the Project to local residents, especially women, the poor and other vulnerable groups, and handling employment conflicts; and
- 5) Giving advice on local environmental behaviors and educational activities.

9.3 Community participation plan (medium and late stages)

9.3.1 Community participation at the implementation stage

At the implementation stage (2017-2022), community subsequent management teams will be organized, local residents encouraged to participate in project construction, and publicity on additional charges conducted. See Table 9-6.

9.3.2 Community participation at the monitoring stage

At the monitoring stage, the appeal channels must be kept unobstructed, including face-to-face, hotline, online, etc. On the other hand, construction quality should be tested in a professional manner, and problems solved timely.

Table 9-6 Community participation at the implementation stage

No.	Activity	Details	Mode	Participants	Agencies responsible	Remarks
1	Establishing community project management teams	offering training, maintaining the public order of the construction site, coordinating relations among different parties, reflecting public opinions, etc.	①Community meeting ②Community congress ③Meeting of community project management team (incl. reps. of vulnerable groups)	①All community members ②Community committees ③Owners ④PMOs ⑤Community project management teams	County PMOs, owners, community committees, community project management teams	
2	Training	①Strengthening training on state and local environmental regulations for the public; ②Offering training on wastewater treatment, MSW separation and wetland conservation; ③Giving publicity on wastewater treatment and MSW disposal to eliminate local residents' worries ④Offering vocational skills training to LEFs, women and the poor, so that they can participate in project construction and earn income	①Community meeting ②Poster, brochure, radio, TV, slogan, leaflet Training of special groups	①All community members ②Owners ③PMOs ④EPBs ⑤Community project management teams ①LEFs; ②women; ③the poor; ④owners; ⑤PMOs; ⑥labor and social security bureaus ⑦civil affairs bureaus ⑥community project management teams		County PMOs, price control bureaus
3	Public hearing on water rate	①Holding a public hearing with representatives of citizens to determine the rate adjustment scheme and the new rate	Public hearing	①Reps. of community members, including vulnerable groups; ②owners; ③PMOs; ④price control bureaus	County PMOs, price control bureaus	
	Public hearing on MSW disposal rate	①Holding a public hearing with representatives of citizens to determine the rate adjustment scheme and the new rate	Public hearing	①Reps. of community members, including vulnerable groups; ②owners; ③PMOs; ④price control bureaus		
4	Project construction	①Determining jobs generated by the Project; ②Determining the selection criteria of construction participants; ④Determining their remuneration; ⑤Offering skills and safety training to construction participants; ⑥Participating in project construction	①Community meeting ②Community congress ③Participation in project construction	①Residents involved in construction, including APs, women and the poor; ②PMOs; ③owners; ④construction agency; ⑤community project management teams	PMOs, owners, construction agency, community project management teams	

Table 9-7 Community participation at the monitoring stage

No.	Activity	Details	Mode	Participants	Agencies responsible
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1	Community project monitoring	①Conducting regular environmental monitoring (monthly); ②Monitoring livelihood restoration (monthly); ③Monitoring natural environment rehabilitation (monthly)	①Community meeting ②Community congress ③Community project monitoring teams (incl. reps. of vulnerable groups)	①All community members ②Community committees ③Owners ④PMOs ⑤Community project monitoring teams	PMOs, owners, community project monitoring teams
2	Training	①Offering M&E skills training (twice quarterly)	Training of community project monitoring teams	①Community project monitoring teams; ②PMOs; ③owners	
3	Grievance redress	①Issuing the Appeal Suggestion Form to each affected village group for villagers to give suggestions; ②Setting up appeal hotlines at the county PMOs; ③Collecting comments and suggestions of local residents at any time (by community project management teams)	Appeal Suggestion Form, appeal hotline	①Community project monitoring teams; ②all community members; ③PMOs and owners	Community project monitoring teams, PMOs

Chapter 10 Conclusions, Suggestions and Evaluation

According to the survey, the task force summarizes the Project as follows:

10.1 Conclusions

The main conclusions of this report are as follows:

- 1) The Project has great economic and social benefits, such as promoting local ecological improvement, and economic and social development actively, and improving public health;
- 2) Most local residents will benefit directly from the Project.
- 3) Vulnerable groups will also benefit directly from the Project.
- 4) The components are highly suited to local conditions and customs.
- 5) A project management system has been well established.

In the project counties, similar environmental projects have been implemented, and the PMO staff has extensive project management experience.

10.2 Suggestions

In order to evade potential risks, we can optimize the project design, and consult with the stakeholders before, during and after construction. In view of this, the task force proposes the following pertinent suggestions:

10.2.1 Overall suggestions

- 1) Optimizing the project design

Minimize LA and HD in the project design, and take advanced environmental protection measures to avoid potential secondary pollution.

- 2) Conducting participatory activities

Involve the primary stakeholders in project design, implementation, management and monitoring under a participation outline developed by the owners, PMOs and task force jointly.

- 3) Offering environmental and public health education

Offer training on state and local environmental regulations for the public, water conservation, wastewater treatment, pollution control, disease prevention, and waste recycling, and help local residents realize impacts of their behaviors on the surrounding environment.

- 4) Preparing a rational RAP

A rational RAP will be prepared through consultation with the APs to ensure that their living standard is at least not reduced as a result of the Project.

- 5) Offering jobs

Offer jobs to APs, urban and rural poor residents, and women, so that they can participate in the Project.

- 6) Developing a preferential policy for the poor

Develop a preferential policy for the poor on the basis of public hearing.

- 7) Ensuring safety and convenience during construction

Schedule construction in full consideration of local residents' needs and habits.

- 8) Institutional capacity building

Strengthen training on the Bank's social safeguard policies in order to implement the Project better.

- 9) Establishing a subsequent management mechanism

Involve local residents in subsequent project management, establish community subsequent management teams on the basis of community project management teams, and strengthen environmental education for local residents to ensure project sustainability.

10.2.2 Suggestions for components

1) Wastewater management component

① Since the wastewater management component is implemented in urban areas mainly, its construction period should be minimized to reduce impacts on nearby stores and residents;
② Wastewater should be collected from sources where possible; ③ Drainage works should be constructed with high quality and durability.

2) MSW disposal component

① Due to the NIMBY effect, MSW collection, transfer and disposal facilities should be kept away from residential areas where possible, but not too far; ② Financial support should be granted for the construction of rural MSW collection and transfer systems; ③ MSW should be disposed of properly to avoid leakage and pollution.

3) Lake management component

① Lakeside farmland should be converted into wetlands in consultation with farmers;
② Strengthen lake management through non-engineering measures, including the promulgation of a code for economic behavior in lake areas; ③ Synchronize ecological protection with economic development by technical means.

10.3 Necessity of SA

In order to realize the project objectives, it is necessary to conduct SA at the preparation stage. The necessity of the SA is shown in the following aspects:

1) By learning the local environmental infrastructure, we can identify its weaknesses and lay a foundation for future improvement;

2) By learning local residents' bad behaviors, we can strengthen pertinent publicity and training;

3) By identifying the stakeholders, we can pay more attention to needs of vulnerable groups to eliminate potential conflicts;

4) By analyzing the Project's positive and negative impacts, we can have a more comprehensive understand of the Project;

5) By learning local residents' willingness and ability to pay, we can develop a preferential policy for the poor;

6) By learning the current situation of vulnerable groups, we can offer more jobs and training opportunities to them;

7) By analyzing the Project's potential risks, we can take preventive measures before construction to ensure successful project implementation;

8) By learning the current situation of community participation, we can take improvement measures accordingly.

10.3.1 Impacts on engineering measures

In view of the NIMBY effect as mentioned frequently during the SA, the construction of MSW disposal facilities in residential and ecologically vulnerable areas should be avoided where possible, and LA and HD minimized. The following engineering measures will be taken in 4 project counties:

1) In Shangli County, it was formerly planned to construct MSW collection and transfer systems in 10 townships in the Zhuhu Lake basin, but construction has now been reduced to Changping Xiang, Futian Town, Penggao Town, Dongyuan Xiang, Chishan Town and Yangqi Xiang only, because the county government has applied for special funds for the other 4 townships, thereby reducing project risks.

2) In Poyang County, the Project will affect 183 villages other than 40 villages near Zhuhu

Lake as formerly planned, because the formerly planned solar MSW disposal plant that may cause secondary pollution has been cancelled.

3) In Jing'an County, it was formerly planned to construct 2 and 3 MSW collection stations in the north and south areas respectively, but they are now changed to MSW transfer stations due to tight land supply.

4) In Yugan County, no new MSW transfer station will be constructed, because it involves high investment and operating costs, and is likely to cause conflicts with nearby residents. Instead, the existing MSW transfer station will be reconstructed.

In addition, Huangxi New Area in Fengxin County has been excluded from the Project.

10.3.1 Impacts on non-engineering measures

Non-engineering measures will focus on the following: 1) The poor should be exempted wholly or partly from relevant charges, and provided with jobs where possible; 2) The rights of information and participation of the stakeholders should be respected at whatever stage of the Project; and 3) The stakeholders' needs for construction should be met where possible. Only in this way can the Project be implemented successfully.

Appendixes

Appendix 1: SA Questionnaire

Appendix 2: Public Participation Records

1. Interview minutes of Duchang County

I. Government FGD (14:00-16:30, December 7)

Hosted by: Development and Reform Commission: Dean Wu: Panhu Office: Dean Huang

(I) Land acquisition and demolishing part [Land and Resources Bureau]

1. The land for the flood interception tube and wastewater interception tube near Furong Mountain Avenue is for urban landscaping.

2. Land project reporting and approval process.....

3. The land for MSW (municipal solid MSW) transfer stations in the three Xiangs is for permanent construction (permanent land acquisition from villagers), with an area of 1000 square meters for each one (for example, the station site in Dashu Xiang is in the dry land in the north of the township police station). In respect of the land for MSW transfer station, the site selection should consider the advice from the land and resources bureau.

4. In respect of the compensation policy for the land acquisition, the province has issued 2015 No.81 document (GF ZI) and the township has issues new policies.37098 yuan/mu.

(II) Environmental protection part [Environmental Sanitation Office: Head Huang]

The township MSW (municipal solid MSW) is borne by Rural Work Sector in charge of coordinating the new rural construction. Urban MSW is borne by Environmental Sanitation Office.

The county has 13 MSW transfer stations currently, of which there are 11 horizontal compression stations and the remaining two are uncompressed.

The county is currently taking MSW landfill, with an annual landfill capacity of 50,000 tons and landfill cost of about 10 yuan / ton.

The county is building a MSW treatment plant which is expected to be put into operation next year, with an annual treatment capacity scale of 300 tons and a expected MSW treatment cost of 60 yuan / ton, the treatment charge will be made up by the county according to the 200 tons daily as a minimum guarantee, if more than 200 tons, it will be treated according to the actual treatment capacity.

Currently, the daily capacity of MSW in the county is 130 tons, about 1 kg per capita.

Currently, there are 329 environmental sanitation workers in the county, including 37 regular workers and 19 retired workers, whose wage is about 40,000 / year and annual wage is 15 000 / year, the finance sector of the county gives 7 million yuan every year to the environmental sanitation workers, barely enough to pay for their wages. The management scope of each environmental sanitation worker is 5,600 square meters.

In other aspects, the county has 20 transport vehicles, requiring at least 100 million yuan as annual fuel charge and maintenance charge, and each transfer station also requires 20,000 yuan / year as the operation and maintenance charge.

About MSW disposal charges, the county has not yet treated it, but only charges from some stores, ranging from 60 to 120 yuan, the specific contents can be seen in the county files.

It is difficult for the finance sector of the county to build a MSW transfer station, which will require more than 200 million; it may be cheap on the market, but so expensive for us.

The county government gives 600,000 yuan to some towns in order to purchase trash bin, environmental sanitation equipment, three towns belonging to the World Bank Projects are not included (now only partially in place).

II. Along Zoujiazui Lake (In the morning on December 8)

The occupied wetland beside in the lakeside should be restored, of which the vegetable fields and lands should be leveled, thus one year's crop compensation should be given; The pipeline

construction will affect some residents in the three villages, and the temporary land compensation should be given to them, but the standard has not been determined.

Question: Do residents agree to lay the flood interception pipe and wastewater interception pipe? Answer (Dean Huang): Do not worry about it, the term of the county leadership groups will be expired in June next year, the new leadership will advance this project, our county is so poor that everyone will treat this one or two hundred million yuan project very seriously.

Design unit: When laying pipelines along the lake, the nearby three village may permanently and temporarily occupy farmland and road, the downstream villages may even involve in house demolition. (Project Management Office's advice: Put best effort to avoid house demolition and permanent land acquisition, don't make it too complicated.)

III. MSW collection and transfer in Beishan Xiang (In the morning on December 8)

Du Fangqing (town secretary, 13879219158)

1. MSW transfer station site selection

The MSW station is located in Bachuantang Village, Beishan Xiang, covering an area of 2 mu; It is mainly grass land and belongs to four villagers who have agreed to sell the land.(Compensation standard?)

Expert advice: The MSW station is not close to the road, the road up towards to the station is 260 meters long and only 4 meters wide, so narrower, it is best to be widened to 6.5 meters, because the MSW transfer vehicle is 2.5 m, enough space must be provided for backing.

- Secretary Du's feedback: Road can be widened, but it will affect the nearby farmland.

[Summary] This station is embedded inside the mountain and inaccessible; the road is very narrow. But only wasteland will be occupied, there would be no dispute with the villagers.

2. FGD of Yupu and Shaojiafan Villages in Beishan Xiang

Participants: Village secretary Qin (main interviewed person), dean Tan, deputy dean Shao, the former villager head and several villagers.

(1) Village introduction

The village had carried out the new rural construction, there are 45 households in the village now, whose houses are concentrated in four rows; About 180 people

(2) Trash bins and MSW ponds in the village.

Question: The trash binds are very clean and very new near the door of the ancestral temple, has it been taken out just soon?

No, more than 10 days, a wedding was held in the village two days before, the bin was cleaned at that time. The MSW will be poured to the MSW pond every day, and there are two MSW ponds in the village, on each end of the village.

The township requires a trash bin if there are 15 households or below in a natural village; A MSW pond should be built if there are more than 15 households; Two MSW ponds should be built if there are more than 50 households;

The MSW pond in the village was built by themselves at their own expense (the money and labor were from the villagers), and a total of around 3,000 yuan was spent for the two MSW ponds. Expert advice: We recommend that the MSW ponds should be repaired and treated by sub-grids, the harmful, harmless, flammable and non-flammable ones should be separated; The current incineration will produce air pollution affirmatively.

(3) MSW collection in the village MSW collection

The MSW is not thrown at the gates in the village, each household will prepare a small trash bin (mostly are recycling trash bin), most people will pour them to the MSW ponds directly, and a small part will be poured into the large trash bin near the ancestral temple.

In case of no weddings and funerals, one household (4-5 people) in the village would pour a bin of MSW one day, about 2-3kg. For example, in the household of the former village head, it will be 2 times a day if his child is at home, but one time two days if his child is not at home.

(4) MSW category in the village

Villager's home: Recyclable MSW should be picked up; Those that can be burnt should be poured to the hearth and burnt; The rest should be poured to the MSW pond.

Category in the village: ① Hazardous MSW should be easily sealed or discharged (such as toilet MSW); ② The recyclable MSW should be collected and sold (someone will recycle them to the village); ③ Burnable and useless MSW should be burnt; ④ The residues that cannot be burnt should be transported and buried in the valley.

(5) MSW transfer station in the village

The village often hires vehicles (specifically engaged in the transport, not professional MSW transport vehicle) to transport the MSW from the village to the township collection point, once a month (50 yuan, 4 vehicles), with an annual charge of about 2,000 yuan. Two thousand yuan freight forwarding by the villagers refuse voluntary funding.

Secretary Qin's advice: The most important thing in the MSW treatment is to rely on villagers, especially our grassroots towns and villages.

Expert advice: The World Bank can use this project to help transport MSW in the village, but the collection work should be resolved voluntarily.

Design unit's advice: The transfer scheme is that each administrative village will be equipped with two MSW transfer vehicles which can directly transport the MSW to the county. There should not be too many MSW vehicles equipped in each village, because the maintenance charge is also expensive, two vehicles will be given in total, one for spare. (Note: This advice is modified in the following)

Villagers: A small trash bin should be distributed to each household, they are very glad to receive it. (However, the World Bank experts and research institutes are worried that the villages may not use the trash bin after giving them, but for other purposes, such as containing rice and vegetables, finally, it may lead to only spending money, but the effect may not be reached.)

(6) MSW treatment in the village

Two villagers are in charge of burning the MSW in the pond and cleaning up the residues (once a week, with a wage of 1000 yuan per year, a total of two thousand yuan for two persons). There are no special funds to protect two villagers' wage in the village committee, but each household is not forced to pay much money, because the villagers have no money, and no coin will be collected in such way. Now our village begin to collect per capita MSW charge: 10 yuan / person / year (the implementation standard in the county is 5 yuan / household / month, 60 yuan a year), but the money cannot be collected completely: On the one hand, there are too many people working out, they are not living in the village, the MSW may be generated by them when they are at home, it is unreasonable to collect the same charges with the resident population from them, and they are often not in the village, the charges cannot be collected in place; On the other hand, someone may create a lot of MSW, someone may create a little per day, if the same charge is collected, some people will be complained, so at last, only a little money can only be collected, that is it is difficult to enforce the existing standard. Therefore, this work can only be supported by the young men working out who will voluntarily give money to the village currently when they come back in the Spring Festival holidays, there are many people working out.

