

Project Administration Manual

Project Number: 45022-002
November 2014

People's Republic of China: Jiangxi Ji'an Sustainable Urban Transport Project

The project administration manual is an active document, progressively updated and revised as necessary, particularly following any changes in project costs, scope, or implementation arrangements. This document, however, may not reflect the latest project changes.

Asian Development Bank

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Project Administration Manual Purpose and Process

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Ji'an Municipal Government (JMG) and Ji'an Urban Investment and Development Company (JIDC) are wholly responsible for the implementation of ADB financed projects, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by JMG and JIDC of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At Loan Negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the legal agreements. Such agreement shall be reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the PAM and the Loan Agreement, the provisions of the Loan Agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP) changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

Abbreviations

ADB	=	Asian Development Bank
BRT	=	bus rapid transit
EA	=	executing agency
EIA	=	environmental impact assessment
EMP	=	Environmental management plan
GAP	=	gender action plan
GEF	=	Global Environment Facility
JIDC	=	Ji'an Urban Investment and Development Company
JMG	=	Ji'an Municipal Government
IA	=	implementing agency
ICB	=	international competitive bidding
JPFDP	=	Jiangxi Provincial Finance Department
km	=	kilometer
LAR	=	land acquisition and resettlement
LIBOR	=	London interbank offered rate
M&E	=	monitoring and evaluation
NCB	=	national competitive bidding
NMT	=	non-motorized transport
PAM	=	project administration manual
PLG	=	Ji'an Municipal Project Leading Group
PMO	=	Project Management Office
PRC	=	People's Republic of China
RP	=	resettlement plan
RRP	=	report and recommendation of the President to the Board
RSAP	=	road safety action plan
SDAP	=	social development action plan
SOE	=	statement of expenditures
SPS	=	Safeguard Policy Statement
TOR	=	terms of reference

I. PROJECT DESCRIPTION

A. Project Rationale, Location and Beneficiaries

1. Sustainably supporting rapid urbanization is a key development challenge in the People's Republic of China (PRC), where over 100 million people are expected to urbanize between 2014 and 2020. Such a mass migration will require a major expansion of smaller cities such as Ji'an to relieve development and environmental pressures on existing urban centers and provide economic opportunities and higher incomes for the large population of poorer rural residents. Investments in urban infrastructure, transport, and related services are necessary to accommodate development in third tier cities. The PRC needs examples of good practice in sustainable transport to demonstrate to other cities the benefits of supporting and prioritizing public and non-motorized transport while providing safe and efficient urban road development in expanding urban areas.

2. Ji'an is located in the central part of Jiangxi Province, along the Ganjiang River. The city is a provincial level municipality of 4.9 million people of which 41.6% are urban residents. Economically, Ji'an lags behind nearby provinces and remains relatively poor. In 2012, per capita disposable income was CNY20,282 (\$3,253) compared to the national average of CNY38,460 (\$6,169). Incomes have been rising rapidly in recent years but remain just over 50% of the national average. Ji'an has five national poverty counties.

3. Ji'an is a major center for tourism in the PRC. Its hinterland includes the Jinggangshan National Scenic Area that draws large numbers of domestic tourists most of whom arrive by railway and long distance buses. Ji'an is considered one of the most important areas for revolutionary history in the PRC and a major draw for so called "red tourism."¹ The government has been actively supporting the development of "red tourism," in part, to promote socio-economic development in areas which are generally more rural and poorer than coastal areas of the PRC. The city is also home to a large university and an expanding manufacturing base for electrical equipment.

4. Ji'an is located 210 kilometers (km) from Nanchang (the provincial capital) to the north and 600 km from Guangzhou (the provincial capital of Guangdong Province) to the south. The existing Jing-Jiu Railway (Beijing-Kowloon, Hongkong) and G45 Expressway (Daqing-Guangzhou) have formed the backbone of the regional transport network in Ji'an. The Chang-Ji-Gan high-speed passenger railway line is now being planned with a station expected to be constructed about 4 km west of the currently developed urban district in Ji'an. Once operating, Ji'an will become better connected to fast-growing and relatively prosperous cities in Guangdong Province and the provincial capital of Nanchang. The opening of the new railway offers a significant opportunity to improve the economy of Ji'an by better integrating the region into the dynamic economy of the southern PRC and by enabling further development of tourism.

5. The city is typical of emerging third-tier cities in the PRC and offers an opportunity to demonstrate more sustainable urban transport development, in line with the PRC's urbanization strategy adopted by the Third Plenum of the Chinese Communist Party (November 2013). The urban district where the project is located had a population of 550,000 in 2013 and is planned to reach 750,000 by 2020 and over 1 million by 2030. To accommodate planned growth, the city has been rapidly expanding its developed urban area. The planned development of the new

¹ Red tourism refers to tourist travel to locations with historical significance to the development of communism in the PRC.

high-speed rail line serves as the focal point for a major new development area on the west side of Ji'an. The railway is expected to be operating by 2020 and will require road and related urban infrastructure access for construction and future development in the urban district surrounding the new station. This new development area is expected have more than 150,000 residents by 2030. To realize the opportunity presented by the new railway, sustainable urban transport infrastructure, systems and services are required to serve this new area and provide an efficient and low-cost means for local residents to access the new railway station and the employment opportunities expected to be developed nearby.

6. The existing public transport system in Ji'an is inadequate to serve the needs of a developing third-tier city and will require substantial investment to enable it to improve its efficiency and expand its services to the new development area. The bus system transported about 111,000 passengers per day in 2013 and has been growing at about 7% per year since 2009. Buses are not given priority resulting in relatively slow and unreliable service. Public transport services in the city center are being affected by growing traffic levels resulting in declining operating speeds and longer travel times. Traffic signals are manually controlled and uncoordinated resulting in added delays on heavily traveled roads. Bus stops and multimodal connections at existing transport facilities are inadequate, poorly designed, and inconvenient for passengers. The multimodal connection to the Ji'an Railway Station is unorganized, provides no service information, no weather protection, and requires passengers to navigate a long stairway with luggage, which is particularly difficult for women with children, the elderly and disabled.

7. Ji'an needs to change its approach to urban transport to avoid an unsustainable future. Substantial capacity expansion and quality improvements are needed to meet demand from the existing population and the future demand that will be created by planned urban expansion. If Ji'an is to develop sustainably, public and non-motorized transport must be improved and given priority to ensure sustainable transport modes provide convenient and cost-effective service and prevent excessive motorization, congestion and pollution.

8. The proposed project is aligned with the key thrusts of Asian Development Bank's (ADB) assistance to the PRC under the country partnership strategy² in the areas of: (i) inclusive growth and balanced development—by promoting urbanization, and (ii) resource efficiency and environmental sustainability—by promoting efficient and sustainable urban transport and transit-oriented development.³ The focus on public transport and multi-modal integration fits well with ADB's Sustainable Transport Initiative (STI).⁴ Through STI, ADB has identified urban transport, climate change, road safety and social sustainability as key opportunities. The proposed project will comprehensively address these opportunities and position ADB to increase its support for sustainable transport in the PRC. The project also supports the urbanization strategy for Jiangxi that has been prepared under TA 7036-PRC: Provincial Development Strategies for Selected Provinces in the Central Region.⁵

² ADB. 2012. *Country Partnership Strategy: People's Republic of China, 2011-2015*. Manila.

³ Transit-oriented development refers to mixed-use residential and commercial areas designed to maximize access to public transport and facilitate pedestrian movement. A transit-oriented development is typically centered on a transit station (train station/metro station/bus terminal), surrounded by relatively high-density development with progressively lower-density development further from the high capacity public transport facility.

⁴ The STI, which was approved by ADB management on 20 July 2010, has set a new direction for ADB's transport sector efforts to promote more environmentally and socially sustainable transport solutions in DMCs in line with ADB's *Strategy 2020*.

⁵ The Asian Development Bank (ADB) provided project preparatory technical assistance: ADB. 2007. Technical Assistance to the People's Republic of China for Provincial Development Strategies for Selected Provinces in the Central Region (TA 7036-PRC).

B. Impact and Outcome

9. The impact of the project will be an efficient, inclusive, and sustainable urban transport system in Ji'an. The outcome of the project will be efficient multimodal access to major activity centers in Ji'an. Through the proposed project, the new high-speed railway station and surrounding new development area will be linked to the existing city with well-designed multimodal transport infrastructure, greenway development, and integrated public transport services. The existing public transport network will be improved through a prioritized bus rapid transit (BRT) system and upgraded multimodal connections. This will reduce transport costs, increase the efficiency and attractiveness of the public transport system, expand travel opportunities and regional accessibility to jobs and services, promote sustainable urbanization, and encourage a shift to modes of travel with lower emissions.

C. Outputs

10. The proposed project includes four main outputs intended to substantially improve the urban transport system in Ji'an.

11. **Output 1: Public transport improved.** BRT system improvement will include developing a 6.9 km BRT corridor on the existing Jingganshan Road between the Ji'an North Road intersection and Ji'an South Road intersection. The corridor will have dedicated center-running bus lanes with 15 stations on island platforms. The project will procure 95 BRT buses, which will constitute about a quarter of the municipal bus company's fleet.⁶ The station square improvement will upgrade the multimodal connection between public transport and the existing railway station. It will rationalize vehicle and pedestrian access to the station, install weather-protection shelters along major pedestrian areas, and install escalators linking upper and lower levels of the square.

12. **Output 2: Yudai River and greenway rehabilitated.** The Yudai River, a winding waterway on the west side of the Ji'an urban area, runs through the new development area where urban roads (output 3) are to be constructed and is integrated into the irrigation system for rice cultivation. During the rainy season, flooding affects farmland on both sides of the river. The Yudai River rehabilitation and greenway is needed for flood control in the area and will provide recreation areas, parkland, and paths for nonmotorized transport and facilities that will connect the new development area with the existing city.

13. **Output 3: Traffic management and urban roads developed.** The transport network will be developed to connect the city center to the new development area, the Yudai River greenway (output 2), and serve the feeder bus routes integrated into the BRT corridor (output 1). Five urban trunk roads with a total length of 19.3 km will be constructed along with utilities, streetscape improvements, pedestrian enhancements, and segregated lanes for nonmotorized transport. Given the rapid growth of traffic demand and implementation of the BRT system, the traffic signal system along the major existing and new road corridors will be upgraded. This will coordinate signals at 37 intersections along the BRT corridor and the proposed urban roads in the new development area.

14. **Output 4: Institutional capacity developed.** The project will build capacity for energy-efficient BRT operations and integrated urban and transport planning; support project implementation to ensure that project outputs are delivered on time and within budget in

⁶ Including 12 diesel hybrid electric buses purchased with the proposed GEF grant (para. 16).

accordance with ADB policies and procedures; develop and maintain the project performance monitoring system; assist with procurement, financial management, and disbursement; oversee detailed design and road safety audits; and ensure that safeguard measures are implemented, monitored, and reported.

15. **Special feature.** A GEF grant will support environmental improvement by maximizing the energy efficiency of bus operations on the BRT and feeder services. The proposed GEF-funded activity has three components: (i) fuel efficient bus operations using diesel hybrid-electric buses (in Output 1); (ii) evaluation and monitoring of hybrid bus performance under BRT and normal operating conditions (in Output 4); and (iii) the development of an integrated transport/land use plan (in Output 4). The GEF-financed activities are designed to reduce the carbon intensity of the transport system in Ji'an and provide a low-carbon blueprint for future urban development.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

Indicative Activities	2014		2015				Responsible Organization
	Q3	Q4	Q1	Q2	Q3	Q4	
Advance Contracting Actions							JMG, JIDC
Retroactive Financing Actions							ADB
Establish Project Implementation Arrangements							JMG, JIDC
ADB Board Approval							ADB
Loan Signing							ADB, MOF, JPFD, JMG
Government Legal Opinion Provided							JMG, JPFD, MOF
Government Budget Inclusion							JMG, JPFD
Loan Effectiveness							JMG, JIDC

ADB = Asian Development Bank, JIDC = Ji'an Urban Construction Investment and Development Company, JMG = Ji'an Municipal Government, JPFD = Jiangxi Provincial Finance Department, MOF = Ministry of Finance.

B. Overall Project Implementation Plan (Revised)

[illegible]

Activities	2014				2015				2016				2017				2018				2019			
Design and Monitoring Framework (DMF)	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
C2. Civil Works for Bus Rapid Transit																								
C2.1. BRT Route, Station																								
C3. Railway station improvement																								
C3.1. Railway station improvement																								
C4. Civil Works for Yudai River Improvement																								
C4.1. River rehabilitation and landscaping work (north)																								
C4.2. River rehabilitation and landscaping work (south)																								
C4.3. LAR Activities																								
E5. Equipment																								
E5.1. BRT Station Operation/Ticketing/Safety door System																								
E5.2. BRT Traffic Engineering, ITS system																								
E5.3. BRT Buses																								
E5.4. Railway Station Equipment (escalator)																								
E5.5. Traffic Management Equipment																								
CS6. Consulting Services																								
CS6.1. Project Management and Capacity Building																								
CS6.2. BRT implementation support																								
CS6.3. Resettlement Monitoring																								
CS6.4. Social and Gender Monitoring																								
CS6.5. Environmental Monitoring																								

BRT = bus rapid transit; LAR = land acquisition and resettlement.

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations – Roles and Responsibilities

16. The Jiangxi-Ji'an Municipal Government (JMG) is the Executing Agency (EA) for the project. At the municipal-level, JMG has established (i) a Ji'an project leading group (PLG) to provide policy guidance and coordination, and (ii) a Ji'an project management office (PMO) will supervise and coordinate overall Project implementation. The Ji'an Urban Investment and Development Company (JIDC) will be the Implementing Agency (IA) and will implement the components. A PLG has been set up to provide local policy guidance, and PMO to supervise and coordinate the overall implementation of the components. Urban Management Department under Ji'an Construction Bureau, Ji'an Public Transport Group and Traffic Police under Public Security Bureau, and Water Conservancy Bureau will operate/maintain the urban roads, BRT and traffic management facilities, and Yudai River flood control facilities respectively when the components are completed.

Project implementation organizations	Management Roles and Responsibilities
Ji'an Municipal Government (JMG)	<ul style="list-style-type: none"> ➤ The EA responsible for the overall project implementation, including land acquisition and resettlement; ➤ Ensuring project's sustainability and reporting to ADB on agreed development outcome and impacts; ➤ Monitoring and evaluating project activities and outputs, including periodic review, preparation of review reports reflecting issues and time-bound actions taken (or to be taken); ➤ Providing guidance to IA on project implementation; ➤ Preparing and securing project budget approval; ➤ Obtaining and provision of agreed counterpart funds for project activities; ➤ Establishing strong financial management system, submitting withdrawal applications to ADB through the Jiangxi Provincial Finance Bureau, conducting financial audits as per agreed timeframe and taking recommended actions; ➤ Oversee the procurement activities; ➤ Involving beneficiaries and civil society representatives in all stages of project design and implementation; ➤ Complying with the loan covenants; and ➤ Preparing regular periodic progress reports, monitoring reports, and project completion report, and material actions agreed and their timely submission to ADB.
Ji'an Urban Investment and Development Company (JIDC)	<ul style="list-style-type: none"> ➤ The IA responsible for day to day implementation of all project components; ➤ Ensuring achievement of the project's development impacts and their sustainability; ➤ Coordinating with concerned provincial and municipal agencies; ➤ Preparing and updating the project implementation plan; procurement plans for the entire loan period and detailed procurement plan for the next 18 months; annual projections for contract awards and disbursements;

Project implementation organizations	Management Roles and Responsibilities
	<ul style="list-style-type: none"> ➤ Undertaking procurement action and consultant selection, including preparation and securing approval by ADB of bidding documents, bid evaluation reports and contract awards; ➤ Preparing withdrawal applications; ➤ Coordinating preparation of surveys, preliminary and detailed design documents; ➤ Ensuring the approval of land acquisition and resettlement plans by the Government and ADB, and implementing them; ➤ Ensuring updates and approvals of environmental impact assessment and EMP reports by the Government and ADB, and implementing them. ➤ Conducting the construction supervision with the assistance of the PMO, validating the quantities and quality of civil works, and equipment; ➤ Preparing regular periodic progress reports, monitoring and evaluation reports, and project completion report and their timely submission to ADB; ➤ Involving beneficiaries and civil society representatives in all stages of project design and implementation; ➤ Public disclosure of project outputs; and ➤ Complying with all loan covenants.
Ji'an Municipal Project Leading Group (PLG)	<ul style="list-style-type: none"> ➤ Chaired by Vice Mayor, Mr. Yu Yangchun; ➤ Comprising of representatives of all concerned municipal agencies; ➤ Providing policy and institutional guidance to EA, IA, and concerned government agencies during the implementation; ➤ Overseeing overall project implementation agencies; and ➤ Ensuring interagency coordination and resolving institutional issues which may affect project viability or project implementation.
Jiangxi Provincial Finance Department	<ul style="list-style-type: none"> ➤ Signing the Onlending and/or Relending Agreements for the project; ➤ Endorsing to ADB the authorized staff with approved signatures for disbursement of loan proceeds; ➤ Operating imprest account; ➤ Processing and submitting to ADB, through the Ministry of Finance, any request, when required, for matters pertaining to Loan or Project Agreements; and ➤ Monitoring of the project implementation and providing coordination and facilitation as needed.
Ji'an Municipal Finance Bureau	<ul style="list-style-type: none"> ➤ Signing the Relending Agreement for the project; ➤ Timely processing matters pertaining to utilizing of loan proceeds and/or Relending Agreement, and provision of agreed counterpart funds for project activities, allocating and releasing counterpart funds; and ➤ Monitoring of the project implementation and providing respective coordination and facilitation as needed.
Ministry of Finance	<ul style="list-style-type: none"> ➤ Supervising the JMG in the implementation of the project; and Representative of the Government of the PRC; and ➤ Guiding JMG on ADB documentation requirements, such

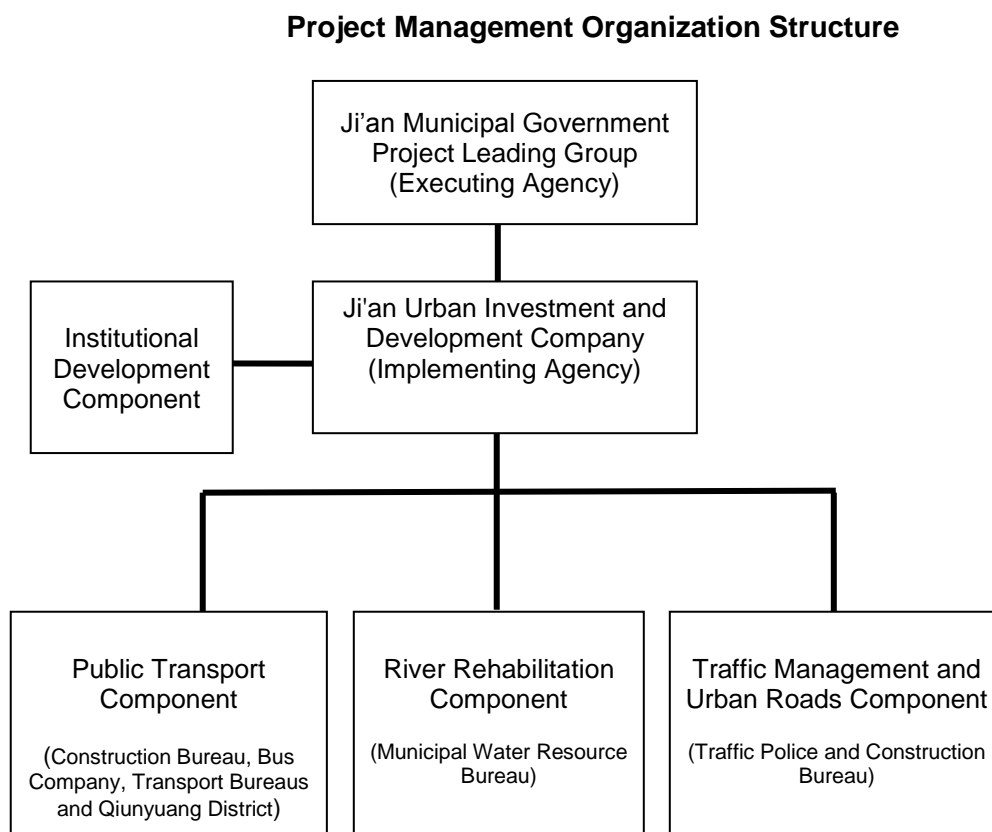
Project implementation organizations	Management Roles and Responsibilities
	as legal opinion and fulfill loan effectiveness conditions when needed.
Asian Development Bank	<ul style="list-style-type: none"> ➤ Providing the EA and IA guidance to ensure smooth project implementation and achieving the desired development impacts and their sustainability; ➤ Conducting regular loan review missions, a midterm review, and project completion review; ➤ Reviewing and approving of procurement actions; ➤ Processing the withdrawal applications; ➤ Monitoring the status of compliance with all loan covenants including safeguards; ➤ Reviewing the annual audit report and following up on the audit recommendations; ➤ Regularly update the project performance review reports with the assistance of EA and IA; and ➤ Regularly updating the project information documents for public disclosure at ADB website, including the safeguard documents. ➤ Monitor the performance of the hybrid buses.

ADB = Asian Development Bank, EA = Executing Agency, EMP = Environment Management Plan, IA = Implementing Agency.

B. Key Persons Involved in Implementation

Organization	Contact Details
<i>Executing Agency</i> Ji'an Municipal Government	Officer's Name: Yu Yangchun Position: Vice Mayor Telephone: 0796-8935325 Email address: yhdk2013@163.com Office Address: Rm. D225. 2nd Floor, Ji'an new Administrative Center, Ji'an City Jiangxi Province, PRC
<i>Implementing Agency</i> Ji'an Urban Investment and Development Company	Officer's Name: Xiao Xin Position: Chairman Telephone: 0796-8935325 Email address: yhdk2013@163.com Office Address: Rm. D312. 3rd Floor, Ji'an new Administrative Center, Ji'an City Jiangxi Province, PRC
<i>ADB</i> Transport Division	Staff Name: Tyrrell Duncan Position: Director, EATC Telephone No.+632 632 6383 Email address: tduncan@adb.org
Mission Leader	Staff Name: Ki-Joon Kim Position: Senior Transport Specialist Telephone No.: + 632 632 1773 Email address: kjkim@adb.org

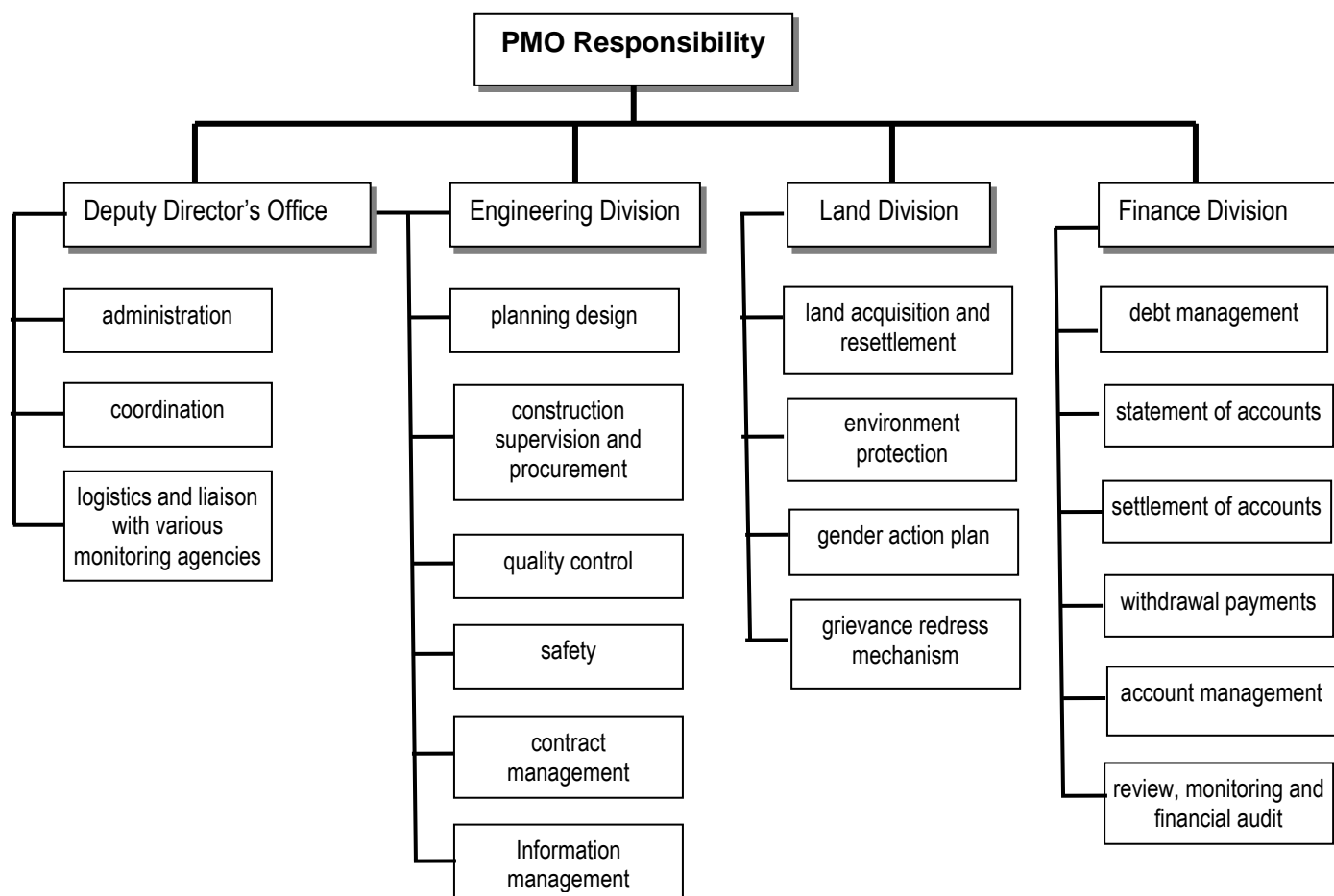
C. Project Organization Structure



17. **PMO Organization and Staffing Plan.** Mr. Xiao Xin, the Chairman of JIDC, is assigned to be the focal point for the project implementation. A dedicated PMO has been established with the following staff and responsibilities.

Name	PMO Designation	JIDC Position
1. Xiao Xin	Director	Chairman
2. Yang Xiaoyong	Deputy Director	General Manager
3. Li Zhigui	Manager (Focal Person)	Deputy General Manager
4. Zhu Xiaobin	Deputy Manager	Assistant to General Manager
5. Mao Huimin	Staff	Head, Engineering Division
6. Cao Guanghui	Staff	Head, Land Division
7. Wang Haiyun	Staff	Deputy Head, Finance Division
8. Zhou Bin	Staff	Officer, Deputy Director's Office
9. Chen Kai	Staff	Officer, Engineering Division
10. Zhang Zhihong	Staff	Administrative Supervisor, PMO

18. The responsibilities will be organized in the following manner.



19. Additional consulting services will be utilized by the PMO as part of the project to fill gaps in expertise, provide project implementation and management support, and build the capacity of the EA and IA.

IV. COSTS AND FINANCING

20. The project investment cost is estimated at \$289.6 million including taxes and duties of \$9.0 million. The total cost also includes physical and price contingencies. The indicative investment plan for the project is summarized in Table 1: Investment Plan

Table 1: Investment Plan
(\$ million)

Item	Amount ^a		Share of Total (%)
	(CNY million)	(\$ million)	
A. Base Cost^b			
1. Public Transport	262.2	42.7	14.7%
2. Yudai River Rehabilitation and Greenway	272.0	44.3	15.3%
3. Traffic Management and Urban Roads	979.9	159.6	55.1%
4. Institutional Capacity Development	11.7	1.9	0.7%
Subtotal (A)	1,531.9	248.5	85.8%
B. Contingencies			
Physical ^c	132.2	21.5	7.4%
Price ^c	93.4	15.2	5.2%
Subtotal (B)	225.6	36.7	12.7%
C. Financing Charges During Implementation^d	26.7	4.4	1.5%
Total (A+B+C)	1,762.6	289.6	100.0%

^a In mid-2014 prices using an exchange rate of CNY6.14 to \$1.00. The cost includes taxes and duties of \$9.0 million. Of this amount the Asian Development Bank (ADB) loan and GEF Grant will finance taxes and duties of \$7.3 million on items financed by ADB and the GEF grant.

^b The base costs in this table and in the domestic feasibility studies are the same. Physical contingencies are computed at 8.8%. Price contingencies are computed at an average 5.7%. Price contingencies are computed by year and expenditure type based on cumulative domestic and foreign price inflation; includes provision for exchange rate fluctuations under a purchasing power parity exchange rate. Domestic contingencies are computed using different methodologies; therefore the total cost reflected in this table and in domestic reports differs.

^c Includes interest and commitment charges. Interest during construction for ADB loan(s) has been computed at the 5-year US dollar fixed swap rate plus a spread of 0.50% plus a maturity premium of 0.1% based on an average loan maturity of 15 to 25 years. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

Note: Numbers may not add precisely due to rounding.

Source: Asian Development Bank estimates.

21. The government has requested a loan of \$120 million from ADB's ordinary capital resources to help finance the project. The loan is expected to have a 25-year term, including a grace period of 5 years, an interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility, a commitment charge of 0.15% per annum, and such terms and conditions as may be set forth in the draft loan and project agreements. ADB's loan will cover civil works, equipment, project management and capacity building consulting services, and taxes and duties on the expenditures financed by ADB.⁷ The GEF will provide grant cofinancing equivalent to \$2,546,300 to be administered by ADB. ADB will provide the same amount to the JMG on a grant basis. The JMG will provide \$167.1 million to finance civil works, resettlement, design, surveys and research, and contingencies. These loan terms will be revised and confirmed during loan negotiations.

22. The borrower will be the PRC. The government will make the loan proceeds available to the Jiangxi Provincial Government, which will relend the proceeds to the JMG. The JMG will onlend the loan proceeds to the JIDC. The JMG will assume the foreign exchange and interest rate variation risks for the ADB loan. The financing plan is in Table 2.

⁷ The amount of taxes and duties to be financed in the project has been determined based on the principles that (i) the amount of taxes and duties financed by the ADB loan, which represents 2.6% of the project cost, does not represent an excessive share of the project; (ii) the taxes and duties apply only with respect to ADB-financed expenditures; and (iii) the financing of the taxes and duties is material and relevant to the success of the project since the percentage of some financed expenditures needs to be 100%.

Table 2: Financing Plan

Source	Amount (\$million)	Share of Total (%)
Asian Development Bank	120.0	41.4
Global Environment Facility ^a	2.5	0.9
Government	167.1	57.7
Total	289.6	100.0

^aAdministered by the Asian Development Bank.

Source: Asian Development Bank estimates.

A. Allocation and Withdrawal of Loan Proceeds

No.	Item	Category	Subcategory	Percentage and Basis for Withdrawal from the Loan Account
1	Civil Works	94.1		74.7% of total expenditure
1a	Public Transport		12.2	
1b	River Rehabilitation		12.6	
1c	Urban Roads and Traffic Management		69.3	
2	Goods	24.6		92.7% of total expenditure
3	Institutional Capacity Development	1.3		68% of total expenditure
Total		120.0		

B. Allocation and Withdrawal of Grant Proceeds

No.	Item	Category	Subcategory	Percentage and Basis for Withdrawal from the Grant Account
1	Goods	1.9		7.3% of total expenditure
2	Institutional Capacity Development	0.6		32% of total expenditure
Total		2.5		

C. Detailed Cost Estimates by Expenditure Category

Item	CNY million			\$ million			% of Total Base Cost
	Foreign Exchange	Local Currency	Total Cost	Foreign Exchange	Local Currency	Total Cost	
A. Base Cost^{a,b}							
1. Civil Works	201.4	571.6	773.0	32.8	93.1	125.9	50.7%
Public Transport	9.8	89.9	99.5	1.6	14.6	16.2	6.5%
River Rehabilitation	20.9	83.5	104.4	3.4	13.6	17.0	6.8%
Traffic Management and Urban Roads	170.7	398.5	569.2	27.8	64.9	92.7	37.3%
2. Goods	41.8	121.0	162.7	6.8	19.7	26.5	10.7%
3. Land Acquisition and Resettlement	0.0	458.7	458.7	0.0	74.7	74.7	30.1%
4. ADB - Institutional Capacity Development	12.0	0.0	12.0	1.9	0.0	1.9	0.8%
5. Survey, Research, Design and Project Management	0.0	114.8	114.8	0.0	18.7	18.7	7.5%
Environmental Management Plan	0.0	4.9	4.9	0.0	0.8	0.8	0.3%
Subtotal (A)	255.1	1,271.0	1,526.1	41.5	207.0	248.5	100.0%
B. Contingencies^c							
1. Physical	0.0	132.0	132.0	0.0	21.5	21.5	7.4%
2. Price	0.0	93.3	93.3	0.0	15.2	15.2	5.2%
Subtotal (B)	0.0	225.3	225.3	0.0	36.7	36.7	12.7%
C. Financing Charges During Implementation^d							
1. Interest During Implementation	22.9	0.0	22.9	3.7	0.0	3.7	1.3%
2. Commitment Charges	3.8	0.0	3.8	0.6	0.0	0.6	0.2%
Subtotal (C)	26.7	0.0	26.7	4.4	0.0	4.4	1.5%
Total Project Cost (A+B+C)	281.8	1,496.3	1,778.1	45.9	243.7	289.6	114.2%

^a In mid-2014 prices using an exchange rate of CNY6.14 to \$1.00. The cost includes GEF financing of \$2.5 million, taxes and duties of \$9.0 million. Of this amount the Asian Development Bank (ADB) loan and Global Environment Facility (GEF) Grant will finance taxes and duties of \$7.3 million on items financed by ADB and the GEF grant.