Secretary Qin's advice: The MSW transfer station and treatment charges in the village are currently depending on raising funds from the villagers, but it should be resolved by the government

finally.

Dean Du's advice: In the countryside now, if the monthly salary of cleaners is less than 800 yuan, no one is willing to do it. Now, the wage of two villagers in Shaojiafan Village is very low, almost equivalent to be a volunteer. And two cleaners are not equipped with devices, if they are equipped with dray / tricycle, broom, sprinkler and a set of clothing, around 2000 will be required, four thousand yuan for two people, we have no such money.

Expert advice: This charge can be included into the World Bank Project.

(7) Technical problems for MSW transfer vehicle

The design unit plans to give two MSW vehicles to each administrative village, one vehicle for each person. It requires that the driver must be able to operate the MSW transfer vehicle with a driver's license.

Expert advice: We recommend to include the transfer work under the unified management of the township environmental sanitation office, the cleaners are borne by the village, after all, the MSW vehicle repair and maintenance requires a certain technology, the village might don't do it well.

Secretary Du's feedback: The township environmental sanitation office only has one staff member, his annual salary is more than 20,000 yuan, and if there is no special fund, the village cannot afford the MSW transfer vehicle repair and maintenance. Now, both of the village and the township have no money.

(8) Advice of solving problems (Secretary Qin)

First, there must be an organization for leading and be in charge of it, in terms of our rural MSW treatment, we have borne a lot of works, there should be a department responsible for the MSW transfer of all village.

Second, the tools must be complete. Beishan Xiang has 15 administrative villages now, of which Yupu Village has 11 natural villages, the investment in vehicles equipped in each administrative village is great, I suggest: A village is equipped with one vehicle and the town is equipped with 2-3 spare vehicles under the unified management by the town, which is also easy to maintain.

Finally, in the long run, a MAW treatment plant should be built, the MSW in the county is only treated in heaping, burial and burning way now, it is not enough scientific.

IV. MSW collection and transfer in Dashu Xiang (In the afternoon on December 8)

Build a MSW transfer station in the original MSW collection point;

The MSW station should reserve 8m safety distance (station site – resident homes and manufacturers), but there is an old private house (unoccupied), a pig farm and a small furniture factory near the MSW station planned position. (Dean Huang's advice: It does not matter if 8 m distance cannot be left when the MSW station is built here, the two plants can generate a lot of contaminants by themselves, they should not dare to hinder us.)

Design unit's advice: This point is best in the three towns, because 1. the construction is at the original site; 2. The traffic is very convenient. 3. The population is dense in the surrounding, which will be conducive to playing a collection function by the MSW station.

V. MSW collection and transfer in Wangdun Xiang (In the afternoon on December 8)

The existing landfills in Wangdun Xiang are not close to the densely populated areas, and 1. there are 220V power lines above it, two-level houses cannot be built, so there is no lounge; 2. The wastewater flows to the nearby pond, there are farmlands and houses not far from the pond, the living environment can be destructed. The original landfills are located in Guli Village, but the people do not want it, they took many action to block it, and now the points are sensitive everywhere, so it

has been moved to this area beside the road and relatively far away from the residential areas.
(Dean Wu)

Now, the planning MSW transfer station is near the original MSW landfill (opposite to the road), it will occupy 4 mu of wasteland (including weeds and some trees), it does not belong to Yanggang Village; The land is not in the town planning, and the land should need the consent of the villagers. Design unit's advice: We want to set the MSW transfer station in Wangdun Town inside the town area as planned in the previous scheme, near the township government, but this piece of land also belongs to the environmental sanitation planning and construction land. But in fact, it is impossible, there are too many residents nearby, all of them will not agree to see a MSW station near their home, the location is too sensitive.]

[Summary] There are two problems about the MSW station in Wangdun Xiang: 1. The nearby transportation is very convenient, the road is smooth and spacious, but not near any concentrated residential areas, it is 3km far away from the densely populated area of the nearest town, but the cost of such a MSW transfer is very expensive, not convenient; 2. There are high-voltage lines across, the house with a seating area cannot be built here, and it is not near residential areas, a space must be provided for the staff to rest.

Advice of Dean Wu from Development and Reform Commission: The site selection of MSW station in this township is difficult, it is more sensitive than other towns in public opinion environment, from the perspective of the project investor and the government, the points can be easily found, but the people are not willing to have a MSW station built near their homes.

VI. 10000-mile avenue drainage pipe network

The road is 6 meters, easy for construction.

Put best effort to connect the wastewater from every household into the wastewater drainage pipe network and do the wastewater collection work well from the source.

Engineer Wang of design unit: There are no wastewater drainage pipes under such a wide road, it can be seen that the construction standard in this county is very low!

2. Interview minutes of Jishui County

II. Government FGD (14:00-16:30, December 5)

(I) Land and Resources Bureau Subsection Chief Zhou

1. Currently, the wastewater pipe network is hosted by the water company under Bureau of Housing and Urban, which may be designated to the Urban Management Bureau (but has not been adjusted temporarily).

2. If setting the scheme according to the current pipe network, it will not involve in land acquisition and demolition. According to the site investigation, it will not involve in the permanent land acquisition, only temporary occupation on the existing lands (no compensation, only advanced notice, closed construction, construction period: about one year, after the completion, the road will be polished and the roads in front of the stores will be repaired perfectly so as to become convenient and beautiful than the original) and house demolition near Xiaojiangkou.

In addition, each wastewater lifting pump station will take up dozens of square meters of land, this part of land for municipal public facilities can be resolved, and no additional land acquisition will be required.

2. The existing construction / function of the wastewater pump station in Xiaojiangkou in Chengnan are improving and it is scheduled to be completed before March 1, 2016.

[Expert advice] An investigation can be made, and perhaps the Xiaojiangkou Pumping Station can be included into Jishui World Bank Project so that the Work Bank will be responsible for 50-60%

of the funds, the finance sector of the county will be responsible for other parts in order to reduce the county's pressure.

4. The old house near the Xiaojiangkou Pumping Station is under demolition, which should be borne by Bureau of Housing and Urban.

5. Wenshan Avenue Wastewater Pumping Station is next to an open channel, how to treat it? Cover or culvert?

(II) Environmental Protection Bureau: Director Wang

1. The water intake of the waterworks is near the Peach Blossom Island (there are three waterworks now, and the three water intakes are not within the scope of the project area).

The county wastewater treatment plant has been built completely, and the current daily water inflow is about 10,000 tons.

2. The environmental monitoring station will not monitor the water quality near the Xiaojiangkou Pumping Station, but will regularly monitor the water quality on the cross section of Gan River;

The wastewater treatment plant monitors the influent water quality daily and reports it to the Environment Protection Agency (EPA) twice a month.

[Expert advice] It needs to increase the improvement and practice of the water environmental policy, and the ultimate goal is to achieve the comprehensive, sustained and rational use of water resources.

3. Question 1: Is there any demand on the environmental protection?

Answer: Our fund is now increased by 600,000 yuan this year, but the implementation of a lot of things require money: The equipment of the monitoring station is slowly improving, but some monitoring projects cannot be carried out, because no one can use the machine, we need to do technical training on our monitoring personnel; Second, the work must be equipped with proper tools, so the equipment should be improved continuously, for example, heavy metals monitoring cannot be done by our existing equipment, the cost of only a machine is about one million yuan, we cannot afford it. But now, in the industrial society, the monitoring of water and heavy metals in the land is still very necessary.

4. Question 2: Is there early warning system in environmental protection? (Early warning just before exceeding the standard, for example, it is equipped for the flood control)

Answer: None temperately. On the one hand, our job is to do regular monitoring; On the other hand, we should monitor the contingencies; other works mainly include random monitoring on key wastewater drainage enterprises (underground pipe, concentration, water quantity).

[Expert advice] The World Bank Jishui Project is committed to improving the monitoring capacity of the monitoring station, enabling the monitoring system construction throughout the county and improving the sustainable and integrated management of the water environment.

5. Question 3: Are there monitoring ships in Jishui? Are they responsible for sampling, monitoring and implementing?

Answer: The monitoring ships should be equipped, but there are not currently, we also want them, I know some counties have already equipped. Our network is developed in Ji Shui, the water quality monitoring task is heavier, the monitoring ship is a very necessary monitoring equipment. The environmental monitoring station in Jishui County only has 8-9 staff members, they can complete more than 20 kinds of monitoring items, but if we carry out the work to the extreme extent, more than 40 monitoring job should be done. On the one hand, this fracture is a place that we should improve, on the other hand, it is also a burden on us to achieve comprehensive monitoring with the present human material and financial resources.

[Expert advice] Put effort to perfect this regard through World Bank Project Fund and improve the environmental monitoring capability of Jishui and even Gan River with the project.

[EIA unit's advice] As we know. Environmental monitoring is often under the condition that the higher authorities have policies and the localities have their countermeasures, for example, the real contaminated water source is not monitored and a bucket of clean water can be directly monitored, the water samples in the last monitoring is good, the data is good, but it does not reflect the problem.

6. The construction of Xiajiang Reservoir will lead to (Gan River) backflow and adversely affect Jishui: Therefore, the water intake in the west of the town needs to be moved (the Third Waterworks), because there is wastewater drainage exit near the downstream of the water intake, when reservoir is closed or the rainfall is large, the wastewater will certainly be back to the water intake.

7. Question 4: How to control the wastewater of the pollution emission enterprises?

Answer: It is easier said than done, such as fine or arresting, it is really hard in fact. Now the country also includes the environmental protection into the promotion standard of the local places, so all people have paid much attention to this matter. But how to dispose the pollution emission enterprises? Our standard is that if his pre-treats the wastewater and achieves the emissions standards, then there will be no problem; If illegally discharging the wastewater, they would be definitely processed. However, we are very cautious now in law enforcement, and we will always go there at an agreed time with the enterprise before inspection. In general, the arresting is unacceptable, it will also bring the risk of law enforcement, but in terms of the fine, is it only a one-time fine or a fine by emission days? It is not sure. In fact, the enterprise is not afraid of the fine, the penalty can be earned back after a few days, and they are good at exploiting legal loopholes.

(III) Design unit: Engineer Wang and engineer Zhang

1. Now, 5-6 total wastewater drainage exits have been identified in Jishui County, but the upstream bulk wastewater drainage exits have not been founded.

2. Urban wastewater drainage pipe network will be set with the wastewater intercepting well at an interval of certain distance.

3. [Subsection Chief Zhou from Land and Resources Bureau] The anti-seepage effect of the concrete pipe for the rain pipe is not good enough; The groundwater in Jishui is very rich, the groundwater level is very high, and the main problem is that much water cannot be discharged; If there is rich water, the water outside the pipe can be penetrated into it, it is strongly recommended that the rainwater pipes cannot be the concrete pipe and the materials with better anti-seepage effect should be used.

- Design unit's response: Research will be carried out again, and the pipe can be changed

4. The project requires connecting wastewater drainage pipe to households, but in fact, the single-family homes (such as roadside old bungalows) cannot be connected, there are many houses on the Wenfeng Annual; But we can guarantee that there will be a centralized connection port in the unit building, not to speak of the new communities.

III. Residents in Xiaojiankou in Chengnan (December 6, AM)

(I) Miss Yuan, 70 years old

Living near Xiaojiankou wastewater treatment pumping station (interval: less than 10m), there is an open-air wastewater ditch beside her door.

Some people pour the water directly in the gutter, and it is convenient to them finally, but it will be smelly, especially in sunny and hot days, it is so smelly!

I'm not satisfied about the wastewater collection and treatment conditions in my residence, I'm

often worried about it, my son and daughter have moved out, they do not want to live here, but I cannot, I must guard the old house. My husband named our house as "Balcony" when it was built, but now it is not elegant at all. It should be treated, now, all of young people dislike this dirty and messy place, they have moved away, only leaving some seniors.

Will the wastewater drainage pipe network be built? I am very happy to hear that! But I'm not willing to pay more wastewater treatment charge (current water charge is 2 yuan / ton, containing 0.8 yuan wastewater treatment charge), it is a governmental matter. If you simply want money, I will not want to build the network.

[Summary] The gutter near the wastewater treatment pumping station is so smelly, does it really play a wastewater drainage role? Is the purpose of the pumping station here to appease the people or really treat the wastewater? If treating wastewater, then why the effect is so bad?

(II) Other (female, 68 years old)

In the first half of this year, some people here said that the house was begun to be resettled, the housing authorities registered our real estate license, but until now, the house has not been removed;

I agree with the demolition, after demolition, I want to live in the new house, the accommodation environment will be certainly better, and there will be no ditch like this or so bad footpaths (dirty and narrower road). However, when issuing compensation, our elderly must be taken care. That is, you must put effort to shorten the transition period, it is best to zone the land and build the house, at that time, we will have a place to stay, and it is ok for us to have no compensation. It is not easy for the elderly to rent an apartment, if you give money to us only, I will not agree. (Namely "resettlement before demolition")

IV. Wenshui Avenue merchants and residents (in the morning on December 6)

(I) Mr. Lo, operating Gree Electric Appliances Store (35 years old)

The drainage pipe network should be laid on the road at entrance, and I did not know this thing before, just listened from you.

My store has no wastewater drainage behavior, and we don't stay here or use water, so there is no wastewater drainage pipe.

If the duration is 1-3 months, I can accept it, but I cannot stand if it is six months, of course, the shorter the better, preferably not more than 2 months, this is my limit, because the construction in front of my store will certainly affect our business.

At the time of construction, it will affect our transportation, every day we will pick up the goods from the warehouse and transport them from the store, if the road in front of our store is excavated, it will be certainly inconvenient for use, but this can also be overcome; The greatest impact would be that the passenger traffic will be significantly reduced.

My request is that during the construction, the higher curtain walls should not be used which can completely block out store, two concrete walls are also not very good, although it can wrap the site, but our store will be completely blocked, if the sight is sealed, no one will come to buy our goods? It is best to use short things to surround the site.

In terms of the construction duration, it is best in the evening! This is a commercial street, there are a few residents, mostly of them are stores selling decoration materials here, and there are very few people staying at night here, the construction at night will minimize the impact.

[Supplement] The pattern of Wenshui Avenue is that the merchants are general in the first floor, the above are residents, and there are many households.

For the compensation, I have no special requirements, but it must not be ignored, then the compensation may be a serious problem. If according to my day-to-day account, it is very easily

faked, so I think it should be according to the area, it is a real deal, more compensation for large stores, little for small stores. Like the nearby small restaurants, it only covers a few square meters, their business benefit will not be very large, our store is very big, and the rent is more expensive, it is best for us according to the area.

(II) Resident (female, 31 years old)

Now, the road is very spacious, the traffic is very convenient, but the vehicles beside the street are a bit noisy.

We have no wastewater drainage difficulties, the used water in the family can be poured directly in the sewer, and no one will pour it outside, so the road is quite clean.

If building the wastewater drainage pipes, the government should be repairable for it, we will try to provide supports, this thing is better.

For construction, it is best not in the evening, it will affect our rest. I live here, near the road very much, I cannot rest well at night affected only by the vehicles on the road, if you construct at that time, then I really cannot rest.

For compensation, I'm afraid nothing will be given to us. Even if you ask me now, so what? If the government lays pipes and occupies my land and collects my house, it may make compensation, but this project would not.

For the concerned problems, I'm worried about the noise pollution, dust pollution and safety, the site is in front of our home, if the children fall into the pit, it is really dangerous, so the site must be surrounded and blocked well so as to avoid the children into it.

V. Residents of Shuinanbei Neighborhood Committee (in the morning on December 6)

(I) Guo Tianqing (street secretary 13970657989)

The laying of partial pipe network will affect 80 households of Shuinanbei Neighborhood Committee.

It is the neighborhood committee changed from a village and most of the residents are agricultural registered permanent residences.

The present ditch is to drainage water, but many residents also dump wastewater into it, and now there are a lot of water hyacinths grown in the ditch, the phosphorus content significantly exceeds the standard, and it is because the household pours the water directly to the ditch after washing clothes.

The ditch has not been designed, and the water is directly discharged to En-jiang River.

I do not know the laying of the wastewater pipe network before until today.

There is a brewery plant nearby and many temporary dwellings.

I know this ditch, now it cannot drain the water, it cannot discharge the flood in the rainy day originally, now the rainwater and wastewater are flowed together, it cannot discharge both of them.

[Design unit] The ditch has two treatment schemes: 1. Pipe burial, the construction is convenient but it cannot be cleaned easily; 2. Open channel, the cover should be provided of course.(Decided to bury underground pipe Finally)

(II) Mrs. Wang (47 years old)

There are two requirements: the wastewater drainage ditch should be wide no matter for open channel and underground pipe, and it should be wider no matter in anyway. Now, the (connection) pipe diameter should be less than 1 meter, but this pipe should be 2 meters at least; And the gutter of the original is not so narrow, because it is close to the temporary dwellings to be built, it has been healed, our drainage ditch becomes narrow. Yesterday, the rain was continued for a day, the water was collected here, the rainwater was about 2,3 meters above the shore, the wall of my house was flooded, the rainfall in the summer is rich, my house will always be flooded, it is not a joke. I will

always be angered if speaking this matter, in 2013, the government said to build the temporary dwellings, it forcibly pushed my farmland where the crop would be harvested soon, my husband was arrested for a few days, now my farmland has been occupied, but a large heap was stacked here, I'm uncomfortable every time when I see it. Additionally, the wastewater drainage ditch should be farther away from our home. (If it is an open channel) the children perhaps fall into the ditch after opening the door; And if the gutter is so close to home, the smell will be not good, and of course, my greatest fear is that, for the foundation which is too close to the ditch, in case of water leakage and seepage, would my house be softened or collapsed?

When building the wastewater drainage ditch, it is best to polish the dirty road, because it always becomes dirty in the rainy day.

(III) Mrs. Zhang (running a canteen, 58 years old)

2 yuan will be charged per month, including 8 cents' wastewater treatment charge.

The laying of wastewater water pipes is necessary. It is an old community, where there are many old houses and old pipes, there was a pipe exploded before, the excrement flowed everywhere on the ground, when laying the pipe, you'd better change or at least repair them in my home.

When laying the wastewater drainage pipes, the government cannot ignore our advice, if it's designed well, we will agree it, if not, we will disagree to the end; If you have to construct, we will protest in any way.

For the charges, if we have to pay the same, we can share it equally, I can accept it, but if someone pay and someone don't pay, then I certainly do not want to pay.

(IV) Mrs. Zhang's daughter (36 years old)

The government should be responsible for laying sewer, the Shuinanbei Village should not pay any. The ditch was not so serious originally, it was because the government healed it in order to build temporary dwellings, but finally the ditch was blocked, my request is that the government must stop doing this, okay?! Now, the water in the ditch does not move, the smell spreads very far. Today, it is a good day, it is cloudy, the smell is not serious, if in sunny day, you will know how serious.

VI. Wenshan Avenue Enterprises (in the afternoon on December 6)

Wenshan Avenue is located in Chengnan, there are few residents but more enterprises nearby (mostly of them: timber plant, furniture plant, rice industry plant, printing plant, paint plant, machinery plant, belonging to the old industrial area in Chengnan).

[Design unit] This road pavement is wide and easy for construction; and there are no heavy metal pollution enterprises, and the wastewater from most enterprises can be connected to the public wastewater drainage pipes, and no special treatment is required.

Jiaheng Wood Industry: 40-50 employees, there is a septic tank in the employee dormitory building; A little pollution can be produced only from the glue production link, and no much serious pollution will be from others.

3. Interview minutes of Jingan County

I. Government FGD (10:00-11:30, in the morning on December 9)

(I) Introduction to the project by the design unit

① Water drainage pipe network: Chengbei New Area and Chengnan Old Area (expected to be commenced in 2017 and completed in 2022)

The development axis mainly includes Tsinghua Avenue - Hougang Road, Sungai Avenue, Shima Road, Industrial Avenue, Chengbei Avenue.

Question: Should the small community be included into the scope of transformation? Answer:

According to the construction conditions, the rain and wastewater diversion should be done as closely as possible to the community so as to improve the wastewater collection rate from the source.

② MSW collection and transfer: Currently, the old collection points in the town are mostly open-air, and the collection capability is inadequate

In addition to the existing scheme, there is another one under investigation and to be determined.

(II) Advice from relevant participating departments

The various departments attended do not understand the project, but the county has set up a project leadership team, the First Deputy County Chief is the head.

[Urban Management]MSW and wastewater projects are borne by the Urban Management Bureau (implementation body).

Now, all of the environmental works have been market-oriented, which have been subcontracted in different regions- "Shenzhen Baozhengtonag Company" who is only responsible for cleaning and pouring into the MSW collection station, but not the remaining operation. MSW transfer within the scope of the whole country should be borne by the environmental sanitation office (county +town).

[Environmental protection] Li Wei: What do you need in the water environment treatment? What do you lack?

Environmental Protection Bureau: Is it necessary for you?

Li Wei: No, but like Jishui want to buy a ship and the heavy metal monitoring equipment.

Environmental Protection Bureau: Heavy metal monitoring is not required, because our industrial technology is relatively weak.

[Civil Affairs] There are 2225 urban households enjoying the minimum living guarantee in Jing'an County, including 3394 people, 445 yuan per person; 3994 rural households, including 5441 people, 245 yuan per person (2015)

[Environmental assessment unit] The daily processing capacity of the waste treatment plant in the town is 54 tons (built from 2012 and put into operation in 2014).

[Land] 1. The total coverage area of the project is 500 square meters, the construction land area is more than 200 square meters, the land use can be supported when planning and adjusting, and the official formality can be handled when commencing.

2. The land government of Chengbei has completed the pre-acquisition, it will no longer acquire any land from the hands of the people; In other cases, the land acquisition consent should be obtained from the people, for example, if you want to build a MSW collection station and it will occupy the people's land, you'd better ask the township and village officials to explain this thing to them.

3. If the location of MSW station site near Shuangxi Town plans to be changed, the temporary dwellings should be built, and the scheme has been made out; There is a station site in the south, it is planning to be sold, which may have an impact on the future use.

4. Expert advice: The selection of MSW station sites should be included into the urban development planning (CHGXB [as of 2030], the empty land of MSW station should be reserved).

- Reply from Land and Resources Bureau: Can this point be achieved?

(III) Key points: County Environmental Sanitation Office (Director Yu 13036273677)

Half of the cleaning work have been subcontracted to Cleaning Company (Shenzhen Baozhengtong); The transfer is under the unified management of the county environmental sanitation office.

The environmental sanitation office has 171 people in total, including 25 official workers and 19 retired workers (two items include 44 people, the ratio of county, township and village was 3:3:4); Market employees: 95; Shuangxi Town and community: 62. The cleaner's wage is 700 yuan / month.

Marketization: Level I road: 3.2 yuan / square meters, Level II road: 3.9 yuan / square meters, Level III road: (forget price) - average: 3.71 yuan / m (government's supplies), actually: 4 yuan / square meters (the expensive part is self-supported by the environmental sanitation office) – the environmental sanitation situation is significantly better.

MSW classification: It is best to be classified by the villagers themselves in advance and it is not practical to classify in the treatment site.

MSW Treatment: Point – transfer station - Landfill

County Sanitation Status: A MSW compression station, seven MSW collection points (extremely simple, easily modified)

The government gives 6 million yuan to the environmental sanitation office a year and more than 230,000 yuan per month to Cleaning Company so that the self-management of the subcontracted work can be easy.

Demand: Update equipment (requires MSW transfer and compression vehicles), professional management personnel are also needed; It is necessary to send a small trash bin to each rural household.

Advice: MSW classification must be done step by step in accordance with harmful, harmless, recyclable and non-recyclable standards. We recommended to take "incentives" to guide residents to actively participate in the MSW classification, for example, if they tick hazardous MAW out, they can change the trash bin and MSW bags or integrals can be given to the residents, more points will be given to better classification, then the gifts will be distributed according to the integrals.

II. Project site interview (in the afternoon on December 9)

(I) Laocheng Times Square (introduction by engineer Lai from Design Unit)

It is a snack road in the town, the road is narrow, and when construction, half of them should be excavated or roof construction should be taken; there are many roadside communities and the pipe network construction will affect the households; there are more roadside merchants and it will also affect the business.

Connect the manifold into the community and then into the outfall wastewater drainage exit of the community.

The Construction duration will be about a month, no compensation will be paid and at the end of construction, the pavement will be repaired.

(II) Chengbei: Open-air MSW collection points (existing) should be changed to MSW collection points under better conditions

The site selection of the lot to be acquired has been completed, the land re-acquisition is not needed in order to build MSW station, a piece of land can be left directly for MSW station construction and the green belt should also be constructed nearby; And then if going straight, there are People's Hospital, temporary dwellings, schools, factories, etc., but very far, the impact should be minimal.

Disadvantages: The traffic from the highway to the dirt road of the MSW is inconvenient, and the road transformation will not be done soon in the county (will not be included it in World Bank Projects).

(III) Binhe Avenue: Pipe network laying

Originally, the whole town would be built in this new area, but the later policy does not allow it,

so it was ran aground.

The people want to resettle, but it has not yet been implemented.

(IV) Shengnan Avenue: MSW transfer station (to be determined)

MSW station site is located in Nangang Road, but now the land is a piece of vegetable land.

4. Interview minutes of Shangli County

I. Waste transfer project governmental FGD

(I) Analyze the reasons for that the project site selection has not yet been determined (in the morning on December 2, 2015)

[County Development and Reform Commission] The town work is very difficult as imaged, there must be a necessary condition for the land acquisition or demolition and point selection: That is money. Assuming that my land is here, if there is no money when levying, the people will absolutely allow you to levy it, and now there is no money so that it is more difficult to implement the point of the domestic MSW treatment transfer station. It is a project to be ruled in 2017, and if implementing it now, I think it is rather difficult. There are approximate locations in each township, but the concrete implementation will involve in money. Now, if implementation this project site, the township and village officials should mobilize the villagers but they do not know this project. Our county leadership held meeting to implement the project, we must have support from the township, the DRC cannot control so much, our department can only play a coordinating role, so the specific implementation of site selection, land acquisition and demolition should be done by the town, for example, if Fuping Xiang has decided the site, we will go to the site for investigation, my personal idea is that we try not to resettle this project site, our own selection of site have many requirements: It is not in residential areas, but it must be easily accessible, because the MSW transport will be involved, if the traffic is not convenient in the selected site, we should try to build a road.

[Environmental Protection Bureau] We do not advocate the demolition, we just put requirements on the site selection, for example, if it is about 20 meters from the nearest residents, then your site should be secondly considered, it is basically impossible, because it will increase costs. You'd better build it beside the road where there is no household, such as the col or wasteland, in fact, I understand just what you said, and now the explanation to most people is only an agreement.

[County Development and Reform Commission] If signing the agreement now, they will increase the price when constructing, even salt price. I think the government should buy the land, and it will be easy when constructing.

(II) Work reports of various departments (in the afternoon on December 2, 2015)

[EPA] We mainly want you to determine the address of the MSW transfer station before the New Year. Because if you do not determine the address, we cannot carry out the EIA work Now, there is a trouble that the communication advice between our project team and feasible research units is changed: The setting of MSW treatment stations is also a problem, if setting, a large number will be required (160). There is also a core question: The points of ten towns must be determined. From the perspective of our environmental department, although we have not yet looked these points, but we also mention that: Because it is not in a very dense population urban area, so we think that the site selection condition should be in a circle with a radius of 50 meter where there are no people lived in a radius of 100 meters.

[County Development and Reform Commission] 50 household surveys should be determined and reported before the New Year's Day. The relocation does not involve the demolition, and the other party is entrusted to hold a FGD tomorrow to provide our information.

II. Interview in Dongyuan Village, Dongyuan Xiang (December 3, 2015)

Interviewee: Township head Rong

[Project cognition] I'm a township official, I know this project, but the people do not know at present. Because I 'm the deputy township head in charge of the project, now, our township has started the MSW collection and storage project, built 147 MSW ponds in 147 natural villages points and also invited two cleaning and transport vehicles. The investigation about the rural MSW cleaning has been done, and every household has been mobilized, but they also don't know the specific building of the MSW transfer station very well.

[Project Content] A MSW transfer station will be built here, and our project and this project are the same, i. E. to compress, classify and harmlessly process our collected and stored MSW here and then transport them to the next MSW treatment agency or generate electricity with them or landfill them.

[About land acquisition] The land for the built MSW transfer station was acquired from the people in 2013, the land belonged to the collective land, it was acquired based on the standard, but no land certificate was handled, because the current land has not been used.

Two years ago we are ready to build a transfer station, originally, we got ready to build the wastewater treatment plant, but it was built in the downstream, so this piece of land was acquired by us. Land acquisition is not a problem, there is, much wastewater in the MSW transfer station, so the pipeline was connection underground and it formed a wastewater treatment plant, at that time, the land acquisition compensation was according to the national standards, i. E. 28,000 per mu for paddy field, the mountain: more than 5000 per mu. Although we acquired five or six mu, but only about one mu was used for construction of MSW transfer station. The land acquired in the township at that time was to build the MSW transfer station and wastewater treatment plant.

[Related attitude] In 2013, the project was also declared, 147 MSW ponds has been built now, our county has set with an MSW incinerator, the incineration will cause pollution, but the pollution after burning is just 10% of the original, just like our explanation to the people. These are the processes of building rural economy, if the project is used, it can avoid 10% of the pollution generated by the burning, its role is the same with the role played by the MSW transfer station inside the city, the building of the MSW incineration plant or landfill in the city is not our responsibility, because the MSW has been transported out.

[Impact of the project] Village official Li XX: I know this project, and we have conducted a preliminary investigation. Ordinary villagers also know this project through the questionnaire, they also support it, because each of our natural village has small MSW storage pond and then the villages and towns will collect them. The adverse effect from building MSW transfer station is basically very little, because the vehicles are not large in our villages, and almost all of the villagers agree it generally.

III. Interview in Fuping Xiang (December 3, 2015)

Interviewed person: Township official

[Current situation] Currently, our rural villages and even towns have carried out a large rural clean and restoration project, we developed one-month concentrated remediation activity, and we have achieved some successes and established a long-term mechanism. The investment in this filed has spent more than 100 million, including the construction of MSW transfer pond, this MSW transfer pond is built not far from the road, so the full MSW can easily be transported out. It also includes the MSW terminal processing: it also established two MSW incinerators, one has been completed, another is ready to complete.

[Existing problems] Now the main difficulty we faced is funding, in all counties, it is also a

typical difficulty, we are groping this thing (environmental management) while practicing, so in this process, our main problem is the lack of funds, since the project involves in more than 54000 people, our plan is to finance funds, our environmental remediation work must achieve full coverage, rather than only a group in a village, we have set up a special agency now and expanded the town management station to urban and rural environmental management office, now its scope of management has been expanded, and recently the MSW cleaning and transport of the whole community is borne by the urban and rural management office. Currently, our rural household MSW will not be out of the home, we will send a trash bin to each household at the door, we will have a special cleaner to collect every household's MSW and then take them out for treatment. This process has several important links: First, we should ensure the cleaner team, the team is currently relatively large, it will involve in a lot of expenses, which is also a problem we are faced. So we are shrewd in money matters when doing this thing. In order to cover all environmental treatment works, we must do some trails to make the people's awareness become better slowly, and now the township government should do this work, and this project has not been started for a long time, but has been just started, so that a lot of works are not recognized by the people, their awareness has not been become better, our work is more difficult. People have littered harmful traditional practices and it is not realistic to make them give up.

In this part of MSW cleaning and transport, we have been equipped with special vehicles, although the town has approved 3 vehicles, they are rented, not professional sealed vehicles, and just covered with a shed in transporting, and now the country is building "green agriculture", our work pressure is great. On one hand, the vehicles are not enough or professional, on the other hand, our pond is an open simple MSW pond, which will also affect the appearance of the village beside the street, in the summer, the smell will be emitted, the people will not agree to build this thing, when it rains, it will become more difficult to treat. Because we have no sprinklers, many facilities are not equipped.

In this link of the MSW collection and treatment, our town has no landfill so that there is no place for the storage of the construction waste at all. We can only transport them to the urban landfill, but the cost is expensive. And the urban landfill has been unable to accommodate our towns, but only the urban areas. Therefore, we always ask them for help.

Our town has a characteristic that we belong to a suburban town, our total coverage area is 850,000 square meters, we also have another characteristic that there are so many projects, such as large-scale environment treatment, real estate investment by a Nanchang boss, as well as Jiangxi Pheasant Industrial Park. So we do not only have domestic MSW, but also a lot of construction MSW, our MSW treatment task is very serious. The current industrial MSW is mainly caused by electronics factory and it should be treated by itself. We are not engaging in the explosive fireworks industry.

Now, we are engaged in MSW treatment from the city to the county, many secret inquiries group have been established and they secretly photographed the MSW pollution places and then visited each township suddenly, it is hard for us because of lack of funds.

Because we will build a MSW transfer station and it does not involve in land acquisition and resettlement, the people are still willing to do this thing, the city has given us 1 million loans to do this project.

IV. Interview of 15th Group, Mingshan Village, Futian Town (December 4, 2015)

Interviewed person: Villagers (Du XX, male, 63 years old)

The village has nearly 500 households, and the 15th group includes 18 households. The village issues about 200 to the poor farms. The occupation is farmer at home, we are very supportive of the

implementation of this project, and we have wanted to build a MSW transfer station for a long time.

Demands on the project: As long as the MSW is promptly taken away, there will not be much impact.

In short, we are more active in cooperating with the government for the implementation of the project.