^b The base costs in this table and in the domestic feasibility studies are the same.

^c Physical contingencies are computed at 8.8%. This is based on estimated contingency rates for the major cost categories: civil 5%, goods 10%, land and resettlement 15%, landscaping and flood control 15%, consulting, capacity building and design 5%. Price contingencies are computed at an average 5.7%. Price contingencies are computed by year and expenditure type based on cumulative domestic and foreign price inflation; includes provision for exchange rate fluctuations under a purchasing power parity exchange rate. Domestic contingencies are computed using different methodologies; therefore the total cost reflected in this table and in domestic reports differs.

^d Includes interest and commitment charges. Interest during construction for ADB loan(s) has been computed at the 5-year US dollar fixed swap rate plus a spread of 0.50% plus a maturity premium of 0.1% based on an average loan maturity of 15 to 25 years. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

Note: Numbers may not add precisely due to rounding.

Source: Asian Development Bank estimates.

D. Detailed Cost Estimates by Financier (\$ million)

Item	Asian Development Bank		Ji'an Municipal Government		GEF Financing		Total
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	
A. Base Cost^{a,b}							
1. Civil Works	94.1	74.7	31.9	25.3			126.0
Public Transport	12.2	74.7	4.1	25.3			16.3
River Rehabilitation	12.7	74.7	4.3	25.3			17.0
Traffic Management and Urban Roads	69.3	74.7	23.5	25.3			92.7
2. Goods	24.6	92.7	-	0.0	1.9	7.3	26.5
3. Land Acquisition and Resettlement	-	0.0	74.7	100.0			74.7
4. ADB - Institutional Capacity Development	1.3	68.0	-	0.0	0.6	32.0	1.9
5. Survey, Research, Design and Project Management	-	0.0	18.7	100.0			18.7
Environmental Management Plan	-	0.0	0.8	100.0			0.8
Subtotal (A)	120.0	48.8	126.0	51.2	2.5		248.5
B. Contingencies^c							
1. Physical	-	0.0	21.5	100.0			21.5
2. Price	-	0.0	15.2	100.0			15.2
Subtotal (B)	-	0.0	36.7	100.0			36.7
C. Financing Charges During Implementation^d							
1. Interest During Implementation	-	0.0	3.7	100.0			3.7
2. Commitment Charges	-	0.0	0.6	100.0			0.6
Subtotal (C)	-	0.0	4.4	100.0			4.4
Total Project Cost (A+B+C)	120.0	41.8	167.1	58.2	2.5	0.86	289.6
% Total Project Cost		41.8		58.2		0.86	100.0

^a In mid-2014 prices using an exchange rate of CNY6.14 to \$1.00. The cost includes taxes and duties of \$9.0 million. Of this amount the Asian Development Bank (ADB) loan and GEF Grant will finance taxes and duties of \$7.3 million on items financed by ADB and the GEF grant.

^b The base costs in this table and in the domestic feasibility studies are the same.

^c Physical contingencies are computed at 8.8%. This is based on estimated contingency rates for the major cost categories: civil 5%, goods & equipment 10%, land and resettlement 15%, landscaping and flood control 15%, consulting, capacity building and design 5%. Price contingencies are computed at an average 5.7%. Price contingencies are computed by year and expenditure type based on cumulative domestic and foreign price inflation; includes provision for exchange rate fluctuations under a purchasing power parity exchange rate. Domestic contingencies are computed using different methodologies, therefore the total cost reflected in this table and in domestic reports differs.

^d Includes interest and commitment charges. Interest during construction for ADB loan(s) has been computed at the 5-year US dollar fixed swap rate plus a spread of 0.50% plus a maturity premium of 0.1% based on an average loan maturity of 15.25 years. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

Note: Numbers may not add precisely due to rounding.

Source: Asian Development Bank estimates.

E. Detailed Cost Estimates by Outputs/Components (\$ million)

Item	Total Cost	Public Transport		River Rehabilitation		Traffic Management and Urban Roads		Traffic Management		Capacity Building	
		Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category
A. Base Cost^{a,b}											
1. Civil Works	125.9	16.2	12.9	17.0	13.5	92.7	73.6	-	0.0	-	0.0
Public Transport	16.2	16.2	100.0	-	0.0	-	0.0	-	0.0	-	0.0
River Rehabilitation	17.0	-	0.0	17.0	100.0	-	0.0	-	0.0	-	0.0
Traffic Management and Urban Roads	92.7	-	0.0	-	0.0	92.7	100.0	-	0.0	-	0.0
2. Goods	26.5	22.5	85.0	-	0.0	3.9	16.0	-	0.0	-	0.0
3. Land Acquisition and Resettlement	74.7	-	0.0	24.9	33.3	49.8	66.7	-	0.0	-	0.0
4. ADB - Institutional Capacity Development	1.9	-	0.0	-	0.0	-	0.0	-	0.0	1.9	100.0
5. Survey, Research, Design and Project Management	18.7	3.8	20.3	2.4	12.6	12.5	67.1	-	0.0	-	0.0
Environmental Management Plan	0.8	0.1	14.7	0.1	10.6	0.6	73.9	-	0.0	-	0.0
Subtotal (A)	248.5	42.6	17.2	61.3	24.7	159.6	64.2	0.0	0.0	1.9	0.8
B. Contingencies^c											
1. Physical	21.5	3.1	14.4	5.2	24.3	13.1	61.0	-	0.0	0.1	0.3
2. Price	15.2	2.5	16.4	2.8	18.5	9.8	64.6	-	0.0	0.1	0.5
Subtotal (B)	36.7	5.6	15.2	8.1	21.9	23.0	62.5	0.0	0.0	0.1	0.4
C. Financing Charges During Implementation^d											
1. Interest During Construction	3.7	1.0	17.6	0.4	58.9	2.3	22.9	-	22.9	0.0	0.5
2. Commitment Charges	0.6	0.2	31.9	0.1	43.2	0.4	23.4	-	23.4	0.0	1.5
Subtotal (C)	4.4	1.2	27.3	0.5	10.6	2.7	61.0	0.0	0.0	0.0	1.1
Total Project Cost (A+B+C)	289.6	47.6	16.4	52.8	18.4	185.2	64.5	0.0	0.0	2.1	0.7

ADB = Asian Development Bank.

^a In mid-2014 prices using an exchange rate of CNY6.14 to \$1.00. The cost includes taxes and duties of \$9.0 million. Of this amount, the Asian Development Bank (ADB) loan will finance taxes and duties of \$7.3 million on items financed by ADB and the GEF grant.

^b The base costs in this table and in the domestic feasibility studies are the same.

^c Physical contingencies are computed at 8.8%. This is based on estimated contingency rates for the major cost categories: civil 5%, goods & equipment 10%, land and resettlement 15%, landscaping and flood control 15%, consulting, capacity building and design 5%. Price contingencies are computed at an average 5.7%. Price contingencies are computed by year and expenditure type based on cumulative domestic and foreign price inflation; includes provision for exchange rate fluctuations under a purchasing power parity exchange rate. Domestic contingencies are computed using different methodologies, therefore the total cost reflected in this table and in domestic reports differs.

^d Includes interest and commitment charges. Interest during construction for ADB loan(s) has been computed at the 5-year US dollar fixed swap rate plus a spread of 0.50% plus a maturity premium of 0.1% based on an average loan maturity of 15.25 years. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

Note: Numbers may not add precisely due to rounding.

Source: Asian Development Bank estimates.

F. Detailed Cost Estimates by Year (\$ million)

Item	Total	2014		2015		2016		2017		2018		2019	
		Amount	% of Total Cost	Amount	% of Total Cost	Amount	% of Total Cost	Amount	% of Total Cost	Amount	% of Total Cost	Amount	% of Total Cost
A. Base Cost^{a,b}													
1. Civil Works	126.0	0.0	0.0	0.0	0.0	10.1	8.0	25.5	20.2	55.1	43.7	35.4	28.1
Public Transport	16.3	0.0	0.0	0.0	0.0	1.8	11.3	1.6	10.0	5.9	36.0	7.0	42.7
River Rehabilitation	17.0	0.0	0.0	0.0	0.0	1.0	6.0	1.7	10.0	10.1	59.5	4.2	24.5
Traffic Management and Urban Roads	92.7	0.0	0.0	0.0	0.0	7.3	7.8	22.1	23.9	39.1	42.2	24.2	26.1
2. Goods	26.5	0.0	0.0	0.0	0.0	0.0	0.0	1.9	7.2	19.7	74.3	4.9	20.0
3. Land Acquisition and Resettlement	74.7	0.0	0.0	6.0	8.0	47.3	63.4	21.4	28.6	0.0	0.0	0.0	0.0
4. ADB - Institutional Capacity Development	1.9	0.0	0.0	0.0	0.0	0.5	26.6	0.5	26.6	0.3	13.3	0.6	33.4
5. Survey, Research, Design and Project Management	18.7	0.0	0.0	1.9	10.3	2.5	13.4	8.4	44.7	5.6	29.9	0.3	1.7
Environmental Management Plan	0.8	0.0	0.0	0.1	11.4	0.1	12.4	0.3	41.4	0.3	33.0	0.0	1.8
Subtotal (A)	248.5	0.0	0.0	8.0	3.2	61.0	24.6	58.4	23.5	80.8	32.5	41.2	16.6
B. Contingencies^c													
1. Physical	21.5	0.0	0.0	0.0	0.0	1.7	7.9	4.0	18.5	9.8	45.5	6.0	28.1
2. Price	15.2	0.0	0.0	0.0	0.0	1.2	8.2	2.9	19.1	6.7	44.3	4.3	28.5
Subtotal (B)	36.7	0.0	0.0	0.0	0.0	3.0	8.0	6.9	18.7	16.5	45.0	10.4	28.2
C. Financing Charges During Implementation^d													
1. Interest During Implementation	3.7	0.0	0.0	0.0	0.0	0.1	2.2	0.4	9.6	1.2	31.5	2.1	56.7
2. Commitment Charges	0.6	0.0	0.0	0.2	28.8	0.2	27.9	0.2	24.6	0.1	14.9	0.0	3.8
Subtotal (C)	4.4	0.0	0.0	0.2	4.1	0.3	5.8	0.5	11.7	1.3	29.1	2.1	49.1
Total Project Cost (A+B+C)	289.6	-	0.0	8.2	2.8	64.2	22.2	65.8	22.7	98.6	34.1	53.7	18.5
% Total Project Cost	100	0.0		2.8		22.2		22.1		34.4		18.5	

^a In mid-2014 prices using an exchange rate of CNY6.14 to \$1.00. The cost includes taxes and duties of \$9.0 million. Of this amount the Asian Development Bank (ADB) loan and GEF Grant will finance taxes and duties of \$7.3 million on items financed by ADB and the GEF grant.

^b The base costs in this table and in the domestic feasibility studies are the same.

^c Physical contingencies are computed at 8.8%. This is based on estimated contingency rates for the major cost categories: civil 5%, goods & equipment 10%, land and resettlement 15%, landscaping and flood control 15%, consulting, capacity building and design 5%. Price contingencies are computed at an average 5.7%. Price contingencies are computed by year and expenditure type based on cumulative domestic and foreign price inflation; includes provision for exchange rate fluctuations under a purchasing power parity exchange rate. Domestic contingencies are computed using different methodologies, therefore the total cost reflected in this table and in domestic reports differs.

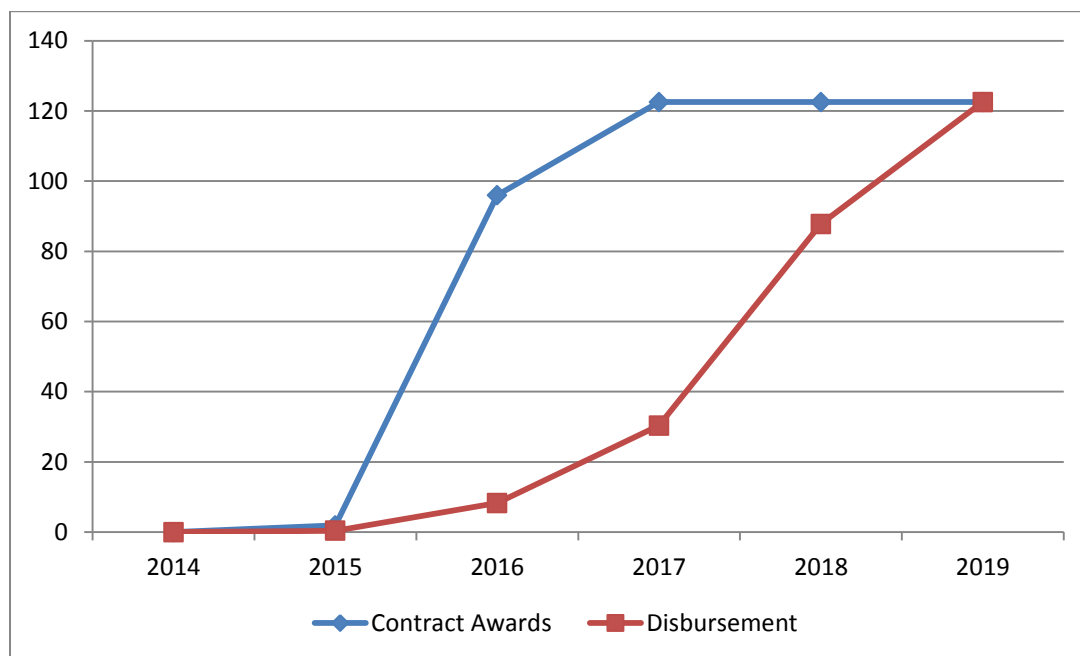
^d Includes interest and commitment charges. Interest during construction for ADB loan(s) has been computed at the 5-year US dollar fixed swap rate plus a spread of 0.50% plus a maturity premium of 0.1% based on an average loan maturity of 15.25 years. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

Note: Numbers may not add precisely due to rounding.

Source: Asian Development Bank estimates.

G. Contract and Disbursement S-curve

Figure 1: Contract Awards and Disbursements Projections



**Table 3: Project Contract Awards and Disbursements
(\$ millions)**

Year	Contract	Disbursement	Cumulative	
			Contract	Disbursement
2014	0.00	0.00	0.00	0.00
2015	1.90	0.38	1.90	0.38
2016	94.10	6.54	96.00	8.30
2017	26.50	20.84	122.50	30.36
2018	0.00	53.04	122.50	87.79
2019	0.00	29.50	122.50	122.50
Total	122.50	122.50	122.50	122.50

A. Financial Management Assessment

24. The completed questionnaire and assessment⁸ indicates that: (i) the policies and procedures for accounting and financial management in the PRC are carefully followed by the IA; (ii) the IA has strong accounting and financial management capacity and experience in managing large construction projects. However, the IA has never implemented a foreign-funded project. The overall risk rating is “medium”. The IA should: (i) install a special account for financially managing the project; (ii) designate staff to manage the project funds; (iii) establish a mechanism to avoid the risks of foreign exchange and a floating interest rate for the ADB loan; and (iv) facilitate the work of the financial staff with adequate equipment and implementation support. It was agreed that the IA would strengthen its financial management capacity for the project, including: (i) strengthening its institutional framework; (ii) recruiting more staff if needed; (iii) studying or avoiding risks of foreign funds; (iv) obtaining more training especially on ADB’s policy and procedures; and (v) seeking more external assistance in financial management if needed.

B. Disbursement

25. The loan proceeds will be disbursed in accordance with ADB’s Loan Disbursement Handbook (2012, as amended from time to time),⁹ and detailed arrangements agreed upon between the government and ADB. No withdrawals shall be made from the Loan account until the Borrower has certified to ADB that all onlending agreements referred to in the Loan Agreement have been duly executed have become effective and binding.

26. The IA on behalf of JMG will be responsible for (i) requesting budgetary allocations for counterpart funds, (ii) collecting supporting documents, and (iii) preparing and sending withdrawal applications through the Ji’an Municipal Finance Bureau and the JPFD to ADB.