Land rent: The MSW transfer station occupied our land, because our village is originally a collective enterprise, the land has been acquired completed. Then the quarry is banned for some reasons. Now the land is leased. The compensation was given to the farms according to the market price of grain, i. E. 670 kilograms / mu.

Satisfaction of the project: We always support everything, of course, in most of times.

Reasons for the people not supporting: They are worried that after the building of MSW transfer station, there may be phenomenon that the MSW cannot be transported in time, there may be flies.

The government always holds the project-related meeting and the participant case of the villagers is as follows: They participate actively, even the women, in general, the villager group committee will be held, the villager group leader and representatives will participate in it, and they will present their advice. Women and vulnerable groups will also participate in it.

Former MSW treatment methods: Every household has on trash bin, but it provides the fly ash and the like cannot be poured into the trash bin, and other MSW will be transported out, the fly ash landfill are mainly treated in landfill method. We did not compress the MSW previously, but transported them out directly.

Views of the MSW treatment methods at present stage: Currently, we are less satisfied, because we really need such a MSW transfer link, there are two main MSW treatment methods in the world: Incineration and landfill. Like the MSW incineration in our village, but sometimes the MSW cannot be burned in time, so it is necessary to set up a MSW transfer.

The village workers recruited in charge of environmental treatment: We have cleaners, they are usually locals.

Situations of the villagers' environmental awareness: High degree, it is very clean in front of every house and in the fields and ditches of Minshang Village. They are the best in this aspect.

Situation of villager organization and mobilization: It is mainly to play a role of the senior citizen association, and the member is the retired elderly in the family, they are responsible to engage in the village health, such as picking up trash. Our country always visits Minshang Village to learn.

Advice on the project: The MSW should be treated in a timely manner and it cannot exceed 2-3 days.

V. Institutional FGD in the morning on December 4, 2015)

[Environmental impact assessment] The trash bin should be set for household, the electric vehicle / MSW cleaners / MSW houses should be provided, and MSW should be transferred by the electric vehicle to the house, and then transferred to the transfer station. Propose site selection requirements: There are no settlements within the range of fifty meters, the construction conditions is ideal, the location in the township is the collective land, it is difficult to produce the land dispute, the setting condition meets the requirements, and the other towns without site selection should refer to Fuyuan and Futian.

Our duty is to propose advice on the site selected which does not meet the requirements, make public survey (individual and collective), field monitoring (environment and noise) and monitor the surface water, air and noise, the air samples should be sent to the urban bureau. Question: Does the construction land for the MSW transfer station meet the planning, and it may not be the construction land at present.

[Environmental Protection Bureau] Our duty is to monitor the surface water and noise status which can monitor the implementation of the project, and the samples should be sent to the city.

[Bureau of Housing and Urban] We don't know World Bank Projects and its purpose, of course, we always basically support all matters related to environmental planning and livelihood projects no matter whether there are policies. Town planning can only ask the township.

[Land and Resources Bureau] The land should be acquired according to the provincial standards, the policy document should be subject to the document forwarded from the province, the price in the town in the north is higher than the town in the province, but the price in the southern town is the same with the provincial standard. Of course, we have forwarded the provincial document, but the field compensation may vary. Compensation appropriation process: The lands should be acquired by the town from the farmers whose land has been acquired and the payment should be directly made with the one-card account, and after signing the contract, the payment will be uniformly made. Requirements: Like your villages, the project coverage area is not large, the basic land acquisition problem is not serious, your site should be as far as from the basic farmland, the protection rate of basic farmland in Shangli is relatively high, if your farmland is occupied, you need to select the site again. Try to choose a place as closely possible as to the mountain, the overall land planning was revised in 2006, of course, you cannot reach the requirements suddenly, but if the farmland is occupied, the adjustment should be made as closely as possible to the location where the site is selected. Your land locations are scattered, the towns should be concretely connected with us at that time, we will put efforts to cooperate, and if not meeting the requirements, we will try to make adjustments. I think it is not a big problem, because it only covers a relatively small area.

[Development and Reform Commission]

1. Introduction to the overview of the project

It involves in seven counties and mainly belongs to a MSW treatment problem. Main construction contents: Engineering measures (MSW classification bin: two per household, a total of 230,000; A bag per household, a total of 115,000; storage barrels: 115 000; 360 MSW houses; Purchase 360 electric tricycles; 25 open MSW vehicles; 11 closed MSW vehicles; build 159 solar MSW treatment stations; Build 11 MSW transfer stations)

2. Environmental protection publicity channel

Educate people through media and school, give lectures in organizations, distribute brochures, and issue some measures, with the focus being to make every villager familiar with this project, draw their attention, and further enhance their environmental protection awareness.

3. Personnel training

Trainings should be given to cleaning and transport workers, operators, and supervisors.

4. Working arrangement in this year

Trainings provided by the province in September have been participated in, and the exact actions should be done as good as possible as per provincial arrangements.

5. Positive and negative influences on villages and towns after completion of the MSW landfill

Environmental conditions have been improved, especially the large changes in rural conditions led to by the national new rural construction. However, these changes are not fundamental ones, and if this is done, rural living conditions will be improved.

6. Charges

The document for charges has been issued. Currently, the processing fee is 50 yuan/ton when MSW is sent to the township, and later, when a MSW incineration plant is built in the township, the

fee might be higher. Two problems concerning MSW processing fee: MSW processing fee will be charged to each person each month, which will be collected by cleaners of villages as compensation. The fee is about 6-10 yuan, which is paid by each village on its own. The salary of cleaners of a village includes three parts: County subsidy + township subsidy + village subsidy. MSWs are collected by MSW cleaners manually and then sent to the MSW transfer, with the fee being borne by the relevant town. It is required provincially that 3 cleaners should be assigned for 1000 people, which currently has not reached yet. Right, one cleaner is assigned for 1500 villagers.

7. Payment willingness of villagers

If the work is done well, they are willing to pay it, and people not willing to pay are very few. 100 yuan a year is totally affordable. 20% of all villages will pay it, which won't be a problem.

8. Means of MSW disposal

It will be treated immediately, and some of it can also be treated by MSW incinerator.

9. Questions & Answers

There are also some hygiene related negative impacts during the construction and operation of MSW treatment site. Early stage: How to avoid the impacts of raising dust, noise and so on?

Answer: The area we need is not large and our task is not heavy either. We can build it in a place far away from thickly populated area.

Social risks during the operation of the project are mainly caused by such negative impacts as percolate generated during the processing of MSWs, smell given off during the storage and transportation of MSWs (open MSW transfer vehicles will give off smell), mosquitoes, flies, and mice attracted by MSW dumping sites. How to avoid such risks?

Answer: Closed MSW transfer vehicles should be used. Stagger time difference: Non-meal time. Dispose it later timely.

10. MSW classification

According to the proposal, each household should have two trash bins, with one for perishable wastes and the other for those non-perishable. The classification is easy. We offer a special curriculum in primary school to teach the classification of MSWs.

If MSWs are not treated timely, it will increase the risk that the nearby residents of temporary MSW dumping sites, MSW cleaning and transport workers, and the nearby residents of MSW landfill get sick, especially the negative impact on women and children. How to avoid this?

11. Provide positions during the construction of the project

Select professional workers.

12. Food MSW

The town has set up a special MSW treatment center.

13. Project leader

The county government acts as the head and leads the project, which is a comprehensive project with the specific work being done by departments. At the early stage, the project is undertaken by Financial Department, Development and Reform Commission, and Rural Work Sector.

14. Problems in the project

Site selection and cooperation of town leaders

15. How many technicians are estimated to participate in the construction of this project?

80

16. Which department is responsible for the later management and maintenance of the MSW landfill? If a problem occurs, which department is responsible for solutions?

The township government is responsible, and it has set up a Rural Cleaning Office.

[Rural Work Sector] We know this project, and if it is funded by loans from the World Bank, the environment will be different. Currently, the trash bins and houses of all villages have not put in place, and in ten towns, there are no standard MSW transfer station. This project can solve the above problems entirely, which is very good.

[Civil Affairs Bureau] It is necessary to support the construction of MSW transfer stations, and it is recommended to take towns as the main construction body of the project. Families enjoying minimum living guarantee will not be charged with this fee, and since there are very few such families in each village, it won't be a problem. And they can work as cleaners

[Environmental Protection Bureau] The site selection is a big question. At least 100m. Currently, some towns have built MSW treatment plants and MSW incinerators, all of which are about 1000m. They have been built and MSW incineration is forbidden. Many villagers have complained about this.

MSW transfer stations give off very awful smell, so site selection is very important. Site selection standards should be agreed by villagers rather than only conforming to standards, otherwise even if the distance is 1000m, villagers will also disagree. Pollution during the transportation is not a big problem while site selection is critical to avoid complaints from villagers. If it is a transfer station, villagers will have deeper resentment. Secondly, it is necessary to persuade villagers, and those living nearby will worry and definitely disagree with it.

[Bureau of Housing and Urban] They are not willing to see the site is closed to their home although every family needs it. Therefore, it is hard to persuade all villagers and they will have concerns.

[Planning Bureau] It is better to assign the village head and secretary to do this job, because they enjoy prestige in their own village and villagers also dislike the government. We will cooperate of course.

VI. Interview of Hengshui Village, Jinshan Town (in the afternoon on Feb. 04 2015)

(I) Interviewee: Village head

Basic information: There are over 1000 households in this village, more than 5100 people in total. Most of the villagers are working in fireworks factories and some of them are farmers. Immigrants are few. The annual per capital income is 48000 yuan, and there is over 1000 mu land. A farmer's market in this village is a collectively-owned enterprise. There are 800-1000 villagers above 60 years old, and about 400 villagers have pension insurance. The premium of rural pension insurance is over 100 yuan. Villagers' education level: Villagers above 60 years old are illiterate or have just primary school education; Villagers younger than 20 years old have high school education or above. Most villagers between 20 and 60 years old have middle school education.

The environmental improvement of this village: The village distributes trash bins, with a coverage rate of 96%. All village leaders and group leaders participate in volunteer environment improvement work. The village has invested over 200 thousand yuan to build an incineration station, which only took a month from its site selection to the completion. This project has been relatively supported and highly demanded by villages.

Villagers' attitude toward the project: Relatively supportive

Villagers' knowledge about the project: Yes

Villagers' attitude toward the project: Supportive. Some are worried out the smell but this concern won't be a problem after the MSWs are transferred away.

Reasons why the project is so highly supported: The village has arranged villagers to visit and learn experience in Hunan province for about three or four times.

Influence: The environment is improved, the overall villagers' quality is improved, and the

overall village is relatively rich.

Problems in the project: No worries. After the project is built, MSWs will be transferred away definitely and treated as fast as possible

Meetings of the project: We will organize villager representative meetings for the project and make decisions based on villager's show of hands.

People enjoying minimum living guarantee: 120 people.

The employment of people enjoying minimum living guarantee: We don't have collectively-owned enterprises, so these people are working in firecracker factories.

Environmental sanitation workers: The town hire these people on its own, and they are about 50-60 years old and earn 1200 or so a month

Their work are to clean the road

Classification of MSWs by villagers: Right now, after the village has called upon the classification, 90% of them are doing this by themselves. The MSWs can be divided into flammable wastes and nonflammable wastes.

Land acquisition: The transfer station is about to take 7-8 mu of land. The money of land acquisition will be transferred to the "One-Card" of villagers by the Financial Bureau instead of being passed by the government.

MSW disposal charges: 15 yuan/month, which is mainly used to pay the salary of three environmental sanitation workers and four environmental sanitation workers hired outside of the village. Villagers will pay this fee but families enjoying minimum living guarantee don't have to pay.

MSW transfer vehicles are of an open type, over 20,000 yuan, which are bought by the village on its own.

(II) Interviewee: Ms. Shen, 60 years old, a retired worker of Anyuan Coal Mine

Knowledge of the project: Aware

Attitude: Agree to build the project there

Question: The smell will disappear after MSWs are transferred away, and therefore, they shall be treated timely

Knowledge channel: Notice in village meetings

Concerns: No concerns

The construction of a MSW transfer station will beneficial to both individuals and the whole village

The benefits: The sanitation is improved, which will give visitors a good impression and improve people's life

Land acquisition compensation There are national standards

It will take a mountain area, not much, and the compensation of mountain area is relatively cheap.

Main pollution after the completion of the MSW transfer station. Reduce pollutions giving off smell.

5. Interview minutes of Yugan County

I. Interview of Dawan Village, Yugan County (in the afternoon on December 7, 2015)

(I) Interviewee: Ms. Yan, 32 Years Old, a Villager of Dawan Village, Middle School Degree, Housewife

Family members: Five members. Her husband is working outside, and the rest of the members are her father-in-law, mother-in-law and son.

Average annual income is about 100 thousand.

Village conditions: Many villagers of this village are working in the city, usually as craftsmen. Only few villagers are doing farm work because currently almost all land is contracted to others to plant paddies. General assembly in this village is very few and rare. There are about 10 villagers in this village enjoying minimum living guarantee, and these people are the disabled villagers or villagers badly off.

1. Current environmental governance situations in this village

She is not satisfied with the current environmental government of the village where there is no person responsible for dumping MSWs and cleaning the environment. Trash bins are made by villages themselves and the village does not provide uniform trash bins.

MSWs are incinerated by villagers themselves. Some of them will put MSWs on designated MSW site, but most of them litter MSWs randomly. Because the road is cement road right now, the road is not muddy when it rains. It seems that currently there are many MSWs in the river even in the ditches. The river does not give off awful smell right now, which smelled very bad in the past. Its smell was very unpleasant because some people from Zhejiang contracted fishponds to produce pearls, while in the first half year of this year the town asked these people to move away. Before that, it has been smelly for more than a decade. There are many flies, mosquitoes, mice along the river. She is not very satisfied with the water environment of her living area. In the past, the river was clean but now it is dirty. People pour domestic wastewater and throw away MSWs randomly, which has polluted the river.

Treatment of our domestic MSWs: We dump them in our own trash bins and for flammable MSWs, we usually incinerate them. Meanwhile, some MSWs that can be used as fertilizer after becoming rotten will be buried in fields. The village has never set any public trash bins.

Wastewater drainage condition: Our villagers drink well water which has no smell right now. We don't have tap water and we don't have to pay wastewater treatment fee. We usually pour away domestic wastewater, and because there are only few sewers here, the wastewater is eventually flowing to the pond which has been polluted very seriously. The village has never taken any improvement measures for the pond. We don't have any wastewater collection and treatment system, and each family has built a septic tank. However, because it is far away from the river, people's life is not impacted very much.

Environmental sanitation worker: Villagers elected one environmental sanitation worker in the past. But the salary is too low, so the environmental sanitation worker quitted. The salary is 8000-9000 a year, and the environmental sanitation worker needs to spend 2000 on the vehicle which is very easy to break.

Industry status: The village does not have any collectively-owned industry

2. Demand

Hire environmental sanitation workers for the village, pay them, and raise the salary

Build a MSW pond and widen the road.

3. Attitude towards the project

She is satisfied with the project. But the project should be done meticulously.

4. Suggestions on the project

The quality and quantity of the project should be guaranteed, and the construction period should be shortened as short as possible. If there is any land occupied temporarily, national compensation standards should be implemented.

5. Impacts of the project

Disadvantage: Since we just have one road, the construction work will hinder our traffic.

Advantage: It will make the village more beautiful

(II) Interviewee: Village secretary: Zhang Changhai, 63 years old, middle school degree, tel: 13677517138

1. Basic situation of the village

This village is an unincorporated village with over 200 years' history. There are 100 households, about 360 villagers. 8 families receive substance allowances, and they usually get subsidies and relief payments from government, which varies from 200 to 300 yuan, depending on the poverty level. Other poverty alleviation measures: Pair assistance of leaders of government agencies. Reasons becoming families enjoying minimum living guarantee: Disability, disease, or loss of parents. No family in this village enjoys the five guarantees

The annual per capital income of this village is over 20 thousand yuan.

Employment status: Usually the aged are farming at home while the young are working outside. Working villagers account for about 60% of the total population of the village, some of whom are working in other provinces such as Guangdong and some working as craftsmen in their own city. About 30% villagers are farming at home.

Land conditions: All villagers have 0.7 mu land, most of which grows paddies, with enough paddies being left as food and the rest usually being sold.

Women's status: Elderly women usually take care of young children at home, while young women usually work outside

Industry status: The village has no collectively-owned industry

Situations of the aged: There are over 30 people over 60 years old, all of whom have pension insurance, which is 80 yuan a month.

Villagers' education level: Most of them have middle school education.

Gender ratio: About 45% male, and 55% female

In this village, most of the villagers are agricultural population, with only 2-3 households being non-agricultural ones. The labor force population is over 200, 60% of which are working outside. The agricultural acreage of Dawan Village is over 240 mu, growing vegetables and paddies, and the yield of paddies is over 1000kg/mu.

2. Current environmental governance situations in this village

Currently, the village has not carried out environmental improvement. In the past, each household had a trash bin which was set in a fixed place. The village sent a special person to collect them, but the salary of environmental sanitation workers was too low, about 10 thousand yuan a year, which was paid by villagers and the town together. Last year, each household paid 110 yuan, but the salary was still low, so environmental sanitation workers quitted. And thus, from last year to this year, the environmental improvement work has been impacted. Most villagers are willing to pay MSW processing fee.

Currently, our domestic MSWs are brought to the street where there are trash bins

Domestic wastewater, flowing everywhere, is still a problem.

Planning: Raise the salary of environmental sanitation workers to attract villagers to do this job.

3. Attitude towards the project

Strongly support

4. Influence of this project

Advantage: It is good to both the physical health of the villagers and the environment hygiene

There is no negative impact. Because nothing of the villagers will be occupied, there will be no disadvantages but advantages.

5. Situations of the villagers' environmental awareness:

Villagers' environmental awareness is fine, and many of them hope the village can hire

environmental sanitation workers to stop littering of MSWs.

6. Views of the MSW treatment means at present stage:

It makes people unpleasant

7. Pollution of the surrounding rivers and lakes

In the past, people were growing pearls here, and the fodder they put made the lake very smelly. Right now, they have moved away, which slightly alleviates the pollution. The rivers and lakes are managed relatively properly now.

8. Villagers' participation in politics

It is not likely that all villagers participate in village meetings, and usually village leaders will notify all households one by one

9. Problems in project development of this village

If it is to build wastewater pipelines, which will occupy lands, villagers will have problems with it. Once such issues are involved, there will be conflicts. In the past, villagers were asked to contribute the cost for the construction of changing rooms beside Huhui River, and none of us were willing to pay.

10. Advice on the project implementation

Village leaders do not know this project very well, and the primary basis should be to avoid villagers' benefits from being damaged.

11. Knowledge on the project

Do not know

12. Demand

Expansion of the road

II. Government Symposium of Yugan County (December 9, 2015)

[Environmental Protection Bureau] Be responsible for routine monitoring over Pipa Lake, with the wastewater outlet being put at Huhui River. The drink water source of waterworks is at Xinjiang Tributary. Currently, because the construction contractor does not set enough ports, the villagers cannot discharge wastewater.

Measures for villagers connecting to the pipe network: Holes should be reserved in each section of road, and currently, there are open channels with cover plate on them.

Advice: Wastewater from some community residents should flow to the wastewater pipe network, which can largely solve problems related to pollution sources. Functional orientation of water in Pipa Lake: In the past, we can swim in this lake. I hope this project can clarify the lake and give the clean lake back to us. In the future, the lake can also be planned to build lake view houses so as to drive the economic development

Social risks: No big ones

Question: Wastewater of the night market has flown in the pumping station, with some being drained to one side of the bridge, causing awful smell of the river.

Help from environment protection departments: Provide monitoring data together with municipal administration department

[Development and Reform Commission] Water in Huhui River is Class III, while water in Pipa Lake is Class V. Currently, water in Pipa Lake is Class V, and the goal is to make it reach Class IV. The location of MSW transfer station has not been determined, and the Planning Bureau will make relevant plans. 500m away from residents. The owner is the Development and Reform Commission, with the relevant department setting up a project department.

The water outlet is set at the dam of Huhui River, which is filled by villagers building house above. Currently, this outlet should be recovered, and the wastewater interception pipe network has

not been selected.

Measures for reaching water quality standards: Lay wastewater interception pipe network, with the wastewater pipe network being laid in ditches, and raise water level difference with pumping station.

Impact of wastewater discharge on city development:

Stinky smell will impact the value of aquatic product yield; Affect the human health. Affect the investment conditions. Cultural, geographical, and working environment will all be impacted.

Publicity channels: Use the website of Yugan County People's Government and give public notification in obvious places along Pipa Lake. The design plan will be shown in public to seek public opinions. We will set the first, second, and third prizes to encourage villages to give good suggestions.

Connections between provincial department and the town's work: It involves state-owned lands, and the part related to land acquisition is very small, so it won't be a problem

Personnel arrangement: The environmental sanitation workers are under the management of the town, and environmental sanitation workers of the city are under the management of the Environmental Protection Bureau. There are 6 MSW cleaning and transport vehicles.

Possible problems in the project: The key is the design plan and whether the design can achieve the actual goal.

Training work: Invite experts to give lectures and promote environment protection

Planning: Establish a management system and clarify the people who are responsible for managing Pipa Lake and enforcing the law.

[Environmental Assessment Department] There are no wastewater drainage pipes at the barrage. Currently; the wastewater water is discharged to the ditch at the water outlet of Pipa Lake. Environmental Protection Bureau: In the past, there were no ports on the wastewater pipe network, which made the villagers unable to discharge wastewater into the pipes.

[Land and Resources Bureau] The land acquisition standards are in accordance with the statistical documents of the provincial government, with no implementation rules being issued. Temporary land occupation observes provincial documents and is submitted for approval. The compensation plan and time schedule are not clear. Information about ground attachments will be provided.

The project will be implemented in the original scope, which does not involve resettlement.

Public participation: How to make villagers participate in site selection of MSW transfer station?

MSW transfer station will cover an area of 100m², and the excavation area of wastewater pipe network has not been determined

[Director Zhou, Aquaculture Department] After Pipa Lake is regulated, the aquaculture farmers will be impacted, and with the fodder and nourishment being forbidden to put in the lake, their yield will be decreased. Economic benefits will be relatively poor. The compensation should comply with the opinions of the county government. And those from Zhejiang who were growing pearls here and caused awful smell in the air were forced to move away. Compensate people growing pearls with forty or fifty thousand yuan of resettlement fee and help them find proper aquaculture bases. In the past, aquaculture covers an area of 200 mu. Fish farming was the conventional farming category, namely, four major Chinese carps, and the fishponds are connected to Pipa Lake, which has some impact on it. Among the villagers, there are 30-40 households contracting fish farming work, covering 820 mu, and the area is also up to hundreds of mu even excluding the fishponds. The annual yield of aquatic products in total is over 150 tons, with a total value of over 98 yuan.

[Municipal Administration Bureau] Manage the night market near Pipa Lake, where the drainage is connected to the pumping station

Work undertaken: Carry out spot check on each street, with the focus being to make statistics for streets not connected to the wastewater pipe network.

Site selection of MSW transfer station: According to the previous experience, it is necessary to take relevant supporting measures, and usually, the station is set in a remote place.

Advice: New-built wastewater pipeline network

[Planning Bureau] Difficulties of the county: During the improvement, it is hard to build a wetland park.

Work undertaken: Issue certificates, approve project, handle site selection opinions, and provide other services within the scope.

[Water Conservancy Bureau] The land around Huhui River is within the scope of water conservancy, currently, it belongs to the villagers, and the confirmation of land rights has not implemented.

The law enforcement for water conservancy is not implemented, and the river levee within 20m is all land for waterway. The key problem is law enforcement.

Villagers have not obtained contract operation certificates. If the project occupies land within the scope, there will no compensation, but villagers will not agree. Usually there should be compensation for young crops.

Advice: After site selection, the red line should be marked as soon as possible, and once cultivated land is involved, it should be submitted for approval.

The town should issue a relevant policy

Aquaculture should be controlled in a proper degree

III. Interview of Sunjia Village, Yuting Town (December 9, 2015)

Interviewee: Village Director

1. Basic situation

In this village, over a hundred households, impoverished people are a relatively large population, accounting for 60% of all households, most of whom are doing farm work. Most people here grow vegetables and sell vegetables for a living. In this family, there are 7 people, the husband working in a Fujian factory for over 3000 yuan a year, and the interviewee is a housewife. There is no collectively-owned industry here, and no one is farming fish.

2. MSW disposal situation

MSWs are sent to the MSW transfer station and loaded in vehicles by environmental sanitation workers to transfer out. They are not classified in advance.

Domestic wastewater is poured by the road. We don't have sewers or wastewater drainage system, and houses outside are not set with ditches.

3. Pollution in rivers and lakes nearby: Currently, the water quality is fine without any smell

4. Situations of the villagers' environmental awareness: The overall situation is fine

5. Environmental sanitation workers' situation: Only one. The environmental sanitation worker is responsible for cleaning surfaces and uses a trolley bought by himself.

6. Attitude toward the project: Very good

7. Impact of the project on the life. No impact presumably

8. Advice: Construction work should be done by the road instead of damaging the whole road or impacting the traffic of residents

9. Publicity: Village leaders convene meetings to notify villagers and ask for advice

10. This project will be beneficial to the whole village

11. Benefits of the project: can improve the eco-environment
12. Adverse impact: Construction of the project will hinder the traffic and make houses dusty

6. Interview minutes of Poyang County

I. Interview of Jinghua Village, Shuanggang Town, Poyang County (December 6, 2015)

(I) Interviewee: Village secretary, male, 49 years old

The road is muddy when it rains, inconvenient to pedestrians, and thus, the road needs to be repaired.

1. Basic situation of the village

There are 160-170 households in this village, about 1700 people. About 30 households among the impoverished enjoy minimum living guarantee, and most villagers here are the aged and children, with the former accounting for a large percentage. Land types: Mountain lands and basic farmland.

Employment status: In the past, villagers did farm work and now they are working for others. People doing farm work are above 60 years old and villagers working for others are ranging from 20 years to 30 years old who are working in Hangzhou and Guangdong. This village has no minorities.

Subsidies for families enjoying minimum living guarantee: Granted by the government. Because the village has no industry-related work, these villagers are not provided with jobs by the village. There are 34 families enjoying minimum living guarantee, receiving 1200 yuan a year as minimum living guarantee.

Almost all villagers have the new type of rural social endowment insurance, and all villagers above 60 years old have this insurance.

Households enjoying the five guarantees: 6 households

Since the village's government has no economic sources, the village does not take measures to alleviate poverty

Employment structure: Crops are paddies and cotton, part of which is left as their food, with the rest being sold. People working for others include craftsmen and factory workers. Villagers working outside are young people, with the senior and the junior being left at home.

Women's status: Women also consist of the aged and the children, most of who are taking care of children at home and following the order of their husbands. Female villagers also participate in meetings of the village.

Industry structure: The village has no collectively-owned industry but it has mineral resources which can be used to manufacture floor tiles and ceramic tiles.

Income status: The annual average income is 2800 yuan.

There are over 100 old people (above 60 years old), paying 80 yuan for pension insurance each year

Education situations: 90% young people received middle school education or above
10%-20% graduate from high school

Village committee condition: 6 responsible persons

2. Related to this project

Are you aware of this project? --- Yes

How--- Heard from the county civilians, no instructions from the superior leaders

The environmental treatment of this village?--- There are two environmental sanitation workers in the village, with the front village and the back village both having one, and there is also one people collecting MSWs specially, who ride a vehicle and transport MSWs to a distant place, which is a mountain hole five li away from the lake, to incinerate them. Each day, two environmental sanitation

workers are assigned to clean the environment and paid 18000 yuan or 5000 yuan by the government, with the person transporting MSWs with a motor vehicle being paid 18000 yuan (diesel). Environmental sanitation workers are earnest and responsible old people selected by the village committee. Each household has a trash bin, with over 50 public ones being set at 50 densely populated places. Currently, the trash bins are not classified and they are cleared up once a day. Villagers' environmental protection awareness is relatively strong. When the person collecting MSWs calls out with a horn, they will put MSWs into the vehicle.

Benefits of constructing the around-lake road?—Improve environment, drive villagers to develop industries, meet the needs of rural development, and raise economic benefits.

Question?—Avoid MSWs being transported from dropping into the lake. Compensate road land acquisition in accordance with national compensation standards. The number of MSW transfer vehicles should be limited, and MSWs should be transferred away timely

Supportiveness of villagers to the project?—Supportive

Knowledge of villagers about the project?—Not familiar

How to inform villagers of the project?—Notify them in group meetings of villagers to enhance their environmental protection awareness. Villagers usually participate in village affair meetings actively, especially female, people enjoying minimum living guarantee, and aged villagers, and most male adults are working outside

Negative influence of MSW transfer station?— None

Suggestions?—Use the previous road behind the dam, keeping a little far away from villagers. If a new road is planned, it will involve resettlement and cost a lot.

What are the difficulties in the current work of environment improvement?—Lack of funds.

How much an environmental sanitation worker can get a month?—Amount jointly paid by villagers (20 a person, which is affordable, and the impoverished do not have to pay it) + collective income

No trainings are provided for environmental sanitation workers, and the vehicles collecting MSW are their own.

The level of the village in the township?—Poor

Measures for river pollution?—Most people have high consciousness and do not pour wastewater into the river. The river is mainly used to wash cloths and vegetables.

Demands for project?—The road needs to be renovated, with jobs being created during the construction. Land acquisition will not be a problem, which can be in accordance with national compensation standards

Special cultural customs in the village?— None

Current pollution of the village?—Zhuhu Lake is clean basically, because there is no factory, wastewater is poured in lands, and sanitary wastewater is poured in fields as fertilizer rather than being poured in the lake. In rainy days, it flows into the lake.No aquatic farms in the village. Water pollution is not serious, and the main pollutant is domestic MSWs.

(II) Interviewee: Zhou Huade, villager, 65 years old, 6 members in the family. He is selling cement in the town, the annual income of his family is about 100 thousand yuan, and his house is a four-floor one.

1. Attitude toward this project

He is not worried about the impact of MSW transfer station on his life, and he supports it very much and regards it as a necessary action.

2. Environment improvements of the village

The overall situation is fine.

3. Unsatisfied part of the village's work on environment improvement

In 2008, the sewer was not built well, which impacted the treatment of wastewater

4. Impact of the project

Advantage: After the wastewater was treated, the environment was improved.

Negative impact is minor

5. Current situation of MSW treatment

MSWs are put together rather than being classified. Villagers' awareness of protecting environment is fine. I am satisfied with the environment improvement work of the village. Village leaders supervise the work all the time, and we also regard it as our own responsibility because we will live more comfortable if the environment gets better. Currently we drink well water.

6. Requirement on the project

It is necessary to build it with good quality and quantity so that the domestic wastewater can be treated well. Compensation of land acquisition should be granted properly (demands)

7. Most rural home inns are operated by village leaders on their own

8. MSW disposal has no charges

II. Interview of Hushan Village, Taolin Xiang, Poyang County (December 6, 2015)

(I) Interviewee: Mr. Liu, villager

1. Basic household information

Six family members, working for himself, and his wife taking care of their grandson and granddaughter. His son and daughter-in-law are working outside. Their house is a three-floor one, with annual per capita income being about 50 thousand yuan. Villagers of this village are not able to grow corps because wild boars will destroy them. Both peanuts and paddies cannot grow here.

Domestic wastewater disposal

Pour it in front of the door. Feces are treated in septic tanks and then flow in small ponds, which will have no pollutions for now. Domestic wastewater is not poured in the river and the consciousness of villagers is very high.

We don't have to buy the land where we build our house, the framework of our house costs 250 thousand yuan, and it is a 3-floor single house.

(II) Interviewee: Zhou Keqing, villager, born in 1972, 44 years old

1. Personal profile

His family has 5 members, his job is forklift driver, and the time he works at home is long. His son is an excavator driver earning over 400 thousand yuan a year at most. Other family members grow corps, and when he does not have to work, he grows paddies and cotton to support his family. His family has 2-3 mu land in total, which costs 2 thousand to 3 thousand yuan to buy pesticides and chemical fertilizers.

2. Environment improvement of the village

The village is clean, and there are environmental sanitation workers. Villagers' MSWs are mainly treated at the MSW treatment pond, after which, they will be buried.

3. Not familiar with the project

4. Supportiveness to the project? Favourer

5. Impact: No impact on traffic and transportation

6. If the project needs land acquisition, do you know the relevant policies?—Heard from others.

7. What actions will you take to protect your legal right from being violated during land acquisition?—Not familiar. If there is compensation I hope it is cash and land.

8. Major affairs of the village are usually decided by villagers group who usually asks opinions

from us. Events in our village will be notified to us via phone calls.

(III) Interviewee: head of Hushan Village, Taolin Xiang (male, 54 years old)

1. Basic situation of the village

This village is a natural village, where there are over 60 households here, over 300 villagers, over 100 of whom are impoverished. For the impoverished, the town government grants subsidies to families enjoying the five guarantees and families enjoying minimum living guarantee, which ranges from 230 yuan to 150 yuan a month. The poverty alleviation measures of this village are mainly some projects, such as construction work of roads, infrastructures, squares, water improvement and toilet renovation, and so on. There are 4 rural home inns in the village, which have made large fortune for the owners, and most of the businesses are led by the village leaders who have both abilities and conditions. The inns of bigger sizes are staffed with over ten workers. There are 6-7 families enjoying minimum living guarantee in the village, including families where the major force is ill or aged or the aged have no children. There are 4 families enjoying the five guarantees, who are villagers above 60 years old without children. All villagers are in the new rural cooperative medical system, and 90% villagers have the new type of rural social endowment insurance. The annual per capita income in the village is around 4000-5000 yuan. The fishponds here are contracted by businessmen from other places. Villagers doing farm work are not many, and the land area per person is one mu and a little bit more. Corps grown here are mainly peanuts and paddies for villagers to eat. There are many villagers in this village working outside, with the aged taking care of children at home. 70%-80% of the young villagers are working outside mainly as craftsmen in Zhejiang. Women usually take care of children at home. There are no minorities in this village. The economic development of this village is on the up and middle level in the whole town. The village has 4 rural home inns. Villagers are benefited from the construction of new village, and this village is in a peninsula, reaching to Inner Zhuhu Lake, which is a good location. The construction of new village has played an important role in the planning of the village.