27. To facilitate project implementation and funds flow, separate imprest account will be set up for the ADB loan and GEF grant in a commercial bank acceptable to ADB upon loan effectiveness, the account will be in US\$.¹⁰ The accounts will be managed by JPFD. The maximum ceiling of the imprest accounts will be 10% of the respective loan and grant amounts. For every liquidation and replenishment request of the imprest accounts, the JPFD will furnish to ADB (i) statement of account (bank statement) where the imprest accounts are maintained, and (ii) the imprest accounts reconciliation statement reconciling the above mentioned bank statement against JPFD records. ADB loan and GEF grant financing will be pro-rata with 93% and 7% under Goods, and 68% and 32% under ADB-Institutional Capacity Development for OCR and GEF respectively.

28. Before the submission of the first withdrawal application, the borrower should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is US\$100,000, unless otherwise approved by ADB. The borrower is to consolidate claims to meet this limit for reimbursement and imprest account claims. Withdrawal applications and supporting documents will demonstrate, among other things that the goods, and/or services were produced in or from ADB members, and are eligible for ADB financing. The government will need to prepare

⁸ The financial management capacity assessment was completed in December 2011.

⁹ Available at: <http://www.adb.org/documents/loan-disbursement-handbook>.

¹⁰ The bank charges on the imprest account will be financed from the proceeds of the loan.

separate withdrawal applications for OCR and GEF with the invoice to be attached is the same.

29. The direct payment procedure can apply for large works contracts. If the government initially funds eligible expenditures from its own resources, the reimbursement procedure will be used. To expedite the flow and simplify the documentation process, the statement of expenditures (SOE) will be used for liquidation and replenishment of the imprest account and for reimbursement of eligible expenditure. SOE records should be maintained and made readily available for review by ADB's disbursement and review mission or upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.¹¹

C. Accounting

30. The PMO will maintain the project accounts and records by funding source for all expenditures incurred on the project. The PMO will prepare consolidated project financial statements in accordance with the government's accounting laws and regulations which are consistent with international accounting principles and practices.

D. Auditing

31. The PMO will cause the detailed consolidated project accounts to be audited in accordance with International Standards on Auditing by an auditor acceptable to ADB. The audited accounts will be submitted in the English language to ADB within 6 months of the end of the fiscal year by the PMO. The annual audit report will include a separate audit opinion on the use of the imprest accounts and the SOE procedures. The Government and EA have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited accounts. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures. For revenue generating projects only, ADB requires audited financial statements for each executing and/or implementation agency associated with the project.

32. The annual audit report for the project accounts will include an audit management letter and audit opinions which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan and grant proceeds were used only for the purposes of the project or not; (iii) the level of compliance for each financial covenant contained in the legal agreements for the project; (iv) use of the imprest fund procedure; and (v) the use of the statement of expenditure procedure certifying to the eligibility of those expenditures claimed under SOE procedures, and proper use of the SOE and imprest procedures in accordance with ADB's Loan Disbursement Handbook and the project documents.

33. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

34. The Government has been informed of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements. ADB Policy on delayed submission of audited project financial statements:

¹¹ Checklist for SOE procedures and formats are available at Appendix 9B of the *Loan Disbursement Handbook*.

- (i) When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (a) the audit documents are overdue; and (b) if they are not received within the next six months, requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.
- (ii) When audited project financial statements have not been received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (a) inform the executing agency of ADB's actions; and (b) advise that the loan may be suspended if the audit documents are not received within the next six months.
- (iii) When audited project financial statements have not been received within 12 months after the due date, ADB may suspend the loan. ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

35. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).¹² After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website. The Audit Management Letter will not be disclosed.

¹² Available from <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>.

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting and Retroactive Financing

36. All advance contracting and retroactive financing will be undertaken in conformity with ADB's Procurement Guidelines (2013, as amended from time to time)¹³ and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).¹⁴ The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. The borrower, EA and IA have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the project.

37. **Advance contracting.** Advance contracting will include: (i) prequalification of contractors, tendering, and bid evaluation for civil works packages; (ii) the award of contracts; and (iii) recruitment of consultants. The issuance of invitations to bid under advance contracting will be subject to ADB approval.

38. **Retroactive financing.** The expenditures for retroactive financing must have been incurred before loan effectiveness but not more than 12 months before the signing of the loan agreement and subject to a maximum amount equivalent to 20% of the total loan amount.

39. Advance contracting and retroactive financing will be applied to civil works contracts C1.1, C1.2, and C1.3 in order to ensure that the railway station will have sufficient road access during construction. Advance contracting and retroactive financing will also be applied to all consulting assignments in order to support preparation for civil works tendering, assist the PMO with project management, and help to oversee and support detailed design work financed by the EA.

B. Procurement of Goods, Works and Consulting Services

40. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2013, as amended from time to time). International competitive bidding (ICB) procedures will be used for civil works contracts estimated to exceed \$ 10 million, and goods contracts estimated to exceed \$ 1 million. Contracts for works estimated to cost less than the ICB threshold values above, but more than \$ 100,000 and contracts for goods estimated to cost less than the ICB threshold values above, but more than \$100,000 will be procured on the basis of national competitive bidding (NCB) procedures in accordance with the PRC Tendering and Bidding Law (1999), subject to modifications agreed with ADB. Shopping will be used for contracts for procurement of works worth less than \$ 100,000 and equipment worth less than \$ 100,000. Before the start of any procurement, ADB and the Government will review the public procurement laws of the central and state governments to ensure consistency with ADB's Procurement Guidelines (2013, as amended from time to time).

41. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and NCB guidelines is in Section C.

42. All consultants will be recruited according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The terms of reference (TOR) for all consulting services are detailed in Appendix 3.

¹³ Available at: <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>.

¹⁴ Available at: <http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf>.

43. An estimated 130 person-months (27 international and 103 national) of consulting services are required. Individual consultants will be recruited to facilitate project management and implementation using individual consultant selection (ICS) methods. Recruitment of individual consultants will facilitate immediate mobilization of the experts. The Project Management Specialist will be the overall coordinator of the individual consulting team. In addition to the individual consultants, a consulting firm will be recruited to support BRT development service start-up preparation and assist with longer term transport and land use planning. The consulting firm will be engaged using the quality- and cost-based selection (QCBS) method with a standard quality: cost ratio of 80:20. The breakdown of consulting requirements is in Table 8.

C. Procurement Plan

Table 4: Basic Data

Item	Details
Country	People's Republic of China
Borrower	People's Republic of China
Project Name	Jiangxi Ji'an Sustainable Urban Transport Project
Executing Agency	Ji'an Municipal Government
Loan Amount	\$ 120 million
Period Covered by this Plan	2014–2019
Date of the Procurement Plan	June 2014

1. Procurement Thresholds, Review and 18-Month Procurement Plan

a. Project Procurement Thresholds

44. Except as ADB may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Table 5: Procurement of Goods and Works

Method	Threshold
ICB for Works	\$40,000,000
ICB for Goods	\$3,000,000 to \$10,000,000
NCB for Works	Beneath that stated for ICB, Works
NCB for Goods	Beneath that stated for ICB, Goods
Shopping for Works	Below \$100,000
Shopping for Goods	Below \$100,000

ICB = international competitive bidding, NCB = national competitive bidding.

Source: Asian Development Bank.

b. ADB Prior or Post Review

45. Except as ADB may otherwise agree, the following prior or post review requirements apply to the various procurement and consultant recruitment methods used for the project.

Table 6: Various Procurement and Consultant Recruitment Methods

Procurement Method	Prior or Post	Comments
Procurement of Goods and Works		
ICB Works	Prior	
ICB Goods	Prior	

Procurement Method	Prior or Post	Comments
NCB Works		The first NCB procurement documents should be submitted to ADB for review and approval and subsequent NCB packages will be reviewed post contract award.
NCB Goods		Same as above
Shopping for Works	Post	
Shopping for Goods	Post	
Recruitment of Consulting Firms		
Quality and Cost Based Selection	Prior	
Recruitment of Individual Consultants		
Individual Consultants Selection	Prior	

ICB = international competitive bidding, NCB = national competitive bidding.
Source: Asian Development Bank.

c. Goods and Works Contracts Estimated to Cost More Than US\$ 1 Million

46. The following table lists goods and works contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

Table 7: Contracts of Goods and Works
(to commence within the next 18 months)

Package Number	General Description	Estimated Value (\$ million)	Procurement Method	Review	Bidding Procedure	Advertisement Date (quarter/year)	Comments
A. Civil Works for Urban Roads^a							
C1.1	Yangming Road (Jizhou Rd-Bo'an Rd), 2.05 km	13.49	NCB	Prior Review		Q1 2015	Changed from ICB to NCB
C1.2	Shaoshan Road (Jizhou Rd-Bo'an Rd), 2.99 km	13.16	NCB	Prior Review		Q1 2015	Changed from ICB to NCB
C1.3	Zhongshan Road (Jizhou Rd-Bo'an Rd), 3.34km	15.05	NCB	Prior Review		Q1 2015	Changed from ICB to NCB
B. Civil Works for Bus Rapid Transit (BRT)							
C2.1	BRT route and station	14.08	NCB	Prior Review		Q2 2015	Changed from ICB to NCB
C. Civil Works for Station Square							
C3.1	Railway station improvement	2.19	NCB	Prior Review		Q2 2015	

ADB = Asian Development Bank; ICB = international competitive bidding, km = kilometer; NCB = national competitive bidding.

^a All three lots will be tendered simultaneously in one package.

Source: Asian Development Bank.

Table 8: Contracts of Consulting Services for Project Management and Capacity Strengthening

Package Number	General Description	Estimated Value (\$ million)	Number of Contracts	Recruitment Method	Review	Advertisement Date (quarter/year)	International or National Assignment	Comments
	Institutional Capacity Development for BRT and Urban Planning	1.288		QCBS (80/20)		Q1 2015	International and National	Firm
	Project Management Specialist	0.058		ICS		Q4 2014	International	Individual consultant
	Project Management and Procurement Expert	0.21		ICS		Q4 2014	National	Individual consultant
	Road Safety Specialist	0.058		ICS		Q4 2014	International	Individual consultant
	Road Safety Specialist	0.035		ICS		Q4 2014	National	Individual consultant
	Financial Management Specialist	0.035		ICS		Q4 2014	National	Individual consultant
	Environmental External Monitoring	0.071		ICS		Q4 2014	National	Individual consultant
	Gender Specialist	0.064		ICS		Q4 2014	National	Individual consultant
	Resettlement Capacity Development	0.076		ICS		Q4 2014	National	Individual consultant

QCBS = quality and cost based selection.

Source: Asian Development Bank.

d. Procurement Plan after 18 Months

47. The following table lists goods and works contracts for which procurement activity will be expected to commence after 18 months.

Table 9: Contracts of Goods and Works
(to commence after 18 months)

Package Number	General Description	Estimated Value (\$ million)	Procurement Method	Review	Advertisement Date (quarter/year)	Comments
A. Civil Works for Urban Roads^b						
C1.4	Junhua Road (Ji'an South Rd-Yangming West Rd), 3.86 km	18.30	NCB	Prior	Q2 2016	Changed from ICB to NCB

^b All three lots will be tendered simultaneously in one package.

Package Number	General Description	Estimated Value (\$ million)	Procurement Method	Review	Advertisement Date (quarter/year)	Comments
C1.5	Junhua Road (Yangming West Rd-Ji'an North Rd), 3.93 km	18.62	NCB	Prior	Q2 2016	Changed from ICB to NCB
C1.6	Bo'an Road (Jifu Rd-Shaoshan West Rd), 3.15 km	14.15	NCB	Prior	Q2 2016	Changed from ICB to NCB
B. Equipment for Bus Rapid Transit (BRT)						
E2.1	BRT operation system/ticketing system/safety door system; Control center & Mechanical and electrical engineering	7.90	ICB	Prior	Q1 2016	
E2.2	Traffic engineering and ITS equipment	4.21	ICB	Prior	Q3 2016	
E2.3	BRT buses (95)	12.71	ICB	Prior	Q4 2016	
C. Equipment for Station Square						
E3.1	Escalator	0.244	NCB	Prior	Q1 2016	
D. Equipment for Traffic Management						
E5.1	Signal, control center (e.g., equipment)	3.22	ICB	Prior	Q1 2016	
E. Civil Works for Yudai River Improvement						
C4.1	River rehabilitation and landscaping work (north)	7.80	NCB	Prior	Q2 2016	
C4.2	River rehabilitation and landscape work (south)	9.19	NCB	Prior	Q2 2017	

ICB = international competitive bidding, km = kilometer, NCB = national competitive bidding.

Source: Asian Development Bank.

48. National Competitive Bidding for PRC. The Borrower's Law of Tendering and Bidding of the People's Republic of China promulgated by Order No. 21 of the President of the People's Republic of China on 30 August 1999 is subject to the following clarifications required for compliance with the Guidelines:

- (i) All invitations to prequalify or to bid shall be advertised in the national press, or official gazette, or a free and open access website in the Borrower's country. Such advertisements are to be made in sufficient time for prospective bidders to obtain prequalification or bidding documents and prepare and submit their responses. In any event, a minimum preparation period of 30 days shall be given. The preparation period shall count (a) from the date of advertisement, or (b) when the documents are available for issue, whichever date is later. The advertisement and the prequalification and bidding documents shall specify the deadline for such submissions.
- (ii) The qualification requirements of bidders and the method of evaluating the qualifications of each bidder shall be specified in detail in the bidding documents,

and in the prequalification documents if a prequalification process precedes the bidding.

- (iii) If bidding is preceded by a prequalification process, all bidders that meet the qualification criteria set out in the prequalification document shall be allowed to bid and there shall be no limit on the number of prequalified bidders.
- (iv) All bidders shall be required to provide a performance security in an amount sufficient to protect the Borrower/Project EA in case of breach of contract by the contractor, and the bidding documents shall specify the required form and amount of such performance security.
- (v) Bidders shall be allowed to submit bids by mail or by hand.
- (vi) All bids shall be opened in public; all bidders shall be afforded an opportunity to be present (either in person or through their representatives) at the time of bid opening, but bidders shall not be required to be present at the bid opening.
- (vii) All bid evaluation criteria shall be disclosed in the bidding documents and quantified in monetary terms or expressed in the form of pass/fail requirements.
- (viii) No bid may be rejected solely on the basis of the bid price falling outside any standard contract estimate, or margin, or bracket of average bids established by the Borrower/Project EA.
- (ix) Each contract shall be awarded to the lowest evaluated responsive bidder, that is, the bidder who meets the appropriate standards of capability and resources and whose bid has been determined (a) to be substantially responsive to the bidding documents and (b) to offer the lowest evaluated cost. The winning bidder shall not be required, as a condition of award, to undertake responsibilities for work not stipulated in the bidding documents or otherwise to modify the bid as originally submitted.
- (x) Each contract financed with the proceeds of the loan shall provide that the suppliers and contractors shall permit ADB, at its request, to inspect their accounts and records relating to the performance of the contract and to have these accounts and records audited by auditors appointed by ADB.
- (xi) Government-owned enterprises in the Borrower's country may be permitted to bid if they can establish that they (a) are legally and financially autonomous, (b) operate under commercial law, and (c) are not a dependent agency of the Borrower/Project EA.
- (xii) Re-bidding shall not be allowed solely because the number of bids is less than three.

D. Consulting Services

49. The PMO, under the supervision of the IA will be responsible for engaging consultants to assist in project implementation and management as well as provision of training to JMG, JIDC, PMO and other related agencies for the project. The consultants will be engaged for the implementation support and capacity building component in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). Consulting services will be needed to (i) provide project management support and capacity building for the JMG, JIDC, PMO, and other related agencies; (ii) help JIDC, PMO, and design institutes to design, construct, and operate the project components, in particular the BRT; and (iii) ensure compliance of safeguards requirements, including EMP implementation and environmental monitoring, RP implementation and resettlement monitoring, gender action plan implementation and socioeconomic monitoring, etc.

50. Consulting services on technical design, construction supervision, and monitoring will be also needed for the JIDC and PMO. Since obtaining these services for infrastructure project implementation has been the common practice in the PRC, these services will be fully financed by domestic funds. The terms of reference will not be included in this PAM.

1. ADB-Financed Consulting Services

51. ADB financed consulting services under this project will include (i) project management and capacity building; and (ii) institutional capacity development for BRT design, construction, and operation. The PMO will be responsible for engaging the consultants in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).

a. Project Management and Capacity Building

52. A mix of international and national individual consultants will be engaged to provide support for project management to the JMG, JIDC, PMO, and other related agencies during project implementation. The project management services will include training and technical assistance on ADB procedures and requirements: (i) project performance management system (PPMS), (ii) procurement and disbursement, (iii) construction supervision and contract management, (iv) road safety audits, (v) financial management, (vi) safeguards requirements, and (vii) reporting requirements.

53. Eight individual consultants will be engaged, including two international specialists and six national experts. The project management consultants will assist and support the EA, IA and PMO during project implementation with:

- (i) review of project organization, operation and systems of monitoring and reporting procedures, in accordance with ADB guidelines;
- (ii) assistance in contract bid documentation, bidding and evaluation procedures, and appointment of contractors;
- (iii) assistance in facilitating required approval procedures and financial administration and management;
- (iv) advice and training on ADB disbursement procedures and assistance in establishing sound accounting, financial management, and reporting systems in accordance with ADB financial management guidelines and disbursement handbook;
- (v) finalization of the PPMS and implementation for effective safeguards monitoring and reporting;
- (vi) assistance in technical, managerial, institutional, coordination and financial activities as appropriate for project completion;
- (vii) undertaking road safety audit at stages of technical design, construction, and operation of the BRT and roads;
- (viii) training EA and IA on EMP and RP implementation, review bidding documents on environmental protection requirements, preparing semi-annual reports on environmental monitoring to ADB in accordance with external environmental monitor;
- (ix) advice and training on ADB policy and procedural requirements to ensure full compliance, and
- (x) assistance in developing report formats and establish mechanisms for preparing and submitting the reports specified in the loan and project agreements.

54. The total inputs for project management consulting services will be about 4 person-months international and 57 person-months national, including one international project management specialist (2 person-months), one international road safety specialist (2 person-months), one national project management and procurement expert (24 person-months), one national road safety expert (4 person-months), one national financial management expert (4 person-months), one environmental specialist (7 person-months), one gender specialist (8 person-months), and one resettlement capacity building specialist (10 person-months). The consultant inputs and cost estimates are summarized below. Detailed TOR for each consultant is shown in Appendix 3.

Table 10: Consulting Services for Project Management and Capacity Strengthening

Project Management - Individuals	Person-months	Rate	Total (US\$)
1. International			
(i) Project Management Specialist	2	20,000	40,000
(ii) Road Safety Specialist	2	20,000	40,000
2. National			
(i) Procurement and Project Management Expert	24	6,000	144,000
(ii) Financial Management Specialist	4	6,000	24,000
(iii) Road Safety Specialist	4	6,000	24,000
(iv) Environmental Specialist	7	6,000	42,000
(v) Gender Specialist	8	6,000	48,000
(vi) Resettlement Capacity Building	10	6,000	60,000
3. Travel			63,400
4. Per Diem			122,100
5. Contingency			35,000
Total	61	NA	642,500

55. The overall consultancy shall be provided over a five year implementation period. The PMO will recruit project management and road safety specialists as early as possible to support detailed design and preparation work. Other specialists will be recruited before loan effectiveness. For the environmental specialist, the external monitor should be engaged at the same time as this specialist, so that the consultant can provide training to the external monitor on the requirements for environmental monitoring.

b. Implementation Support and Evaluation for BRT and Integrated Urban and Transport Planning

56. A consulting firm will be engaged to provide technical support to the IA and BRT related agencies in (i) BRT design, construction, operation, (ii) assess the performance of hybrid-electric buses under BRT operations, and (iii) prepare the low-carbon urban planning study and guidelines. A mix of international and national consultants will provide about 69 person-months inputs, including 23 person-months international and 46 person-months national. In addition, workshops and seminars will be organized to provide training to the IA, public transport company, bus drivers, and other related agencies. The tasks of the consulting firm will include:

- (i) review of BRT design layout, station detailed design, and operational plan and providing advice to the IA and bus company on the various aspects as needed;
- (ii) assess capacity of bus company and develop a capacity building program for bus company in design, construction, and operation of BRT;
- (iii) developing detailed fare system specifications and review of the technical specifications in bidding documents;
- (iv) developing detailed ITS specifications and review of the specification in the bidding documents;
- (v) developing specification for BRT bus and review of the technical requirements in bidding documents; and
- (vi) assisting the IA and bus company in BRT marketing and addressing key issues of branding a BRT system.

57. The PMO will be responsible for engaging the consulting firm using QCBS (80/20) selection method in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The cost estimates are shown as follows and the detailed TOR for each consultant is included in Appendix 3.

Table 11: Consulting Services for Institutional capacity development and Evaluation for BRT and Integrated Urban and Transport Planning

Institutional capacity development for BRT and Urban Planning	Person-Months	Rate	Total (US\$)
1. International			
(i) Vehicle Technology Consultant	3.5	20,000	70,000
(ii) Fare System and ITS Consultants	3	20,000	60,000
(iii) BRT Implementation Support	3.5	20,000	70,000
(iv) Transport Planner/Team Leader	7	20,000	140,000
(v) Urban Planner	3	20,000	60,000
(vi) Cycle Network Specialist	3	20,000	60,000
2. National			
(i) Vehicle Technology Consultant	9.5	6,000	57,000
(ii) Fare System and ITS Consultants	6	6,000	36,000
(iii) BRT Implementation Support	9	6,000	54,000
(iv) Transport Planner	7	6,000	42,000
(v) Traffic Engineer	6	6,000	36,000
(vi) Financial Specialist	4	6,000	24,000
(vii) Urban Planner	4.5	6,000	27,000
3. Reports, Communication, Translation			42,000
4. Travel			90,000
5. Per Diem			140,000
6. Equipment			33,000
7. Workshops, training, seminars, and conferences			115,000
8. Surveys			30,000
9. Miscellaneous administration and support cost			36,500

Institutional capacity development for BRT and Urban Planning	Person- Months	Rate	Total (US\$)
10. Contingency			65,850
Estimated Total	69	NA	1,288,350

2. EA/IA-Financed Consulting Services

58. Following the requirements of the project agreement and loan agreement, the EA and IA are required to engage external monitors to conduct periodic monitoring on environmental impact, resettlement activities and impact to affected people, and socioeconomic impact, including gender action plan implementation. The JMG and JIDC agreed to engage the external monitors using domestic funds. The external monitors will include the (i) environmental external monitors; (ii) resettlement external monitor; and (iii) socioeconomic monitor.

59. **Environmental Monitoring.** The JMG and JIDC will engage Ji'an Environmental Monitoring Station (JEMS) to undertake monthly environmental monitoring of noise, air and surface water quality in accordance with the Environmental Management Plan (EMP) Internal Environmental Monitoring Program (EMP Table EMP-4). JEMS will prepare and submit monthly monitoring reports to the PMO, IA and JEPB. The estimated cost is \$140,000 as per EMP (Table EMP-9 Estimated Budget for Implementation of the Environmental Management Plan)

60. They will also engage an Environmental Supervision Engineer (ESE) to undertake external environmental monitoring and verify compliance with the EMP. The estimated cost is \$100,000 as per EMP (Table EMP-9 Estimated Budget for Implementation of the Environmental Management Plan). The ESE will prepare monthly environmental monitoring reports for submission to the PMO which will inform the quarterly project progress reports and semi-annual environmental monitoring reports prepared by the Loan Implementation Environmental Consultant.

61. **Resettlement Monitoring.** Following ADB's Safeguard Policy Statement 2009 requirements on involuntary resettlement, JIDC should recruit a national consultant/consulting firm to carry out the external monitoring on resettlement activities of the project and impact to the affected people. An external monitoring report on resettlement should be submitted to ADB regularly twice a year during the resettlement implementation period. The TOR for the external monitor is included in Appendix 5.

62. The external monitoring agency will undertake a baseline survey of the households affected by land acquisition and house demolition in the project, and collect baseline data on the production level and standard of living of the monitored displaced households (standard of living, production and income levels). During the implementation of the RP, the external monitor will regularly follow up resettlement and land acquisition activities twice a year through field observation, follow-up survey of the sample households and conduct random interviews with the displaced persons.

63. **Socioeconomic Monitoring.** Socioeconomic monitoring will include:

- (i) **Project Performance Monitoring.** A project performance monitoring system (PPMS) will be established by JIDC to monitor and evaluate socioeconomic impact of the project. The indicators of measuring impact, outcome, and outputs are specified in the design and monitoring framework. The JIDC will refine the

indicators with assistance of the consultant and establish a framework of monitoring no later than six months after loan effective. The socioeconomic impact of the project shall be monitored at least once a year starting from the first year of implementation to project completion and three years after completion.

- (ii) **Social Development Action Plan (SDAP) Monitoring.** A social development action plan has been developed for the project to ensure that important social and poverty issues are addressed during the project implementation. The social development action plan focuses on traffic safety, mitigation of social and health risks, protecting local communities from construction disturbance, opportunities to the local people in employment generated by the project, and improving their skills. Implementation of social development action plan should be monitored and reported to ADB periodically.
- (iii) **Gender Action Plan Monitoring.** The project is designed to meet ADB's requirements for Effective Gender Mainstreaming (EGM) categorization. To ensure provision of opportunities for promoting inclusive growth, gender equality, women's empowerment, mitigating social and health risks, and improving sustainable urban transport, a gender action plan (GAP) was developed for the project. The GAP will be implemented over the life of the project and implementation of GAP should be monitored and evaluated as well. Considering that monitoring of PPMS, SDAP, and GAP have some common requirements (or elements), it is recommended to incorporate SDAP monitoring and GAP monitoring into the overall project performance monitoring report. An external monitor to conduct the PPMS, SDAP, and GAP monitoring should be engaged by the PMO using domestic funds no later than six months of inception.

64. To help JMG and JIDC budget the costs for external monitoring, the indicative estimates for the three external monitors are provided as below for reference.

Table 12: Government Financed Consulting Services

Consulting Package	Budget	Financed by	Engaging Time
1. Resettlement Monitoring	\$128,000	JIDC	Nov. 2014
2. Environment Monitoring	\$240,000	JIDC	Mar. 2015
3. PPMS monitoring (incl. SDAP&GAP)	\$160,000	JIDC	Oct. 2015
Total Costs	\$528,000		

GAP = gender action Plan, JIDC = Ji'an Urban Investment and Development Company, PPMS = project performance monitoring system, SDAP = social development action plan.

65. In addition, considering that the JMG and JIDC has less experience in BRT design, a TOR and cost estimates for preliminary design and detailed design of BRT are provided in Appendix 3 for JMG and JIDC's reference.

VII. SAFEGUARDS

A. Safeguards

66. Pursuant to ADB's Safeguard Policy Statement (SPS) (2009),¹⁵ ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the SPS.

¹⁵ Available at: <http://www.adb.org/documents/safeguard-policy-statement>.

67. **Safeguards Classification.** The project is classified as A for environment, A for involuntary resettlement and C for indigenous peoples.

68. **Grievance Redress Mechanism.** JMG/PLG through the PMO will establish a grievance redress mechanism (GRM) prior to any earthworks, land acquisition and resettlement, and no later than 60 days after loan effectiveness. The GRM will be acceptable to ADB, consistent with the requirements of the ADB Safeguards Policy Statement (2009) and the project EIA, EMP, and RP.

69. The GRM provides a clear and transparent mechanism for receiving, managing, recording and reporting on complaints. The GRM will be publicized to affected persons. The GRM process will be utilized for all project related grievances. The GRM will:

- (i) review and document eligible complaints of Project stakeholders;
- (ii) proactively address grievances;
- (iii) provide the complainants notice of the chosen mechanism/action to redress the grievance; and
- (iv) prepare periodic reports to summarize the number of complaints received and resolved, and final outcomes of the grievances and chosen actions and make these reports available to ADB upon request.

70. The PMO will have overall responsibility for implementation of the project GRMs. Contractors will be required to report complaints received, handled, resolved and unresolved to the PMO on a monthly basis. The PMO will report on the GRMs in the quarterly project progress reports and semi-annual safeguard monitoring reports for ADB.

B. Environment

71. **Environmental Management and Supervision.** An environmental impact assessment (EIA) and environmental management plan (EMP) were prepared for the Jiangxi Ji'an Sustainable Urban Transport Project. These documents comply with the PRC regulatory requirements and ADB Safeguards Policy Statement (2009) and were disclosed on the ADB website on 9 May 2014. The EIA shows that anticipated environmental impacts and risks are modest and can be limited to an acceptable level through the implementation of the EMP and compliance with loan covenants. The EMP (included in Appendix 1) prescribes a set of measures to address the adverse environmental and social impacts of the project. In addition to establishing mitigation measures and implementation responsibility the EMP also includes monitoring mechanisms to ensure compliance with EMP requirements and environmental regulations of the PRC and a grievance redress mechanism. The EIA includes a grievance redress mechanism to provide the framework for addressing environmental concerns. This section outlines:

- (i) Implementation Arrangements
- (ii) Bidding Document and Contract Provisions
- (iii) Supervision of Environmental Management Plan Implementation
- (iv) Environmental Quality Monitoring Requirements
- (v) Environmental Monitoring and Reporting

72. **Climate Risk and Vulnerability Analyses Study.** The project was classified as being at high risk from potential future climate change impacts. A climate risk and vulnerability analyses study determined that the project area is at risk from increased intensity and frequency

of heavy rainfall events and flood. The study recommended that the detailed design considers adoption of higher factors of safety as the basis of design to ensure the project is resilient to projected future climate change impacts. The recommendations have been included in the EMP in Appendix 1. A summary of the report is included in the RRP Supplementary Appendix 19: Project Climate Risk Assessment and Management and the detailed report is included in Appendix 3 of the EIA.

73. Implementation Arrangements. The responsibilities for environmental management and supervision are outlined in Table 13.

Table 13: Environmental Management Institutional Responsibilities

Phase	Responsible Agency	Environmental Responsibility
Project preparation	Design Institutes on behalf of JPMO	<ul style="list-style-type: none"> ● Prepare feasibility study reports (FSR), environmental impact report (EIR), soil and water conservation report (SWCR), resettlement plan (RP)
	JPMO	<ul style="list-style-type: none"> ● Review the FSRs, EIRs, SWCR and RP. ● Engage a staff environmental specialist
	JEPB	<ul style="list-style-type: none"> ● Review and approve the EIR and disclose
	JPWRB	<ul style="list-style-type: none"> ● Review and approve the SWCR and disclose
	PPTA consultant	<ul style="list-style-type: none"> ● Provide technical assistance ● Review domestic EIR ● Conduct environmental due diligence ● Prepare project environmental impact assessment (EIA) report and environmental management plan (EMP)
	ADB	<ul style="list-style-type: none"> ● Review and approve the EIA and EMP and disclose on ADB website
Detailed design	Design Institutes on behalf of JPMO	<ul style="list-style-type: none"> ● Incorporate mitigation measures defined in the EMP into engineering detailed designs
	JPMO	<ul style="list-style-type: none"> ● Review mitigation measures defined in the EMP, update where necessary based on detailed design ● Engage the independent Environmental Supervision Engineer (ESE). ● Engage the Loan Implementation Environmental Consultant (LIEC) under the Loan Implementation Consulting Services
	ESE and LIEC	<ul style="list-style-type: none"> ● Review detailed design to ensure inclusion of relevant mitigation measures ● Assist JPMO in updating the EMP where necessary
	ADB	<ul style="list-style-type: none"> ● Approve updated EMP and disclose on ADB website
Tendering, contracting and pre-construction	JPMO	<ul style="list-style-type: none"> ● Incorporate EMP clauses into tender documents ● Commission JEMS for internal environmental quality monitoring during the construction phase ● Establish the project grievance redress mechanism with a complaint center and hotline
	ESE	<ul style="list-style-type: none"> ● Review tender documents to ensure inclusion of EMP clauses ● Review contractor's method statements on implementation of mitigation measures
	LIEC	<ul style="list-style-type: none"> ● Review tender documents to ensure inclusion of EMP clauses ● Conduct training for the staff from JPMO, IA, O&M units and contractors on environmental management, environmental monitoring and EMP implementation
	Contractors	<ul style="list-style-type: none"> ● Prepare and submit tenders for the construction contracts, to include staffing and costs for environmental management to comply with the EMP ● Prepare method statements on implementation of mitigation measures
	ADB	<ul style="list-style-type: none"> ● Review bid documents and confirm project's readiness
Construction	IA	<ul style="list-style-type: none"> ● Develop project management procedures, implementation plan,

Phase	Responsible Agency	Environmental Responsibility
		<ul style="list-style-type: none"> and financial management ● Approve contractor's method statements on implementation of mitigation measures ● Undertake day-to-day project and EMP implementation activities for all infrastructure components ● Administer and monitor the contractors and suppliers ● Supervise EMP implementation to ensure compliance by contractors
	JPMO	<ul style="list-style-type: none"> ● Coordinate with all involved agencies, departments, and institutes for project implementation ● Coordinate the project level grievance redress mechanism ● Conduct public consultations as indicated in the EMP ● Supervise EMP implementation ● Prepare project documents and report to JMG, JPLG and ADB ● Submit withdrawal applications and supporting documents to ADB ● Submit project implementation progress reports and safeguards monitoring reports to ADB ● Submit all procurement and disbursement documents to ADB for necessary approval ● Disclose project-related information and documents in accordance with ADB guidelines
	JEMS	<ul style="list-style-type: none"> ● Conduct internal environmental quality monitoring in accordance with the EMP ● Recommend additional environmental quality monitoring when needed ● Prepare and submit monitoring results to JPMO, IA and JEPB monthly
	ESE	<ul style="list-style-type: none"> ● Conduct external compliance monitoring of EMP implementation ● Review internal environmental quality monitoring data collected by JEMS ● Prepare monthly environmental monitoring reports ● Advise on mitigation measures when needed ● Assist JPMO and IA in preparing monthly and quarterly project progress reports ● Support LIEC with preparation of semi-annual environmental monitoring reports
	LIEC	<ul style="list-style-type: none"> ● Conduct compliance monitoring of EMP implementation ● Assist JPMO in preparing semi-annual environmental monitoring reports for submission to ADB ● Prepare environmental completion report for ADB
	JEPB	<ul style="list-style-type: none"> ● Conduct periodic and random inspections of all construction projects relative to compliance with PRC regulations and standards
	ADB	<ul style="list-style-type: none"> ● Review semi-annual environmental monitoring reports ● Undertake review missions
Operation	O&M units	<ul style="list-style-type: none"> ● Operate and maintain the project facilities ● Engage JEMS in conducting environmental quality monitoring during the operational phase
	IA	<ul style="list-style-type: none"> ● Coordinate and supervise EMP implementation
	JEMS	<ul style="list-style-type: none"> ● Conduct internal environmental monitoring for the first year of operation according to the EMP
	ADB	<ul style="list-style-type: none"> ● Conduct project completion review

ADB = Asian Development Bank; ESE = environmental supervision engineer; IA = implementing agency; JEMS = Ji'an Environmental Monitoring Station; JEPB = Ji'an Environmental Protection Bureau; JPMO = Ji'an Project Management Office; JPWRB = Jiangxi Provincial Water Resource Bureau; LIEC = loan implementation environmental consultant; O&M = operation and maintenance; PPTA = project preparatory technical assistance.