The village has neither collectively-owned industry nor rich resources, even in the whole town.

There are 30-40 people above 60 years old.

Most villagers receive middle school education or above.

2. Measures for improving the environment

This village is a pilot "Eco Fishing Village" in the county, and water improvement has been done. In the past, people drunk lake water, and right now, each household is equipped with a pumping well and villagers start to drink well water. Next year, the village will be provided with tap water, and the well water is clean and reaches standards without any pollution.

3. Treatment situations of domestic MSW

Living standards are raised but the amount of MSWs increases. Each household sets its own trash bin and MSWs are sent to the MSW pond in the village by themselves, and MSWs are not classified. MSWs in MSW pond will be buried eventually and next year, they will be treated at the incineration station. The village also assigns a special person to collect MSWs along the riverside for ten yuan a day. The SALary consists funds paid by the town government, self-raised money, and money contributed by villagers jointly (50 yuan per villager, all of them will pay). MSW cleaners are earnest and responsible old people above 60 years old, usually people receiving substance allowance or five guarantees, for the purpose of providing jobs and income sources for them.

Because villagers know the benefits of environmental protection, they have strong environmental protection awareness. In 2007, this village was built as an "Eco Fishing Village" funded by the county, villagers has become well-off since then, the appearance of the village attracts visitors from other places, and the business of rural home inns develops very well.

4. Ecological Environment Assessment of the Village

Pretty good. The current problem is wastewater treatment, and most wastewater is poured in the fields because the lack of wastewater collection and treatment system.

The only waterworks near this village is near the township government, and villages using tap water are not many.

5. Planning of the village development

This village is not concentrated, with villagers developing independently, and currently, there is no development plan for this village. However, it develops very well based on rural home inns. Village leaders are supported to operate rural home inns first, and later, many villagers follow up.

6. Attitude towards the project

Support it. But this project is not concentrated, with a relatively large number of projects getting involved.

Cause: With people's living getting improved, environment hygiene should also be improved.

7. Knowledge of villagers about the project? Villagers are not familiar with it

How does the village committee make villagers know this project?—Hold villagers' assembly to introduce environment improvement work and project contents to villagers and mobilize them.

8. Influence of this project

Advantage: It is good for the environment and it is a people-benefit project

Disadvantage: Safety of the construction road, and potential smell

9. Requirement on the project

MSWs should be transferred away timely. Capital investment should be increased. Wastewater treatment does not involve land acquisition but MSW transfer station needs land, which would not be paid by individuals. Each household should build a blind ditch to lead wastewater to the wastewater treatment facilities.

The location of the MSW transfer station should be far away from the residential area and within the collective land, and if there is no collective land, the method of land use should be acquisition or leasing.

Later, the town should be responsible for managing the MSW transfer station.

10. Advice on the project

There is no problem. It should be noted that before design and plan, the communication with the town government should be enhanced. The township's party committee and government know villagers most, and plans should be developed based on the specific situation of different villages, otherwise problems will come up during the implementation. Once involving land matter, the construction of MSW transfer stations will meet difficulties. The MSW transfer station covers over 100m², a relatively large area, and currently, as long as the villagers don't have to pay money or hand over land, they will be supportive. Land acquisition is the major problem.

11. Introduction of Zhuhu Lake

On both shores of the lake, there are agricultural lands growing crops

Main purposes of Zhuhu Lake: Fishing, fish farming, water transport (private business), irrigation, domestic water, and aquaculture

Since Zhuhu Lake is owned by all villagers, the access to Zhuhu Lake is not limited but other activities are forbidden, such as exploitation and production activities. It is forbidden by national policies.

III. Government FGD of Poyang County (December 7, 2015)

(I) Development and Reform Commission

1. Project introduction

With 250 million – 260 million investments in total, this project is mainly to protect Zhuhu Lake, reduce surface source and point source pollution to the water body. The construction work includes wastewater collection, MSW collection and transfer, and non-project measures (barges and salvage ships) of four villages along the lakeside, as well as the construction of MSW transportation road between the levee of Zhuhu Lake and the wetland park.

It is not allowed to discharge the wastewater to the Outer Zhuhu Lake, and the key point of the scheme is the MSW transportation road.

The village plans to build small ditches rather than pipe network so as to avoid land disputes. Wastewater will be intercepted and collected to the oxidation pond for treatment before being discharged to the pond nearby, with wetland being built. After the purification, there will be no pollution.

Land acquisition: Work involving privately-owned lands will become difficult. The road will involve a small scope of land acquisition and resettlement, which should be avoided as much as possible. An interception ditch should be built on the side of the road closed to the village, which can avoid Zhuhu Lake from being polluted. Along the lakeside, ecological plants should be planted.

2. Publicity

Publicity should be done vigorously with the help of the town government and the village committee, such as slogans and symposiums. It is better to build a MSW pond for construction MSWs which should be in line with village rules. In the future, regulations should be prepared to restrict behaviors of villagers. Violation against rules should be punished.

3. Trainings

There are people specially assigned to provide trainings, with representatives being selected from group members for trainings. Learn experience from the training mode of China's modern agricultural projects. It is necessary to push town government and village committee which are more powerful and efficient in work.

4. Water supply Company

It is necessary to build a waterworks. Currently, the treatment capacity of WWTP is 20 thousand ton a day, and the rainwater and the wastewater are not separated due to the low concentration.

5. Site selection consideration of MSW transfer station

In this project, 4 MSW transfer stations will be built, involving 4 towns, with the specific locations being coordinated with these towns.

① The positions should be convenient for the transportation of MSWs as well as closed to MSW landfill

② They should avoid impact on residents' life, and the pollution near the transfer station should be alleviated

③ A MSW transfer station covers 200m², and each household has one trash bin

6. Staffing

It is planned to build a environmental protection station for Zhuhu Lake, with the operator (a company or the government) being further discussed later. Supervision should be done over all aspects, such as MSWs, wastewater, aquaculture, and water and soil conservation, and the staffing matter should be discussed with the county government. This measure can ensure the continuity of project by doing the operation and the later management of the project well.

7. Problems faced by the project

The plan and the route should be determined and the specific environmental protection facilities should be practical, durable, and functional. The keys are the construction of the road

network, the layout of MSW transfer stations, and the cost of land acquisition and demolishing. The construction of road should be the priority.

8. Wastewater treatment charge

The government should charge no fees while if it is operated by a company, there should be a standard. If the fee is too high, villagers will not use tap water.

(II) Deputy Director of the Environmental Protection Bureau

1. Advice: A WWTP should be built, with wastewater flowing through the main pipe network, and at the Outer Zhuhu Lake, a wastewater treatment station should be built to drain the treated wastewater to the Outer Zhuhu Lake. Meanwhile, the technique and management of this station should be good enough. It is recommended to build a wastewater interception pipe network around the lake to intercept wastewater entirely and detour the wastewater around Zhuhu Lake to be treated. The pollution reduction effects of oxidation ponds are not apparent and needs to be managed regularly. The wastewater pipe network can be set along the roadside, and it is fine if the pipes are in twists and turns. Clearances in villages should be made use of, and the investment should be increased. It is necessary to intercept the pollution first before disposing it. The Environmental Protection Bureau is responsible for the supervision. Based on the difficulties of the project, the project can be planned at one time and then implemented by stages. The government should take more responsibilities and duties.

2. Current problems of the project: Currently, the wastewater is drained to Inner Zhuhu Lake, and some pollution still remains in the water after being treated.

The function of Outer Zhuhu Lake is different, Zhuhu Lake is a water vat, and Poyang Lake is a reservoir. Provide optimized opinions for the design.

① Poyang Lake should be protected, because Zhuhu Lake is a branch of Poyang Lake, providing drinking water for people. Detouring the wastewater around the lake considers the priority of the work.

② The current arrangement does not improve the water environment very well

③ The water quality of Inner Zhuhu Lake gets worse and worse. Last year, blue-green algae were everywhere due to eutrophication of the river, impacting drinking water and causing particular smell to tap water. The Environmental Protection Bureau organizes people to clear the lake up.

3. Concerns: The amount of investment to wastewater interception pipe network will be a large number, and the project will be difficult, but the pollution reduction effects will be better.

4. Work undertaken: Supervise work related to wastewater and environmental protection as well as develop plans

5. Publicity: We will do the publicity widely, with the town publicizing “the construction of a new village”. The cleanness of the village’s appearance is a vital part, which needs the publicity of the town as well as the mobilization of villagers’ consciousness. Establish a restriction mechanism based on villagers’ consciousness.

6. Measures: Collection and treatment of MSWs and wastewater should be done in a concentrated manner by the government, and if the work is done by villagers, it might be unable to achieve the goal. In this way, the treatment effects will be better, and the goal of being durable can also be realized. In the design process, this work should be guaranteed by the government. The Rural Work Sector should be responsible for the construction of new villages of the town. The wastewater should be treated in a concentrated manner. Otherwise the work cannot be controlled very well.

(III) Land and Resources Bureau

1. Land acquisition standard: The provincial government document 2015871 (accessible

online) should be in accordance with, and no rules are issued by the county government, which can be checked online. Implemented based on GF ZI [2015]81 Document.

2. Standard of road construction: For roads shorter than 6.5m, approval procedures are not needed, and such roads can be constructed as per the management rules for rural road construction rather than being limited by quota. But land acquisition procedures are necessary. Roads longer than 6.5m should be submitted for approval and the compensation system for farmland occupation should be implemented.

3. Compensation should be paid to the bank accounts of residents.

Advice: ① Land acquisition should be in line with a strict standard, the town government should take the responsibilities, and the basic farmlands should be protected largely; ② The road surface (5m) plus the roadbed are 6.5m in total; ③ The location of the MSW transfer station should be at the downwind part; ④ The land acquisition should avoid damages to villagers' graves as well as disputes with villagers

Possible problems: Land acquisition will be involved, the land ownership is not clear, and compensation should be done for controversial lands.

(IV) Zhuhu Lake Administration Bureau

1. Advice

Standards for a flood storage area should be implemented so as to avoid the flood storage capacity which includes the capacity of six towns.

The construction work will exceed 25m.

2. Problems in the project:

Site selection question: Coordination should be done for the planning, and resettlement should be avoided. The location of the flood storage area should be considered. During the transportation of MSWs, protection should be taken for MSWs and the vehicles should be sealed. The party bearing the transportation cost, which is high, should be determined.

(V) Municipal Planning Bureau

1. Opinions on the project

We participated in the project in the past, and, to clear up the water, we support it very much

2. Assistance provided

Complete coordination in the work, the planning drawing of the town, and the direction of the layout.

3. Difficulty

There are gaps between the planning and the reality. Currently, villagers here pour MSWs and wastewater into the lake directly. At the beginning of the implementation, the management might be prudent, but if the work later becomes poor, the improvement work for water environment will still have problems. If the MSWs are not cleaned or transferred timely, the place where the MSW transfer station is built will be polluted.

4. Advice

① Enhance villager's consciousness of environmental protection and design plans convenient to villagers rather than bringing troubles to them.

Currently, villagers behave based on convenience. If dumping MSWs remains inconvenient, they will keep dumping them in the river.

② Construction work should be restricted and houses should be restricted to be built near rivers and lakes so as to protect water sources

③ Instead of being conceptual, leaders should think from the perspective of villagers

④ The construction of the project should be practical and realistic. The road should be

maintained properly and the planning should be made in a long term

- ⑤ There should be no impact on people's life
- ⑥ The cleaning and transport done by MSW transfer vehicles should be timely.
- ⑦ In early state, opinion poll should be done. Sometimes, the MSW transfer road is not only

for MSW transfer vehicles but also for villagers, so it is not convenient for MSW transfer vehicles.

(VI) Urban Management Bureau

1. Necessity of the project implementation

The project is good because water problem will impact our drinking water.

2. Advice

The MSW landfill is under construction, the capacity of which is satisfactory. But in the early stage, villagers should classify construction MSWs which cannot be poured in it and domestic MSWs which can be compressed. Trash bins only contain domestic MSWs, and classification should be done.

3. Problem

① The classification of MSWs has not been done properly by the town; ② In the design of road, problems should be considered, such as smell given off when vehicles are driving in the village, which increases the cost of management and operation; ③ Route direction; ④ Water quality problems should be confirmed in the early stage.

(VII) Ecological Wetland Park

1. Attitudes and Suggestions

We support it. This project plays a positive role for both our Poyang Lake and the expansion work of the scenic spots and routes of our wetland park.

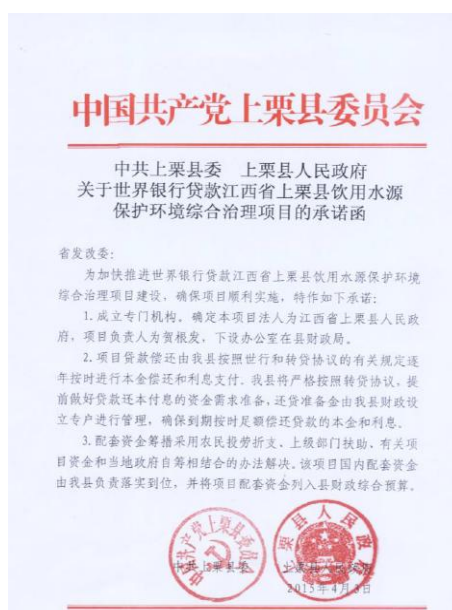
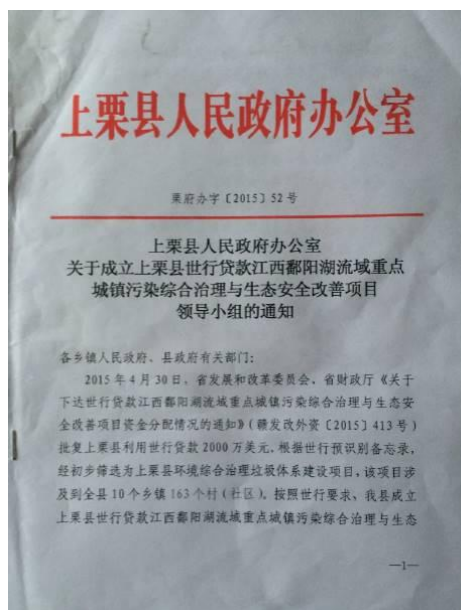
Provide necessary support in the land acquisition of the town

2. Current actions

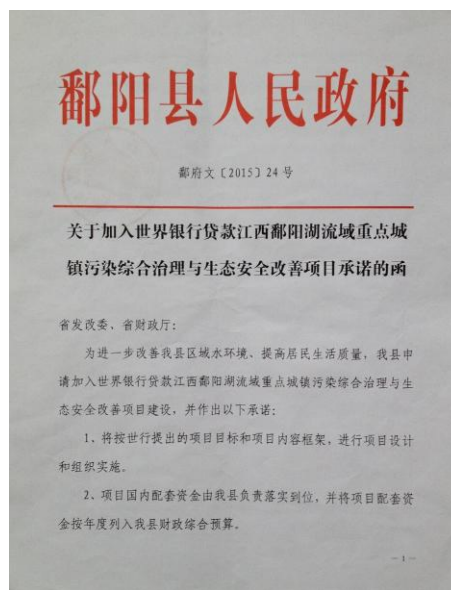
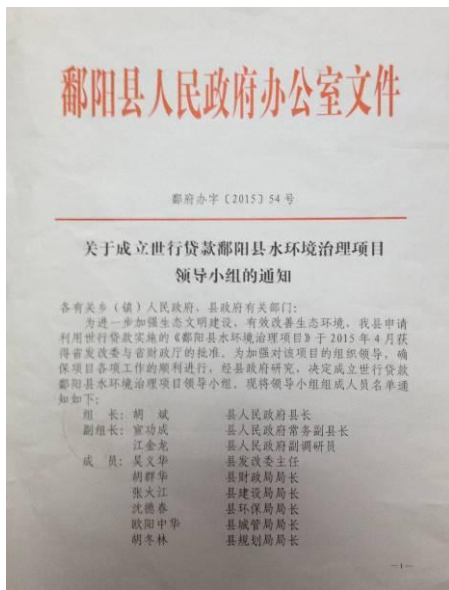
The wetland park, as an important popular science base for teenagers, has been visited by teenagers frequently, which is an opportunity for use to teach them popular science knowledge. For example, currently in winter, we attract migratory birds by providing them food due to the impact of the Three Gorges Dam.

7. Photos of public participation

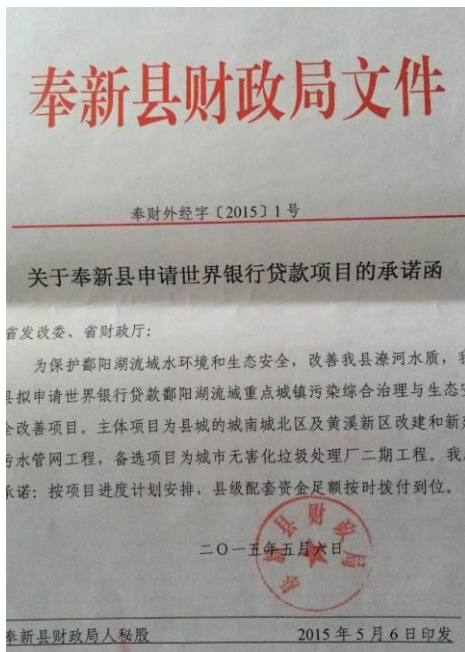
I. Project preparation



Establishment document of the project leading group of Shangli County
Letter of commitment of the Shangli County Government



Establishment document of the project leading group of Poyang County
Letter of commitment of the Poyang County Government

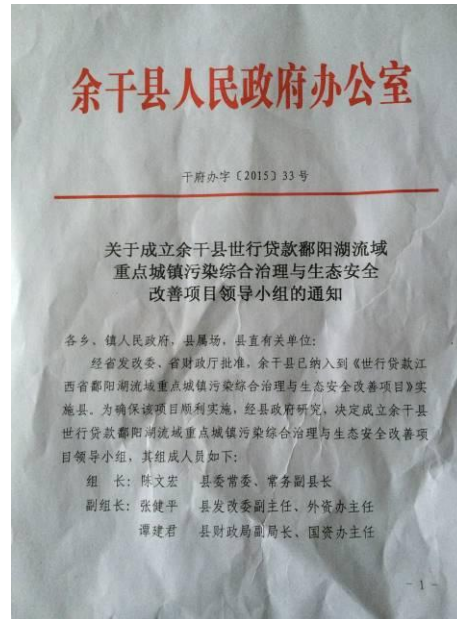
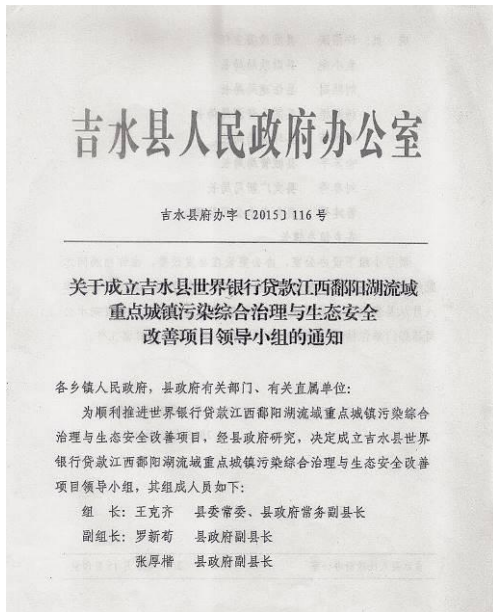


奉新县项目还本付息计划表

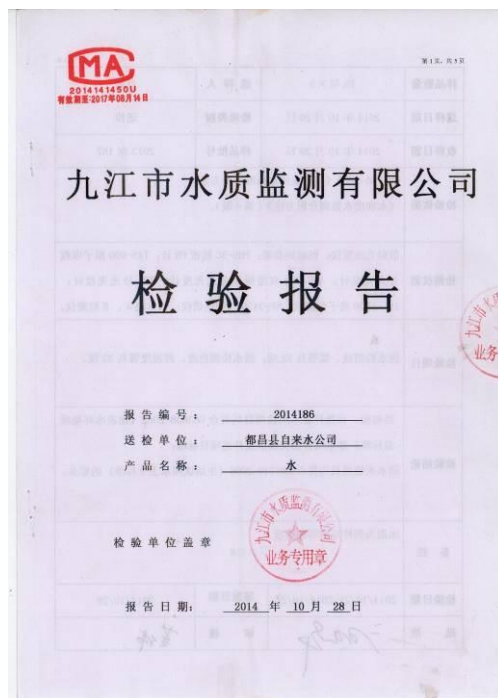
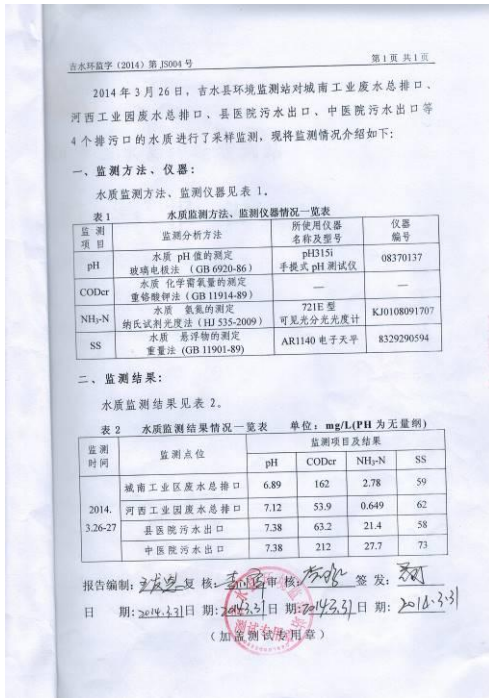
年度	投资总额	使用累计	贷款利息	每年还本付息合计
第一年	100	100	0.8	0.8
第二年	1000	1100	9.0	9.0
第三年	900	2000	15	15
第四年			30	30
第五年			30	30
第六年			30	30
第七年			83.33	28.75
第八年			83.33	27.5
第九年			83.33	26.25
第十年			83.33	25
第十一年			83.33	23.75
第十二年			83.33	22.5
第十三年			83.33	21.25
第十四年			83.33	20
第十五年			83.33	18.75
第十六年			83.33	17.5
第十七年			83.33	16.25
第十八年			83.33	15
第十九年			83.33	13.75
第二十年			83.33	12.5
第二十一年			83.33	11.25
第二十二年			83.33	10
第二十二年			83.33	8.75
第二十四年			83.33	7.5
第二十五年			83.33	6.25
第二十六年			83.33	5
第二十七年			83.33	3.75
第二十八年			83.33	2.5
第二十九年			83.33	1.25
第三十年			83.33	0.00
合计	2000	2000	499.8	249.8

注：假定贷款期限30年，其中宽限期6年，贷款按每年等额还本，年利率1.5%。

Letter of commitment of the Fengxin County Government
Project loan repayment plan of Fengxin County



Establishment document of the project leading group of Jishui County
Establishment document of the project leading group of Yugan County



Environmental monitoring data of Jishui County
Water quality monitoring report of the Duchang County waterworks

II. Organizational participation during SA

会议签到表				
项目名称: 世行贷款上栗县项目				
会议时间: 2016.5.10. 会议地点: 上栗县会议室				
序号	姓名	电话	职务	单位或住址
1	李乙	1522890089		省外望办
2	李云山	1387298527		世界银行
3	孙杰	1890585522		
4	袁华	1260162205	副科长	上海城建院
5	袁华	1391051825		北京泰诚嘉宇
6	袁卫东	18007992807	副局长	上栗县环保局
7	袁建国	15180154530		江西赣煤设计院
8	袁华	15170069029		上海城建院
9	袁华	1827711577		
10	曾斐	1367999633	副局长	上栗县住建局
11	潘慧林	1397995273	副书记	县委办-潘胡
12	袁华	130799011	副局长	国土局
13	袁华	1380779984	局长	水务局
14	袁华	13907910631	局长	上栗县环保局
15	袁华	1387995989		
16				

Minutes of FGD with the Shangli County Government

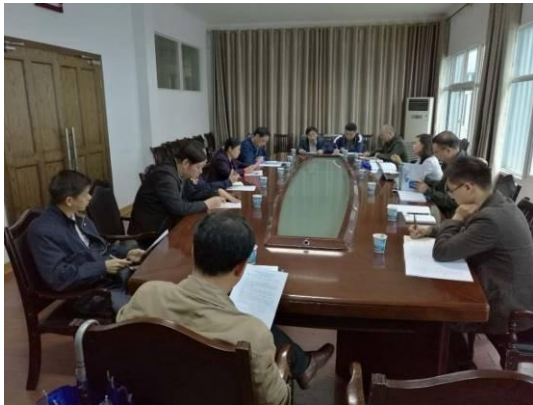
Minutes of FGD with the Poyang County Government

签到表		
单位	姓名	联系电话
市监局	周书双	15179372333
财政局	袁华	15079574068
水务局	袁华	13879370737
国土局	袁华	15270351773
环保局	袁华	18077922001
水利局	袁华	13707026163
上海大学	袁华	15366141153
河海大学	袁华	1528557722
省项目办	袁华	1387072216
北京中咨华宇环保	钟鹏鸣	13907915120
北京中咨华宇环保	张笑辰	15879192358
袁华	张建平	13307036798
袁华	程继高	13755317680
袁华	袁华	15979376228
袁华	张益安	18046614207
袁华	袁华	1904661425
袁华	江琴女	15970370920

Minutes of FGD with the Yugan County Government

Minutes of FGD with the Jing'an County Government

签到内容	
袁华	18970022782 (环评)
袁华	15251816899 (环评 河海大学)
袁华	18652937137 (环评 河海大学)
袁华	1890585522
袁华	15180159530 (勘测)
袁华	12607067005
袁华	13970023773
袁华	13870521682
袁华	15879885263 (环保局)
袁华	15070580952 (城建局)
袁华	13578563563 水务局
袁华	13579511132 水利
袁华	18770853086 环保局
袁华	13879576646 28团县委



Minutes of FGD with the Jing'an County Government
Interview in Shuangxi Town, Jing'an County

III. Public participation during SA



Questionnaire survey in Jishui County

Questionnaire survey in Shangli County

Interview in Fengxin County



Villagers' FGD in Beishan Xiang, Duchang County

Villagers' FGD in Tuanlin Xiang, Poyang County

IV. Field visits during SA



Zhuhu Lake embankment



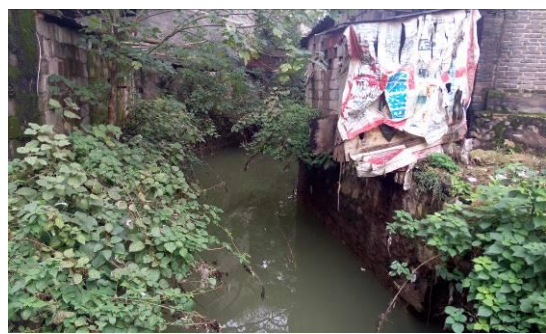
Drawing of Yugan County



Field visit in Fengxin County



Site selection for MSW transfer station in Wangdun Xiang, Duchang County



Urban wastewater in Jishui County



Village pond pollution in Duchang County



Wastewater discharge in Fengxin County



Site selection for MSW transfer station in Shangli County

Appendix 3: Collected Construction Range Maps of the Project Counties

County	Scope of construction
Shangli	<div data-bbox="275 260 943 1016"> </div> <div data-bbox="958 248 2121 408"> <p>[Note] In Shangli County, special funds have been applied for the construction of MSW collection and transfer systems in Shangli Town, Jinshan Town, Jiguanshan Xiang and Tongmu Town, so the Bank loan will be used for the construction of MSW collection and transfer systems in Changping Xiang, Futian Town, Penggao Town, Dongyuan Xiang, Chishan Town and Yangqi Xiang only.</p> </div>