74. **Bidding Documents and Contracts.** The project EA shall cause the project IA to ensure that all bidding documents and contracts for Works contain provisions that require contractors to: (a) comply with the measures relevant to the contractor set out in the EIA and the EMP, and any corrective or preventative actions identified in semi-annual Environmental Monitoring Reports.

75. In particular, the IA needs to include in the bidding documents and contracts, requirements that the Contractor will be responsible for preparing of specific environmental management plan (Contractor's Environmental Management Plan) based on the EMP outlined in the EIA, prior to the commencement of construction activities. The contract should specify that the contractor is to report monthly on the implementation of Contractor's Environmental Management Plan.

76. The EMP (Appendix 1) requires that the Loan Implementation Environmental Consultant (LIEC) under the loan implementation consulting services, will prepare and provide the following specification clauses for incorporation into the bidding procedures: (i) a list of environmental management and monitoring requirements to be budgeted by the bidders in their proposals; (ii) environmental clauses for contractual terms and conditions; and (iii) major items in the EIA, and the full EMP.

77. **Supervision of the site-specific Environmental Management Plan Implementation.** The EA through the PMO and the IA are responsible for supervision of the implementation of the EMP. The EMP is found in Appendix 1 of the EIA and Appendix 1 of the PAM. An independent Environmental Supervision Engineer, contracted by the PMO and supported by trained environmental management staff of the PMO and the IA, will be responsible for supervision of the implementation of the EMP. An external environmental consultant (referred to in EMP as Loan Implementation Environmental Consultant) will be appointed through the ADB financed Loan Implementation Consulting services. This consultant will support preparation and training prior to construction, carry out site audits, review environmental quality monitoring results and prepare semi-annual environmental monitoring reports and the environmental completion report for ADB.

78. **Environmental Quality Monitoring.** The EMP includes noise, air quality, and water quality monitoring requirements during the construction and operational phases. The Ji'an Environmental Monitoring Station will be contracted by the PMO to conduct the environmental quality monitoring program (these services will be financed by the EA). The results of the environmental quality monitoring will be included and interpreted in the semi-annual environmental monitoring reports.

79. **Grievance Redress Mechanism (GRM).** The PMO will establish a public complaints center for the project to deal with all safeguard related complaints, as described earlier in this section. The environment GRM was developed by ADB as part of the EMP to provide a framework for resolving informal and formal complaints about environmental performance. The PMO will be responsible for implementing the GRM in line with ADB requirements as set out in the EMP.

80. **Reporting.** The Environment supervision team will prepare monthly environmental reports for submission to the PMO. The Loan Implementation Environmental Consultant will support the PMO and the Environmental Supervision Engineer in the preparation of semi-annual environmental monitoring reports and the project completion report for ADB.

81. **Change of Project Scope or Unanticipated Impacts and Risks.** If there are any changes in Project scope or unanticipated environmental and/or social risks and impacts that arise during construction, implementation or operation of the project that were not considered in the EIA and the EMP, the PMO should promptly inform ADB so updates can be made and/or a corrective action plan implemented.

C. Land Acquisition and Resettlement (LAR)

82. The urban road and river rehabilitation and greenway components will involve land acquisition and resettlement. Since public transportation and BRT are to be constructed on existing roads and alignments, they will not involve any land acquisition and resettlement. The project will be implemented by Ji'an Urban Construction Investment and Development Company (JIDC). With the assistance of ADB PPTA consultants and Jiangxi Academy of Social Sciences, a resettlement plan (RP) has been prepared by JIDC in order to address land acquisition and resettlement impacts caused by the project.

83. **Land Acquisition and Demolition Impacts.** For these two components a total 199.4 hectares of land will be acquired, including 162.2 hectares of rural land areas and 37.2 hectares of state owned land areas. The acquisition will affect a total 1,742 households and 6,789 persons from 48 village groups, 12 villages in 4 towns in Ji'an. Among total acquired rural lands, there are 1,548 mu¹⁶ of paddy land, 198 mu dryland, 4 mu of garden, and 303 mu of woodland. Along with land acquisition, a total of 70,682 square meters (m²) of rural houses will be demolished causing relocation of 184 households with 806 persons from 26 village groups of 8 villages. In addition, 9,178 m² of urban houses will be demolished causing relocation of 90 households with 360 persons. The land acquisition will also affect 14 enterprises with acquisition of 458 mu of land areas and demolition of 14,795 m² of buildings, with 188 employees in these enterprises. However, demolition of the enterprise buildings will not impact the normal function of these enterprises. The overall impact includes 1,832 households and 7,337 persons, of which 1,029 households with 4092 persons are considered significantly affected as they will lose more than 10% of their landholdings or need to be relocated to new housing.

84. **Resettlement Plan.** To address the land acquisition and resettlement impacts a draft RP based on feasibility study report has been prepared. The draft RP is prepared in accordance of ADB's SPS (2009), SR – 2 on involuntary resettlement (IR) and relevant national and provincial/local policies of the PRC. The draft plan has been endorsed by the Executing Agency (EA) and disclosed to the project-affected persons (APs) and on the ADB website in July 2014. Compensation for lost assets and resettlement allowance will be paid to the APs prior to the land acquisition and demolition. The focus of resettlement planning is to ensure that the APs are adequately compensated, their livelihood restored and they benefit from the new employment and income generation opportunities. Households affected by permanent land acquisition will be compensated in cash and will also follow land redistribution system at the village collective level. Households affected by relocation will have options of cash compensation or property exchanges based on the principle of replacement cost. To ensure that the 'transition period' for people affected by house demolition does not exceed the limits set in the RP, the EA will ensure that the PMO coordinates and liaises with other responsible agencies to finalize the relocation process in a timely manner. The EA through PMO will ensure that relocation of the affected households is organized in a concentrated manner so that their social and community

¹⁶ A mu is a Chinese unit of measurement (1 mu = 666.67 m²).

characteristics and networks remain functional. JIDC will ensure that the plans are implemented effectively and in consultation with resettled and host communities wherever applicable.

85. RP Finalization. JIDC will ensure that a detailed measurement survey (DMS) is conducted to finalize the draft RP. DMS will include undertaking a full census of the affected households and preparation of an inventory of the losses. Various parties should be on site during DMS and recording, including APs, leaders of local communities, representatives of government organizations and project construction unit, supervision. During the DMS, all affected properties should be identified and included in the scope of impacts, and the process should be transparent. The detailed list of loss for each household should be signed and confirmed by various parties and a copy should be kept in file by each party who signed the document. Final RP will be submitted to ADB for review and approval, prior to the award of civil contracts, for those with LAR impacts (permanent or temporary). Finalization of draft RP will follow the “detailed measurement survey” procedure incorporating a full census of the APs and a complete inventory of lost assets. The finalized RPs will be disclosed to the APs and on the ADB website. JMG will ensure that no civil work is awarded prior to the finalization of the RP.

86. Policy Framework and Implementation Arrangements. The draft RP is prepared in accordance with policies at national, provincial, and municipal levels related to land acquisition and resettlement in the PRC and ADB’s SPS (2009) – SR 2. The resettlement principles established for project include (i) avoid involuntary resettlement wherever possible; (ii) minimize involuntary resettlement by exploring project and design alternatives; (iii) enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; (iv) improve the standards of living of the displaced poor and other vulnerable groups (at least to minimum standards); (v) compensation will be based on replacement cost of lost assets; (vi) compensation and entitlements provided to APs will be adequate to improve their living standard; (vii) all APs will be provided with resettlement assistance and fair compensation; (viii) all APs will be informed of the eligibility, compensation standards, livelihood, and income restoration plans, and project schedule to ensure that they will be able to participate in the RP implementation process; (ix) no land should be acquired unless replacement land or sufficient compensation for resettlement is provided to AP; (x) the IA and an independent third party will monitor compensation and resettlement work; (xi) vulnerable groups should receive special assistance to ensure they can live a better life and the APs will benefit from the project; and (xii) the resettlement budget covers all aspects of compensation and rehabilitation assistance and is part of the overall project budget. JIDC will ensure that these policy requirements are complied with through an effective implementation of the RP. Any significant changes in project scope/design will be reported to the ADB, and the RP will be updated and submitted for ADB concurrence prior to the commencement of work on the changed scope of the project.

87. Entitlements and Compensation Standards. For people affected by the project, the resettlement objective is to achieve equal or better income and living standards in line with the PRC Land Administration Law (2004), Notice of Adjusting the Standard of Compensation for Land Acquisition in Certain Areas of Central City of Ji’an (Jizhou District, General Office of Ji’an Municipal Government, No. 62 Decree, 2011), and the ADB’s Safeguards Policy Statement (2009). Any people losing land, housing, other assets or income sources will be assisted to fully restore their income and living standards. The entitlements are based on the principle of “replacement cost” for lost assets. Land compensation standards are determined by the relevant national and local policies and existing social and economic conditions of the project affected areas. The permanent land acquisition will be compensated in cash based on the multiples of average annual output value (AAOV) which are deemed to be adequate to replace income losses.

88. For rural residential houses affected by demolition the main compensation packages that will be negotiated with the affected households are as follows: cash compensation or property exchange can be opted by APs. These options are based on the principle of 'replacement cost' without taking into account the depreciation value. The affected people are also entitled to salvage the material from the house affected by demolition. APs will also be entitled to compensation for decoration, movement subsidies, transition subsidies, and compensation for auxiliaries. Urban houses will be compensated in cash based on appraised market value of the lost house.

89. The losses of affected enterprises and institution will also be appraised according to the market value by the qualified real-estate appraisal institute. Compensation fees will be paid directly to the proprietors and income losses arising from the project will also be included in such appraisal. In case of relocation they will be entitled for full compensation covering their business losses during the relocation period. The workers will be retained as far as possible. If workers are laid off, they will be informed 1 month before the demolition and receive 3 months wages and assistance to find new jobs. The workers will also be eligible for trainings and jobs created by the project.

90. The compensation standards, as per the entitlement matrix of the various RPs, are provided in Table 14.

Table 14: Resettlement Entitlement Matrix

Type of Impact	Degree of Impact	Definition of Entitled Person	Compensation Policy/Standards	Implementation Issues
Permanent land acquisition	A total of 162.2 ha rural land, including paddy, dryland, garden, house site, etc.	Affected 1,742 households and 6,789 persons in 12 villages and 48 village groups	<p>1. The compensations are executed by Doc. No.62 JMG [2011]. The compensations will be different among different towns and villages based on their locations. They will be set at CNY 33,000 to CNY 56,800 per mu¹⁷ for paddy, fishpond and orchard; CNY 23,000 to CNY 43,000 per mu for garden land, dryland and housing plots, and CNY16,000 to CNY 37,000 per mu for woodland and other lands. The compensation for attachments on land including green crop is set at CNY 1,500 per mu.</p> <p>2. Green crop compensation will be paid to affected people, and land compensation and resettlement subsidy will be distributed evenly among affected village groups following land readjustment in affected village groups.</p>	Farmers will be got recommendations/ assistance for transfer to urban status. and, if required to facilitate urban transfers and training program
	Baka A total of 37.2 ha state owned land areas.	Affect 14 work units	3. The compensation for state-owned land was set at CNY 115,000 per mu.	

¹⁷ A mu is a Chinese unit of measurement (1 mu = 666.67 m²).

Type of Impact	Degree of Impact	Definition of Entitled Person	Compensation Policy/Standards	Implementation Issues
Loss of residential houses and properties on collective land	Affected 70,681.5 m ² residential housings and facilities	Affected 184 households and 806 persons	<p>1. The expropriated building will be compensated based on assessed value following replacement price (see Table 4.5 for reference). In addition, for principal room area, additional CNY400/m² will be provided. On top of these, for those select cash compensation, additional CNY600/m² will be provided based on principal room area.</p> <p>2. For those selecting property exchange method of rehabilitation, they will be provided with replacement housing based on lost principal houses with sale price set at CNY1430/m². The total resettlement housing shall not exceed 60 m² per capita. For the area of principal room area beyond 60 m² they will be provided subsidy at CNY600/m². For those with existing house below 30 m² they will be provided with resettlement housing at 30 m² per capita and settling price difference. For those with house between 30-60 m² per capita, they will be provided with resettlement house based on the existing house and settling the price difference.</p> <p>3. Attached facilities include: well CNY 3,500/well or CNY 5,000/well, pressure well CNY 600/well or CNY 1,200/well, fence wall CNY 30–100/m, cement sunning ground CNY 20/m² or CNY 30/m², house foundation CNY 40/m or CNY 80/m, fruit tree CNY 20/tree or CNY 40/tree, miscellaneous tree CNY 2/tree or CNY 4/tree, rare tree is charged for separately, grave CNY 1,200/piece.</p> <p>4. Relocation: CNY5/m² (area of principal room); fixed-line telephone CNY 158/HH, cable television CNY 120/HH, pipeline gas CNY1,200/HH, tap water CNY200/HH, power facilities CNY 200/HH.</p> <p>5. Resettlement: interim transition CNY 5/m² per month from the date of signing agreement to the date of building resettlement houses.</p> <p>6. Subsidy and incentive: according to the schedule of expropriation, CNY 100-260/m² of principal room areas.</p>	<p>1. The compensations for demolition and resettlement should be paid to the APs in time.</p> <p>2. The town government shall provide assistance to APs.</p> <p>3. The APs move into new house before house demolition cannot get interim transition fees.</p>

Type of Impact	Degree of Impact	Definition of Entitled Person	Compensation Policy/Standards	Implementation Issues
Loss of residential houses and properties on state-owned land	Affected 9,177.54 m ² residential housings and facilities	90 Households of 360 persons	<p>1. Compensation by the structure and area of expropriated building based on assessed market value by qualified appraisal agency in accordance with Doc. No.12 JMG [2011]. The owner could choose either monetary compensation or property exchange as rehabilitation. For those select cash compensation, additional 10% of assessed market value of affected house will be provided.</p> <p>2. Relocation: CNY 6/m² (pay for twice relocation fees to APs choosing change of titles). Monetary compensation for movement and installation: fixed-line telephone CNY 158/HH, cable television CNY 120/HH, pipeline gas CNY 1,200/HH, broadband networks CNY 200/HH, split hanging air conditioner CNY 200/HH, split vertical air conditioner CNY 300/HH.</p> <p>3. Resettlement: interim transition CNY 6/m² per month (3–36 months). The expropriated building department provides resettlement building shall not pay temporary settlement fees to the APs.</p> <p>4. For those select property exchange, they will be provided with replacement housing based on 1 for 1 principle. If an owner's expropriated dwelling area is less than 36 m² and he has only the house in Ji'an, the owner shall be settled a dwelling that not exceed 50 m². Among the 50 m², the difference between the value of the expropriation building and the value of the settlement building within 36 m² will not be settled, while the difference beyond 36 m² will get settled on the price of social security housing that municipal government published in the same year. Because of plan, the area beyond 50 m² will be settled on the market price of real estate similar to the building expropriated on the date of announcement of the building expropriation decision. The owners qualified related conditions of relief and special care at the city or district level shall get priority to enjoying related reliefs and subsidies.</p>	<p>1. The compensations for demolition and resettlement should be paid to the APs in time.</p> <p>2. The district government shall provide assistance to APs.</p> <p>3. The price of decoration materials shown in Table 4.6.</p>
			5. Incentive: according to the date of agreement signature (20–60 days), the owners with one household as a unit can be rewarded CNY 50–200/ m ² per month; every household with one building as a	