Figure 2-1 MSW collection and transfer systems in Shangli County

Yugan

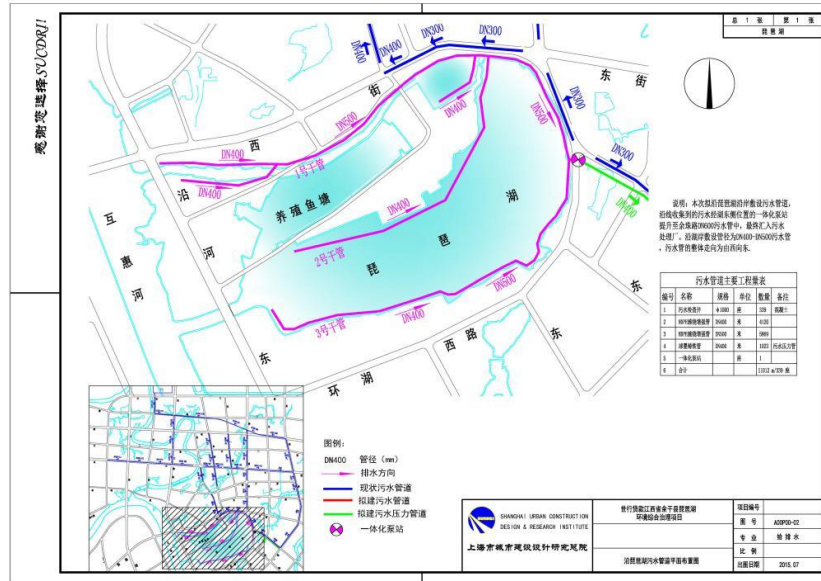


Figure 2-2 Sewer lines along Pipa Lake

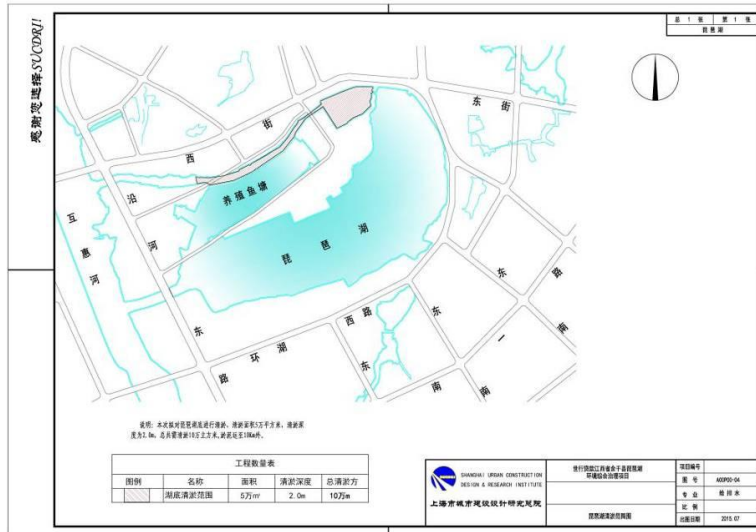


Figure 2-3 Dredging of Pipa Lake

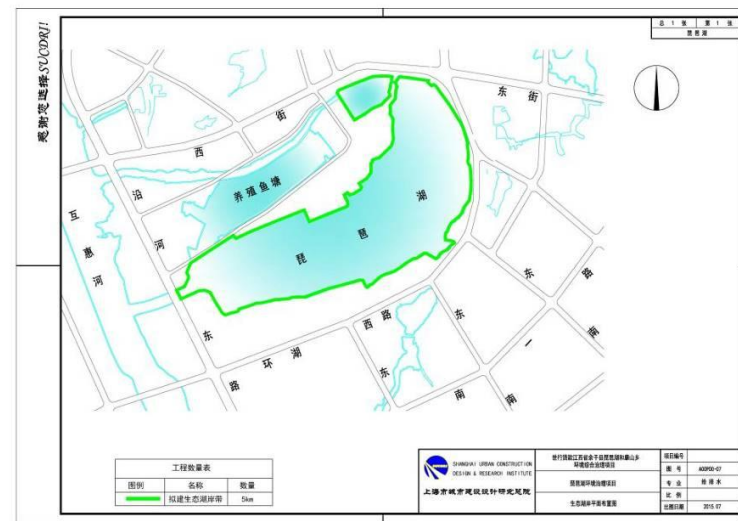


Figure 2-4 Pipa Lake embankment

Poyang

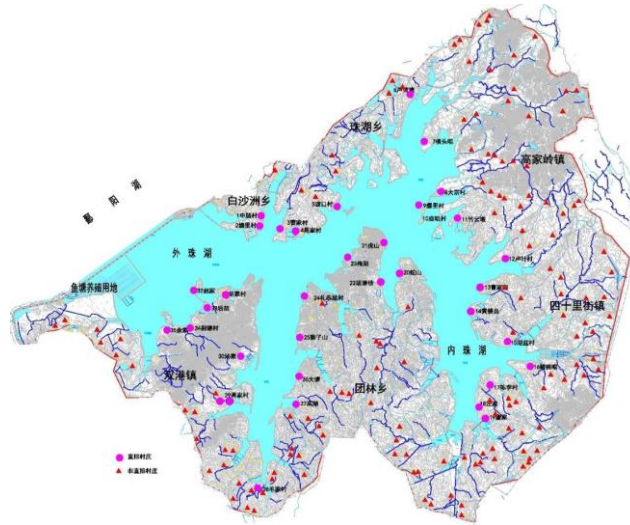


Figure 2-5 Distribution of pollution sources around Zhuhu Lake

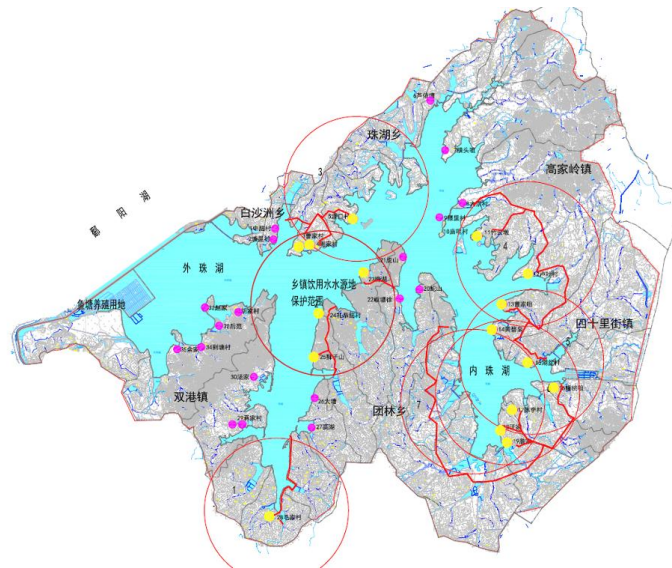


Figure 2-6 Outlet design drawing

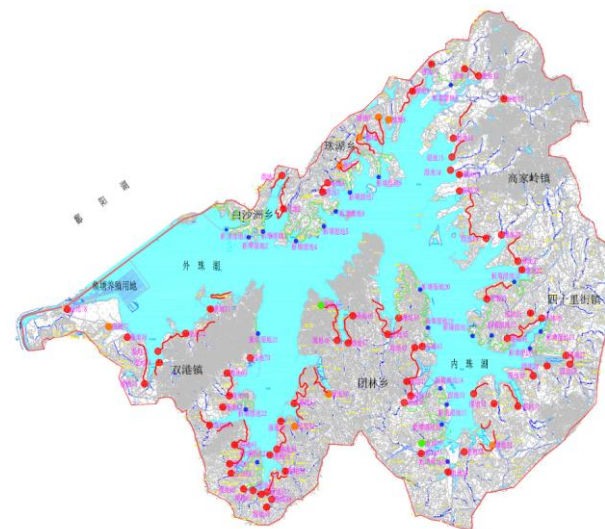


Figure 2-7 Ecological rehabilitation of Zhuhu Lake

Fengxin

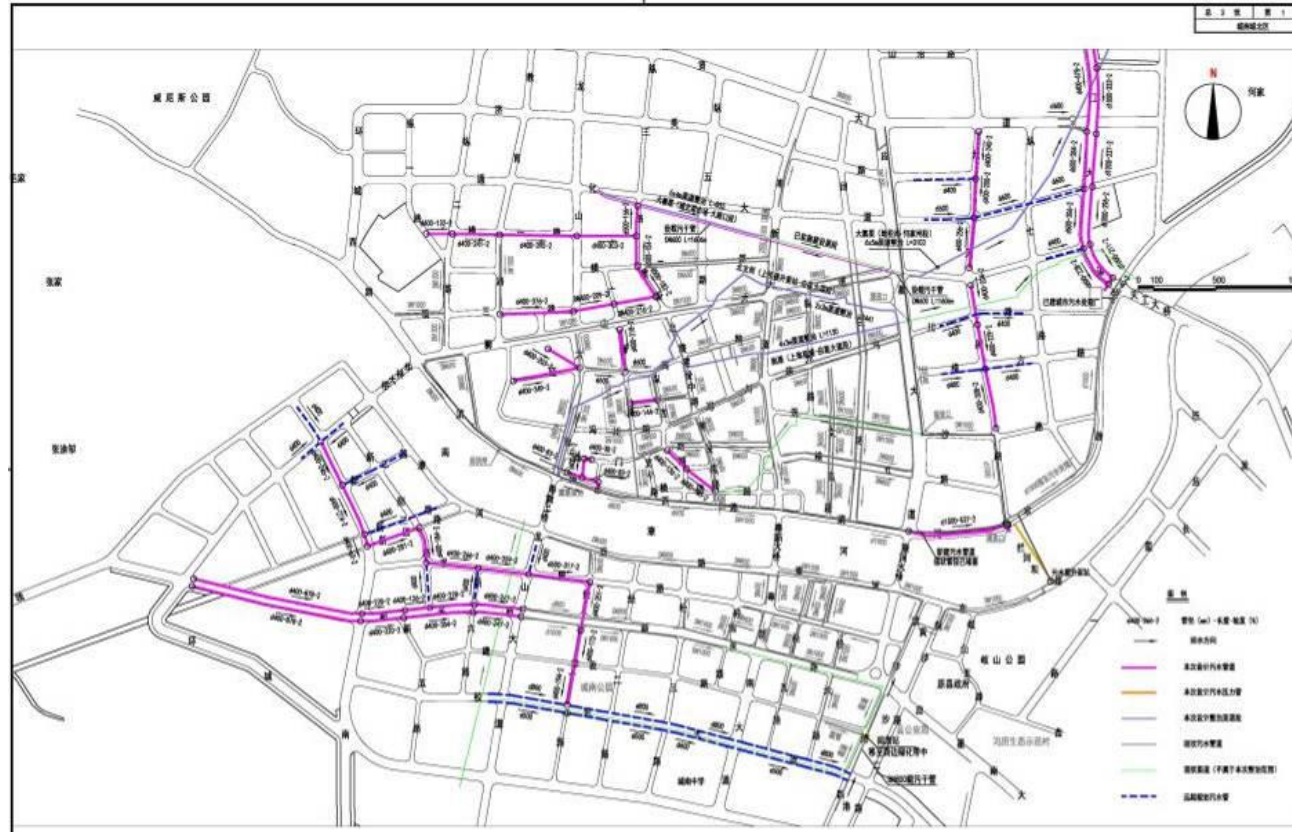


Figure 2-8 South and north sewer networks

Jishui

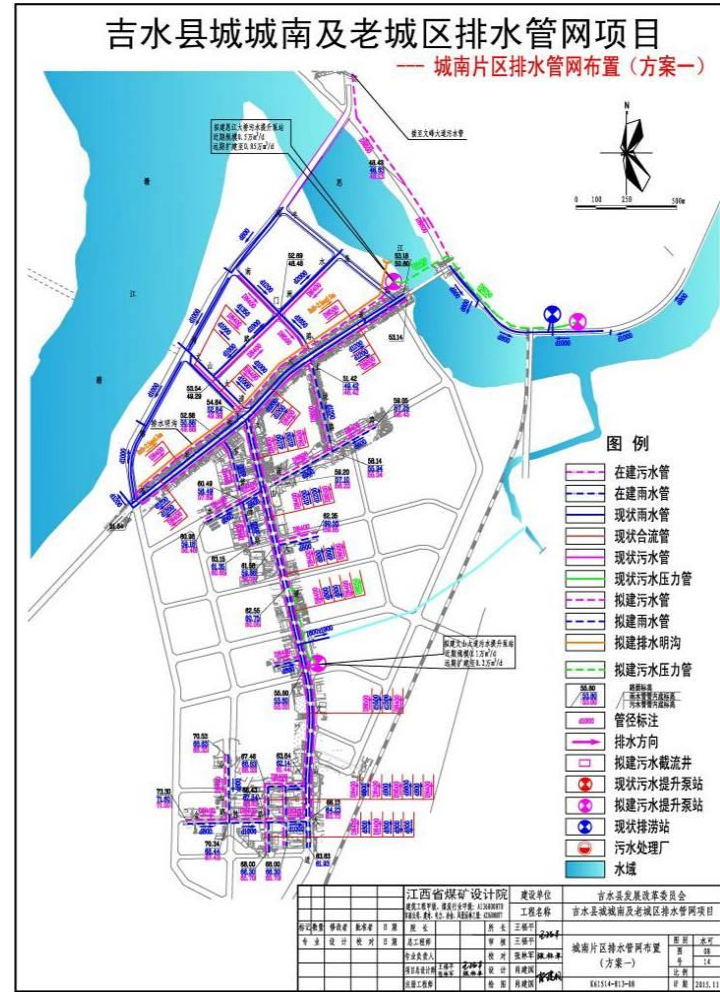
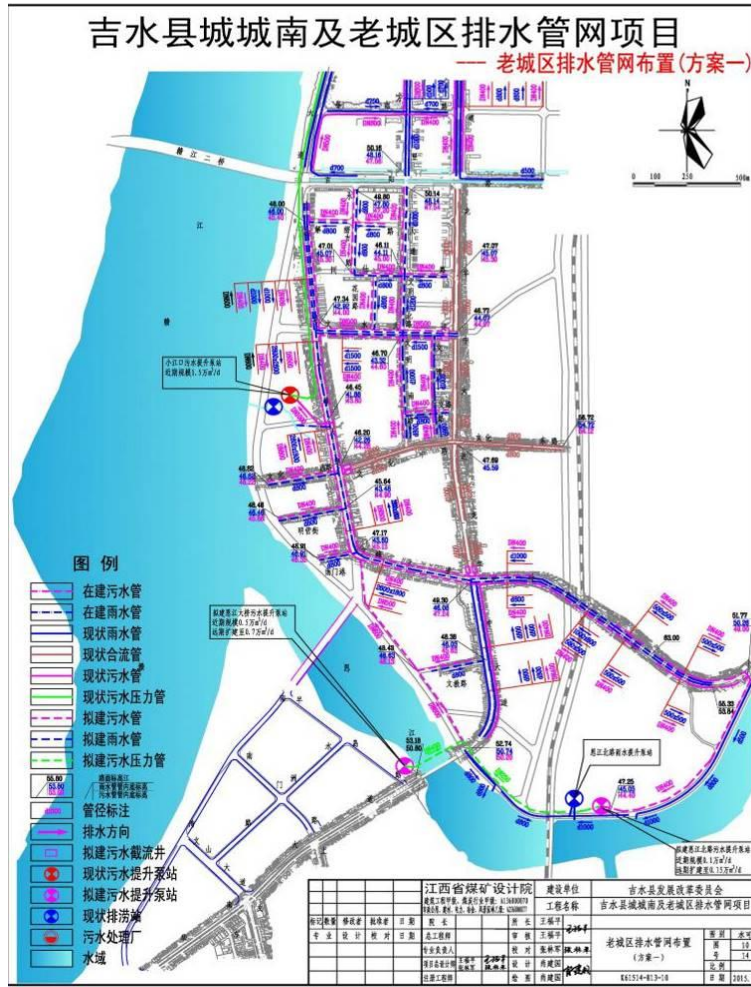


Figure 2-9 Sewer network of old urban area Figure 2-10 Sewer network of south area

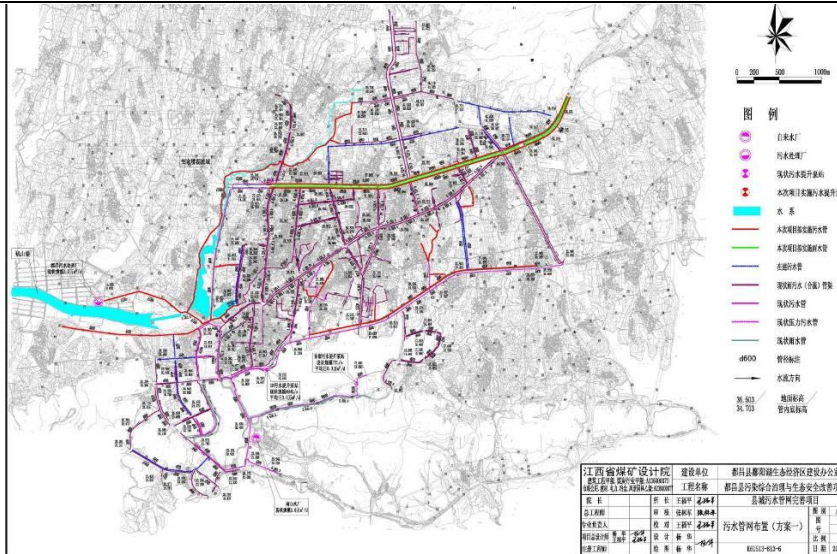


Figure 2-11 Sewer network of north area



Figure 2-12 MSW transfer stations in 3 townships

Duchang

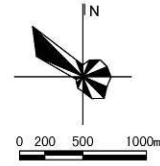
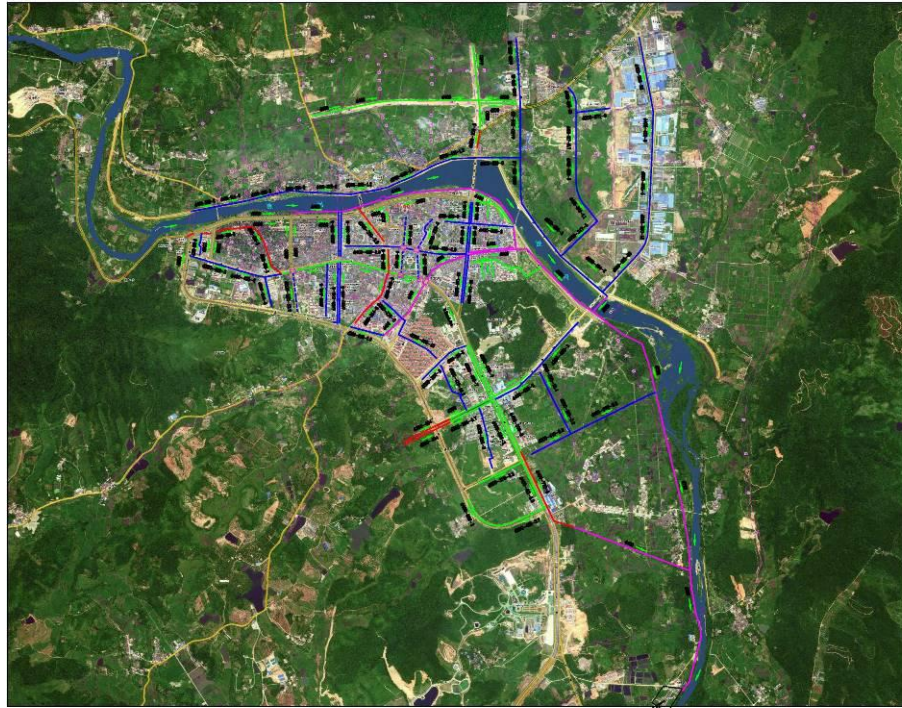


Figure 2-13 Ecological rehabilitation of Zoujiazui Lake

Jing'an

靖安县城排水管网改造及垃圾收运工程

——污水管网布置影像图



图例

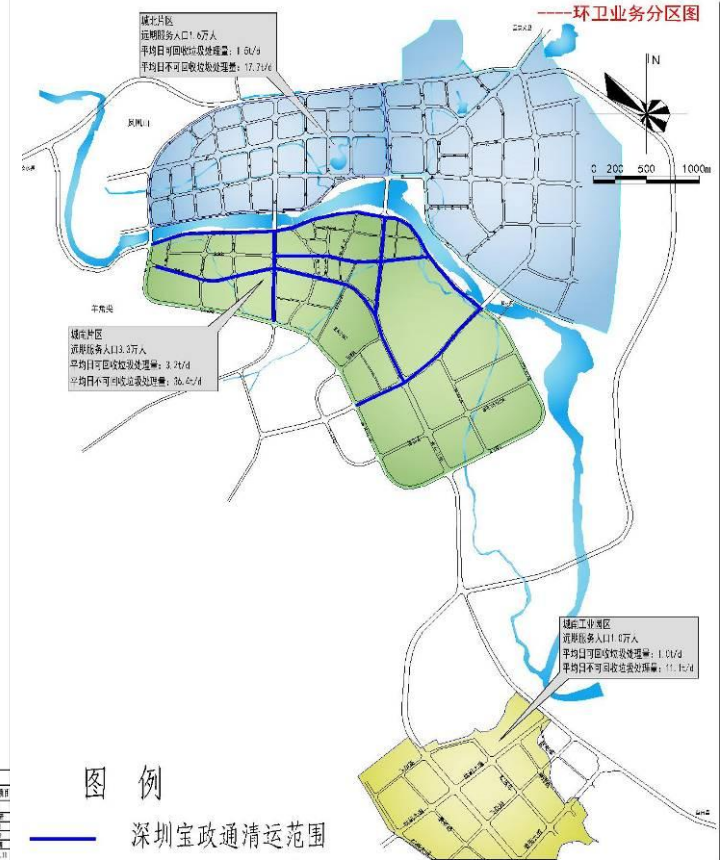
- 现状截污干管
- 现状合流管
- 现状污水管
- 正在实施污水管
- 设计污水管
- 设计合流管
- 截流井
- 管径-管长-坡度
- 排水方向

污水处理厂
建成规模: 1.0万m³/d
远期规模: 2.0万m³/d

江西信通设计有限公司		建设单位	靖安县委县政府
江西信通设计有限公司		监理单位	靖安县委县政府
江西信通设计有限公司		设计单位	靖安县委县政府
江西信通设计有限公司		施工单位	靖安县委县政府
江西信通设计有限公司		监理单位	靖安县委县政府
江西信通设计有限公司		设计单位	靖安县委县政府
江西信通设计有限公司		施工单位	靖安县委县政府
江西信通设计有限公司		监理单位	靖安县委县政府
江西信通设计有限公司		设计单位	靖安县委县政府
江西信通设计有限公司		施工单位	靖安县委县政府
江西信通设计有限公司		监理单位	靖安县委县政府

Figure 2-14 Urban confluent sewer lines

——环卫业务分区图



图例

深圳宝政通清运范围

Figure 2-15 Environmental sanitation zoning in Jing'an County