Type of Impact	Degree of Impact	Definition of Entitled Person	Compensation Policy/Standards	Implementation Issues
			unit can be rewarded 1%–3% assessment price of expropriation building; and every household with one area as a unit can be rewarded CNY10,000.	
Loss of non-residential houses and properties	office, industrial and storage building 14,794.95 m ²	Owners of affected buildings and properties	<p>1. The compensations are executed by Doc. No.12 JMG [2011] based on assessed market value of affected properties. The compensation will be made only monetary compensation and no property exchange method will be offered as all affected structures are not commercial buildings.</p> <p>2. Relocation: offices and industrial buildings CNY 6/m². The expropriated building department shall pay the owners the movement cost of fixed-line telephone, air conditioner, cable television, pipeline gas, broadband networks on the price of the date of announcement of the building expropriation decision.</p> <p>3. Subsidy: for monetary compensation, the owner shall be subsidized 2% of assessment price of non-commercial buildings if compensation and relocation could be completed within the timeframe.</p> <p>4. Incentive: according to the date of agreement signature (20-60 days), the owners can be rewarded CNY 10–50/m². The owners qualified related conditions of relief and special care at the city or district level shall get priority to enjoying related reliefs and subsidies.</p>	
Public Infrastructure	Bridge, power facilities, communication facilities, water facilities and gas facilities	Property owners	Monetary compensation for the owners, and the owners are responsible for the infrastructure recovery.	
Vulnerable groups	Land-lost farmers, women, and the elder	<p>a)Affected women</p> <p>b)men aged 60 years and women age 55 years</p> <p>C)the elder unqualified for government sponsored senior homes in rural</p>	<p>1. Affected women shall be given priority to be recommended work in electrics and textile factories in Jizhou Industry Zone.</p> <p>2. Yudai river improvement project can provide security and cleaning work for the elder with working ability.</p> <p>3. The rural old persons who have unqualified conditions for enrolling in government sponsored senior home will be given “Five</p>	

Type of Impact	Degree of Impact	Definition of Entitled Person	Compensation Policy/Standards	Implementation Issues
			Guarantees Supporting” in old folks’ home by municipal government. The supporting standard is CNY2460/year per person.	
			4. All affected vulnerable persons will be provided with additional cash support at CNY2,400 per person.	
Economic rehabilitation measures for land-lost farmers	per capita farmland below 0.3 mu after land acquisition	Land-lost farmers with per capita farmland below 0.3 mu	<p>1. Health care security: the farmers enjoy new-type rural cooperative medical service, the rate of compensation for their hospitalization in medical institute increase 5%.</p> <p>2. Job assistance: special funds used as assisting land-lost farmer starting a business, including providing priority resettlement public welfare job and subsidies; enterprise training subsidies; free training at regular intervals in appointed training institutes; free introduction of job; petty loan; reducing or remitting related tax to land-lost farmers of the individual operators; etc.</p>	
AP = affected person; ha = hectare; HH = household; JMG = Ji'an Municipal Government; m ² = square meters.				

91. **Resettlement investment and fund management.** The cost of land acquisition and resettlement under this Project, including contingencies and related taxes and duties, is estimated to be CNY 505 million. The detailed resettlement cost will be estimated after the compensation policy is finalized. The cost of land acquisition and resettlement has been included in the total cost of each component. The EA will ensure that adequate counterpart funding will be made available for land acquisition and resettlement. At the implementation stage, the compensation contract will be negotiated and signed with the affected villages, affected HHs and affected organizations. Therefore, the final resettlement cost may be subject to further adjustment.

92. **Resettlement and income restoration.** Losses of cultivated land suffered by the affected villages and households have been checked in detail and negotiations on income restoration plan have been conducted with the APs. Findings and results of participation have been incorporated in the RPs. To ensure successful resettlement of APs and restore their living standards, a detailed rehabilitation plan is developed and included in the RP. For land loss impacts, rehabilitation measures include distribution of cash compensation among village groups, redistributing remaining land holdings among village groups, offering various skill training and job introduction for APs, including priority employment in nearby industrial districts; providing preferential policies to APs who are self-employed; and offering pension program for APs who have no land or per capita farmland below 0.3 mu. During project construction, efforts will be made to provide temporary employment opportunity to APs in order to increase their income. The affected villages will be provided with 8% of construction land after land acquisition which could be used for commercial development. The increased collective economy will allow the affected villages to offer various subsidies to the village members, including those vulnerable ones.

93. Vulnerable groups are defined as poor families, disabled people, the elderly, and woman headed the household. In the project, there are 303 vulnerable persons, including 150 women, 62 old persons, 105 disabled persons and 56 persons with chronic disease. They account for 4.46% of the total APs. During the course of resettlement implementation, the project proponent will give priority support and help in training, job seeking, and social security to rehabilitate and improve the lives of these vulnerable persons, including giving priority of introduction of employment and jobs related to the project; provision of loan help to those self-employed; provision of elderly home for the rural elderly persons living alone and who do not meet the requirement of public elderly center; provision free relocation; priority of arrangement of public rental housing; provision lowest living guarantee for the vulnerable groups who meet the standard of lowest living guarantee support; and provision of public health, social security and other public services help whenever necessary. For project affected vulnerable groups, financial support of CNY 2,400 per person will be provided in addition to compensation for lost land and assets.

94. **Implementation Arrangement and Schedule.** In order to implement the RP in a smooth and effective manner, a resettlement organizational network from higher to lower governmental levels will be established and will be responsible for detailed planning, coordination, implementation and monitoring of resettlement activities. The JMG will be the executing agency (EA) which will establish a resettlement implementation unit (RIU) at the PMO. The RIU will have overall responsibility for coordination of RP implementation. The RIU will ensure that the resettlement process is in accordance to the RP. The staff is divided in three groups responsible for urban house demolition, rural house demolition and land acquisition. The staff will be responsible for coordination with various other agencies working on resettlement implementation. The resettlement unit at the PMO has over 10 years of experience of

undertaking LAR based on local regulation but the project will be their first to work with a multilateral agency. The EA has requested for capacity building on ADB procedures and policies and a capacity building expert will be engaged under the ADB's consultancy support towards project management (ToR for Resettlement Capacity Building Specialist is attached as Appendix 3).

95. The IU will coordinate with the relevant line agencies involved in RP implementation and will be responsible for timely reporting of the progress of RP implementation. JIDC through the PMO will ensure that the project implementation follows the implementation schedule prepared for land acquisition and resettlement activities. There will be no land acquisition and house demolition without the payment of compensation and no civil works shall commence without payment of compensation to the affected persons and signing of land acquisition agreements.

96. **Affected Persons' Participation and Consultation.** JIDC through the PMO will ensure that the APs are informed and consulted about the project benefits, project adverse impacts, compensation and entitlements, livelihood restoration programs, and the procedures set out to redress affected peoples' grievances and will follow consultation and participation schedule (C&P) as outlined in the RP indicating timings, methods, objective, documentation procedures and incorporation of affected peoples' opinions on resettlement and implementation.

97. **Grievance Redress Mechanism.** JIDC will ensure that an effective mechanism is established to deal with project related grievances of the affected persons. Such grievances may derive from measurement of asset losses; surveying, statistics and computation errors; compensation standards and entitlements including the methodology used for calculating these entitlements; preparedness and suitability of resettlement sites; and delays faced during the implementation of RP. The agreed GRM will provide a clear and transparent mechanism and has been publicized to the affected persons. If the GRM process does not meet the requirements of APs, at any time they may take their case to the civil courts, in accordance with the Civil Procedures Act. The GRM process may be utilized for other project related grievances. JIDC will ensure that a record of such grievances received and resolved will be kept by the PMO and upon request will be made available for review to the external monitors and ADB review missions.

98. **Accountability Mechanism.** The mission explained ADB's Accountability Mechanism Policy and provided the Chinese version of the policy to JIDC. The EA understands that at any time, an affected person who has, or will, experience direct harm may submit complaints to ADB's Accountability Mechanism. The mission has explained that the Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged non-compliance with ADB's operational policies and procedures. The EA understands their specific role and responsibilities in relation to the Accountability Mechanism and has agreed to cooperate to the fullest in case of complaints made. The cooperation includes providing compliance review mission access to the site, complainant and relevant information and documents.

99. **Record Keeping.** JIDC will ensure that the PMO keep the relevant records of the RP implementation process. These include records of household agreements signed on land acquisition demolition, records of compensation paid, public participation and consultation records and integration of outcomes of these consultation process, grievances received and resolved. On request these records will be made available for review to external monitor and ADB missions.

100. **Monitoring and Evaluation (M&E).** The plan for internal and external M&E is included in the RP. The PMO will be responsible for internal monitoring and supervision, and reporting quarterly on the progress of RP implementation to the ADB. The RP implementation is also monitored and its effectiveness evaluated by an external monitor. JIDC will engage an independent external monitor in accordance with the ADB procedures. The detailed TOR for the external monitor is included in the RP and as Appendix 3 of PAM. The external monitor will be engaged prior to the commencement of land acquisition and resettlement activities. The monitor will conduct a baseline survey prior to resettlement and will provide ADB and PMO copies of the M&E reports twice a year during resettlement implementation and once a year after resettlement completion. These reports will be disclosed on ADB website and made available to the APs.

D. Indigenous Peoples

101. The project will not adversely impact any ethnic minority communities and remains a Category C for indigenous peoples' safeguards. No further actions are required.

VIII. GENDER AND SOCIAL DIMENSIONS

A. Gender Action Plan

102. **Background.** Ji'an is located in the central part of Jiangxi Province. The project area is situated in the new western city development area. Ji'an Municipal Government, the executing agency (EA), has proposed the following components to be financed by Asian Development Bank (ADB): (i) a 6.9-kilometer (km) bus rapid transit (BRT) system and public transport hub, (ii) river rehabilitation and "greenway" development, (iii) traffic management system and 19.3 km of urban roads, and (iv) Institutional Capacity Development. The proposed project will contribute to inclusive growth and environmentally sustainable development in Jiangxi Ji'an by improving the efficiency and sustainability of urban transport.

103. Gender analysis and community consultations during the project poverty and social impact analysis (PSA) demonstrated that the project will have positive benefits for both women and men in terms of improved mobility in both the urban and rural areas near the project. Gender-sensitive measures are taken to enhance the Project's positive benefits and minimize the potential negating impacts. The PSA indicates a demand for improved public transit facilities for women to accommodate household jobs such as buying food and daily necessities, sending and picking up children from the school and going to hospital and for employment. A safe, comfortable and efficient public transport system will be beneficial for women. To ensure benefits for women, the project has carefully considered gender dimensions in physical design of the project and in the operation of public transport service.

104. Improved transport infrastructure can increase access to employment opportunities for women in new jobs related to the project development such as transport construction and urban landscaping and ongoing operation and maintenance of transport facilities and services.

105. In order to maximize positive gender impact, the project has been designed to meet an ADB Effective Gender Mainstreaming (EGM) categorization, and a project gender action plan (GAP) has been prepared. GAP features will include a focus on: ensuring women's equitable participation in project-related public consultation; incorporating gender-responsive features in the design of urban transport infrastructure; promoting increased employment opportunities for

women; and building EA/implementing agency institutional capacity for gender mainstreaming. The GAP is presented in Table 15.

Table 15: Gender Action Plan

Project Output	Activities and Performance Indicators/Targets	Responsibility
Output 1: Public Transport	1a. BRT system - BRT system physical design will include: <ul style="list-style-type: none"> • Priority seating for people with special needs(i.e. pregnant women, parents with young children or prams, elderly, and people with disability) in all buses and stations • Safe pedestrian access, including for people with special needs • Installation of 'help buttons' and security cameras on all BRT buses and at all stations • Well-lit buses and bus stations 1b. Station square - Employ at least 20% local women in unskilled construction jobs - Employ at least 20% as drivers, and 50% for ticketing, fare collection and administration work - Ensure re-employment of female bus drivers from pre-existing bus routes which are replaced by the BRT system - Ensure equal pay for work of equal value for all BRT jobs	EA/IA, Design Institute, Contractors, Municipal Bus Company, and ACWF
Output 2: Yudai River rehabilitation and greenway	- Employ at least 20% women in unskilled local construction jobs at equal pay for work of equal value - Employ at least 50% women in greenery maintenance and landscaping jobs - Ensure well-lit paths around and within the greenway after dark - Provide separate male/female toilets in the greenway	EA/IA, Design Institute, Contractors, Municipal Bus Company, and ACWF
Output 3: Traffic management and urban roads	- Employ at least 20% women in unskilled local road construction jobs at equal pay for work of equal value - Ensure pedestrian walkways along access roads and crossings are accessible and safe - including for people with special needs - and have sufficient roadside lighting - Road safety training and awareness building programs – ensure at least 50% participants are local women	EA/IA, Design Institute, Contractors, and ACWF
Output 4: Institutional Capacity Development	- Recruit gender consultant (s) to support GAP implementation - Appoint a project staff responsible for gender mainstreaming and GAP implementation and reporting. - Provide GAP orientation/training to key EA/IA staff - Provide training for bus drivers and conductors on women's safety needs	EA/IA, Municipal Bus Company

ACWF = All China Women's Federation, BRT = bus rapid transit, EA = executing agency, GAP = gender action plan, IA = implementing agency.

106. Budget and implementation arrangements. Gender specialist consultant support will provide guidance for implementation of the GAP, which will be financed as part of the project budget, and will be implemented over the life of the project. With support from the gender specialist(s), the PMO will be responsible for coordinating implementation of the plan and will assign responsible staff.

107. Monitoring and evaluation. GAP monitoring and evaluation will be incorporated into the overall monitoring and evaluation plan for the project. The gender specialist consultant(s) will work with the PMO and implementing agency staff to orient them on GAP requirements and

develop a detailed implementation and monitoring plan for gender activities. The gender specialist(s) will also provide guidance to drafting first gender plan implementation progress report, and review the subsequent reports prepared by the implementing agencies. Updated information on the status of GAP implementation should be included in all project progress reports. ADB staff with expertise in gender issues will participate in the midterm review.

B. Social Development Action Plan

108. To address various impacts caused by the project and enhance benefits for local affected communities, an SDAP has been prepared jointly by JIDC in coordination with related government agencies, and local governments, with the assistance of the PPTA consultants. The SDAP was reviewed by key stakeholders including various government agencies, such as local labor bureau, social security bureau, health bureau, poverty alleviation office, and local women's association.

109. The purpose of the SDAP is to ensure that (i) important social and poverty issues are addressed during the implementation of the project; (ii) any possible adverse impacts are avoided or mitigated; and (iii) project benefits are equitable and inclusive. Measures formulated to address these issues are based on poverty and social analysis and consultation with stakeholders. JIDC has overall responsibility to ensure that the activities outlined in the SDAP are implemented, monitored and reported. The PMO will be responsible for implementation of SDAP. The SDAP will be internally monitored by the PMO and progress will be reported annually. JIDC shall ensure that the SDAP report data is sex disaggregated.

110. **Other Social Aspects. HIV/AIDS and Other Communicable Diseases.** Project assurances require dissemination of information about HIV/AIDS transmission and prevention to be carried out on construction sites for the employees at time of their mobilization. In addition, the capacity building will be undertaken with respect to advocating behavioral change. JIDC will be responsible that these provisions are included in the award of contract agreements with the contractors.

111. **Labor market impact.** At the construction and operation stages of the three project components, temporary or permanent jobs will be created. It is expected that approximately 4,673 skilled and unskilled jobs will be generated from the civil works during construction; and approximately 1,402 jobs will be generated at the operation stage including traffic wardens, road cleaning and landscaping. JIDC will collaborate with Labor and Social Security Bureau to ensure the contractors employ local labor and target percentages of poor and women. JIDC will ensure that the contractors meet core labor standards as outlined in national, provincial and municipal laws and regulations specified in project assurances. JIDC shall ensure that the principle of 'equal pay for equal standard of work' is implemented and no discrimination is made on the basis of gender and ethnicity. JIDC shall also ensure that no child labor is allowed during implementation and operation of the project. Specific targets for employment have been included in the SDAP.

112. Various activities planned under the SDAP are shown in the Table 16.

Table 16: Social Development Action Plan

Proposed action	Target population	Responsible and assisting agencies	Time	Funding requirement	Monitoring indicators
Measures to Enhance Project Benefits					
A. Design Features:					
1. <u>Non-Motorized Transport Component</u> <ul style="list-style-type: none"> • Along the BRT • Segregated pedestrian footpaths and bicycle lanes, urban roads • NMT in Yudai river rehabilitation 	.	Agencies responsible: EA, IAs Assisting agencies: design agency, local governments, local community contractor	2015-2017	Construction costs of the BRT, Urban Road and River Improvement Components	1. Km of NMT constructed 2. Km of pedestrian footpaths constructed
2. <u>Universally inclusive and Gender sensitive design features</u> <ul style="list-style-type: none"> • Improving bus stop facilities including bus shelters, bus timetable and information display electronic boards, seats in boarding area, easy accessibility with ramps for people with disability, mother with prams, zebra crossing with signage to cross roads to BRT stops, clearly identifiable BRT buses and stops • Providing BRT stations near centers for social services such as hospitals and schools • Barrier free access and pavements (tiles) for visually impaired users • Improved access to the new urban areas - establish bus line and bus stops and BRT feeder bus services for the new residential areas of the project • Ensuring that public transport is affordable to all sections of the society, especially poor and vulnerable. 		EA/ IAs/Design Institute		Project funds for various outputs	1. Number of bus stops with ramps and seating arrangements as per design specifications 2. Number of user friendly safety features (zebra crossing, pedestrian crossing lights) installed 3. Number of timetable and information systems installed 4. Number of bus stops and BRT feeder bus lines established 5. Number of bus stops set up near social service centres. 6. Measures to ensure affordability and number of people covered

Proposed action	Target population	Responsible and assisting agencies	Time	Funding requirement	Monitoring indicators
B. Traffic Safety:					
<ul style="list-style-type: none"> Setting up deceleration strips, speed limit zone, and signs near schools and accident prone areas BRT station safety islands and relief zones Yudai river – public telephone and security alarm kiosks, Ongoing driver training programs Road safety training and awareness to local communities including elderly people, disabled people, women and school-age children; 		<p>Agencies responsible: EA, IAs, traffic police</p> <p>Assisting agencies: design agency, local governments, contractor</p>	2013-2017	Project funds for safety works, and local government finance budgets.	<ol style="list-style-type: none"> No of traffic safety signs, traffic signals and deceleration signs Incidence of traffic accidents— provided by the local traffic police Frequency of community traffic safety awareness publicity and degree of public participation
C. Generating Economic Opportunities					
<ul style="list-style-type: none"> Strengthening skill and training of farmers on techniques on agricultural to promote local economic development; Strengthening Vocational Training program to local labors; Providing training on labor law, contract law and rights to migrant workers; Providing nonagricultural employment information to help local laborers find jobs in nearby enterprises, Priority on using local building materials and resources; using local products and services (e.g., houses, food, drinks and other daily necessities). 	Local residents; especially APs, the poor, vulnerable groups and women	<p>Agencies responsible: local related department such as: , agricultural committee, labor & social security bureau, women's federations,</p> <p>Assisting agencies: IAs contractor, village committees</p>	2015-2018	Local government budget	<ol style="list-style-type: none"> Number of training and skill enhancement programs organized Frequency, forms and men-times of a training Frequency of information dissemination on non-farm employment Purchase of local raw materials from contractor Additional income brought to local people from project construction.
D. Generating Employment Opportunities					
<ul style="list-style-type: none"> Creating jobs opportunities for our 4,600 people during construction 	Local residents; especially APs, the	Agencies responsible:	2013-2017	Project Funds	<ol style="list-style-type: none"> No. of jobs opportunities by the project

Proposed action	Target population	Responsible and assisting agencies	Time	Funding requirement	Monitoring indicators
<ul style="list-style-type: none"> Making 40% of unskilled jobs generated at the construction and operation stages first available to local residents; and Providing 40% or (40% of the total) unskilled jobs to women and poor on the basis of their willingness. 	poor, vulnerable groups and women	local governments Assisting agencies: EA, IAs, agricultural committee, labor & social security bureau, village committees			2. No. of the jobs to local residents 3. No. of the Jobs to women and poor 4. Wages paid to local residents
Measures to Reduce Potential Risks					
A. Health publicity and training, including HIV/AIDS prevention training for workers and trainees at the construction stage					
<ul style="list-style-type: none"> Including AIDS prevention training in the civil works contract as a construction safety requirement; CDCs to educate local residents and construction workers on the self-protection awareness against AIDS; Conducting diversity publicity activities on AIDS/ and other communicable diseases, e.g., brochures, posters and picture albums (using a gender-aware language). 	All construction workers	Agencies responsible: IAs, local sanitation agencies Assisting agencies: contractor, local governments	2013-2017	Funds under the construction contract; Budget of the CDC (CNYyear per subproject area)	1. Terms of construction contract and implementation 2. 3. AIDS prevention training courses and number of trainees amongst workers 4. Number of educational/awareness building sessions organized by the CDCs 5. Frequency and forms of health education, and protective measures available to construction workers 6.
B. Mitigating construction interference and applying safe construction methods					
<ul style="list-style-type: none"> Controlling dust to avoid pollution, restricting overnight construction, and complying with noise, dust and vibration standards strictly; Strengthening construction safety, and providing safe roads/channel conditions, and suitable warning signs; and Avoiding damages to public water supply, power supply, drainage and 		Agencies responsible: EA Assisting agencies: contractor, environmental protection bureau, local governments	2013-2017	Project funds (Environmental Management Plan)	1. Number of complaints on environmental pollution at the construction stage (including dust and noise) and disposition 2. Number of announcements and warning signs installed during construction 3. Number of damaged public facilities repaired timely

Proposed action	Target population	Responsible and assisting agencies	Time	Funding requirement	Monitoring indicators
irrigation facilities.					
C. Pubic Consultations and GRM					
1. <u>Consultation and public participation</u> <ul style="list-style-type: none"> Informing and consulting with the local population on project impacts and benefits (at least 50% participants to be women and poor and vulnerable Status and progress of civil works including possible construction related interruptions and disturbances; Road safety awareness; and Economic benefits–employment and income generation opportunities. 2. <u>Establishing a grievance redress mechanism</u> <ul style="list-style-type: none"> Establishing a grievance redress mechanism in the project area, handling appeals from APs, and keeping appeal and remedy records. 	Local residents	Agencies responsible: EA, IAs, local governments Assisting agencies: PMO, labor & social security bureau, land & resources bureau	2013-2016	Routine management funds of agencies concerned (CNY50,000/year)	1. Number of such consultation held and degree of public participation desegregated by gender, poor and vulnerable 2. Number of complaints received and disposition (relevant records)

BRT = bus rapid transit; CDC = community development council; EA = executing agency; GRM = grievance redress mechanism; IA = implementing agency; km = kilometer; PMO = project management office.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

Table 17: Project Design and Monitoring Framework

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Impact An efficient, inclusive, and sustainable urban transport system in Ji'an	The share of public transport in total increased to 45% in 2025 (2013 baseline: 34%) Percentage of railway passengers using buses increased to 40% by 2025 (2011 baseline: 38%) Average concentration of nitrogen dioxide in Ji'an unchanged until 2025 (2013 baseline: 0.029-0.032 mg/m ³)	Bus operator annual statistics, model forecasts Bus operator annual statistics, rail passenger survey Annual report of the Ji'an Environmental Protection Bureau	Assumptions The Ji'an Urban Master Plan, 2008–2020 implemented Strong government commitment to public transport and ongoing provision of subsidies Bus services increase with population and economic growth BRT construction and railway square improvement completed on time
Outcome Efficient multimodal access to major activity centers in Ji'an.	Average bus speeds on BRT corridor increased to 26 km/hour by 2018 (2012 baseline: 16 km/hour) Average age of the bus fleet reduced to 6 years by 2020 (2013 baseline: 8 years) Transfer time between bus terminal and railway station platform reduced to less than 5 minutes by 2020 (2013 baseline: 7 minutes) Flood frequency reduced to once in 20 years (2013 baseline: every year)	BRT operator annual statistics Bus company reports Survey Annual report of the Ji'an Environmental Protection Bureau	Assumptions Project components properly maintained. Bus operations procedures followed. Traffic rules enforced.
Outputs 1. Public transport improved	BRT system BRT system operating by 2018 Lighting, security cameras, and help buttons installed in all BRT stations and vehicles Priority seating for people with special needs (pregnant women, parents with young children in prams, the elderly, people with disabilities) in all BRT buses and stations Women comprise at least 20% of drivers, and 50% of employees for ticketing, fare collection, and administration Station square New bus and taxi terminals and support facilities constructed by mid-2016 Barrier-free user environment is implemented	Project progress reports GAP and SDAP reports	Assumptions Timely provision of counterpart funds Continued political support for BRT implementation Risks International commodity prices increasing significantly

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
2. Yudai River and greenway rehabilitated	<p>Yudai River greenway and embankment constructed by mid 2017</p> <p>Landscaping, paths for non-motorized transport, and other facilities constructed by mid 2019</p> <p>Women fill 50% of the greenery maintenance and landscaping jobs (2014 baseline: 25%)</p>	<p>Project progress reports</p> <p>GAP and SDAP reports</p>	
3. Traffic management and urban roads developed	<p>19.32 km of urban roads and related infrastructure constructed by mid 2020</p> <p>Coordinated traffic signals in operation by 2019</p> <p>BRT priority operation is installed by 2017</p>	<p>Project progress reports</p> <p>GAP and SDAP reports</p>	
4. Institutional capacity developed	<p>EA and IA trained on project management, PPMS, procurement, disbursement, safeguards, and gender requirements</p> <p>EA and bus company trained on traffic management, road safety, and BRT operation and management</p> <p>BRT drivers and conductors trained on women's safety needs</p> <p>Hybrid bus performance monitored and evaluated by 2019</p> <p>Integrated transport/land use plan prepared by 2017</p>	<p>Project progress reports</p> <p>GAP and SDAP reports</p>	
Activities with Milestones		Inputs	
<p>1. Public transport improved</p> <p>1.1 Construct BRT route, station, terminal, and parking area by Q1 2018.</p> <p>1.2 Implement BRT traffic engineering work by Q1 2018.</p> <p>1.3 Install BRT station ticketing system and operating system by Q4 2017.</p> <p>1.4 Purchase BRT buses and put in operation by the end of 2017.</p> <p>1.5 Purchase hybrid electric buses and put into operation by 2017.</p> <p>1.6 Purchase bus maintenance equipment by the end of 2017.</p> <p>1.7 Finish civil works by Q1 2018.</p> <p>1.8 Install elevators and other facilities by Q4 2017.</p> <p>2. Yudai River and greenway rehabilitated</p> <p>2.1 Complete flood control and water embankment work by mid-2019.</p> <p>2.2 Complete landscape work by mid-2019.</p> <p>2.3 The JMG completes land acquisition and resettlement by Q2 2016.</p> <p>3. Traffic management and urban roads developed</p> <p>3.1 Construct Junhua road by mid-2019.</p> <p>3.2 Construct Yangming west road by Q4 2017.</p>		<p>Loan ADB: \$120.0 million</p> <p>Government: \$167.1 million</p> <p>Grant Global Environment Facility: \$2.5 million</p>	

<p>Activities with Milestones</p> <p>3.3 Construct Bo'an road by Q1 2019.</p> <p>3.4 Construct Shaoshan road by Q4 2017.</p> <p>3.5 Construct Zhongshan road by Q4 2017.</p> <p>3.6 The JMG completes land acquisition and resettlement by Q3 2015.</p> <p>3.7 Install traffic signals and control center by Q4 2017.</p> <p>3.8 Install intelligent transport system and traffic information systems by Q1 2018.</p> <p>3.9 Construct pedestrian safety facilities by Q1 2018.</p> <p>3.10 Apply BRT priority operation by Q1 2018.</p> <p>4. Institutional capacity developed</p> <p>4.1 Recruit individual consultants and international consulting firm by mid-2015.</p> <p>4.2 Train the JMG, implementing agency, and project management office on project management, PPMS, procurement, disbursement, safeguards, and gender requirements by mid-2015.</p> <p>4.3 Train agencies in Ji'an on traffic management, road safety, and BRT operation and management by the end of 2016.</p> <p>4.4 Train BRT bus drivers and conductors on women's safety needs by the end of 2016.</p> <p>4.5 Supervise implementation of the resettlement plan, environmental management plan, gender action plan, and social development action plan from Q1 2015.</p> <p>4.6 Conduct evaluation and monitoring of hybrid electric bus performance in BRT operation and submit report by end of 2019.</p> <p>4.7 Conduct training on planning principles and develop an integrated transport and land-use development plan for Ji'an by the end of 2017.</p>	
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ADB = Asian Development Bank, BRT = bus rapid transit, GAP = gender action plan, JMG = Ji'an Municipal Government, km = kilometer, mg/m³ = milligram per cubic meter; PPMS = project performance monitoring system, Q = quarter, SDAP = social development action plan.

Source: Asian Development Bank.

A. Monitoring and Project Management

113. The project performance monitoring system (PPMS) indicators, their relevance, and monitoring practicalities were discussed with the IA and other project implementing agencies during project preparation. The impact indicators, as specified in the design and monitoring framework, will include: (i) GDP growth, (ii) per capita income, (iii) urbanization rate, (iv) regional trade, (v) avoided loss of life and property damage from river flooding, and (vi) improvement in environmental quality.

114. At the commencement of project implementation, the PMO, with support from the project implementation consultant, will develop comprehensive PPMS procedures to generate data systematically on the project outcome, inputs, and outputs of each component, as well as the agreed employment indicators, environmental monitoring indicators, and RP implementation indicators. This data will be used to measure the project impact, outcome, output, and compliance with ADB safeguard policy requirements. The PMO will: (i) refine the PPMS framework, (ii) establish the baseline, (iii) confirm achievable targets, (iv) finalize the monitoring and recording arrangements, and (v) establish data collection systems and reporting procedures no later than six months after loan effectiveness.

115. **Compliance monitoring.** The compliance status of loan and project covenants will be reported and assessed through the semi-annual progress reports and verified by ADB review missions.

116. **Safeguards monitoring reports.** IA must submit semi-annual Environmental Monitoring Reports to ADB. Reports will be disclosed on ADB website upon receipt in accordance with ADB Public Communication Policy Disclosure and Exchange of Information (2011). If any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the project that were not considered in the EIA and the EMP, the IA will promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan. Guidance on the content and format of the semi-annual environmental monitoring report is provided in Appendix 2.

117. The IA, JIDC, will hire a qualified and experienced external expert under a selection process and TOR acceptable to ADB, to verify the monitoring information in the report. The environmental verifier will visit the site to ensure the EMP implementation. The Environment Verifier's report including the review activity outline, review results, and its recommendations will be attached to the semi-annual environment report for submission to ADB.

118. The IA, JIDC, will hire a qualified and experienced external expert under a selection process and TOR acceptable to ADB, to monitor the implementation of the RP. The monitor will use a mix of methods such as review of records and internal monitoring reports of the IA, interviews with the IA officials responsible for RP implementation, site visits, and consultations with the APs. The external monitoring report including recommendations will be submitted to the ADB semi-annually.

119. **Gender and social dimensions monitoring.** GAP and SDAP M&E will be incorporated into the overall M&E plan for the project. The gender specialist consultant(s) will work with the PMO and IA staff to orient them on GAP and SDAP requirements and develop a detailed implementation and monitoring plan for gender activities. The PMO will assign a staff member gender focal point to be responsible for gender mainstreaming, and GAP implementation and reporting. The gender specialist consultant(s) will provide guidance to this staff gender focal point for drafting of the first project gender plan implementation progress report, and review the subsequent reports. Updated information on the status of GAP implementation should be included in all project progress reports. ADB staff with expertise in gender and social issues will participate in the midterm review.

B. Evaluation

120. In addition to regular monitoring, project performance will be reviewed at least once a year jointly by ADB, the government, and JMG. The review will assess implementation performance and achievement of project outcomes and outputs, assess financial progress, identify issues and constraints affecting implementation, and work out a time-bound action plan for their resolution. ADB, the government, and JMG will conduct a midterm review to assess implementation status and take appropriate measures and the continuing viability of the project. Within 3 months of physical completion of the project, the JMG will submit a project completion report to ADB.

C. Reporting

121. The EA will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for next 12 months; (iii) semi-annual reports on environmental,

resettlement, and GAP monitoring; and (iv) a project completion report within 6 months of physical completion of the project. To ensure projects continue to be both viable and sustainable, project accounts and the EA audited financial statements, together with the associated auditor's report, should be adequately reviewed.

122. The agreed reporting schedule is as follows:

Quarterly Progress Reports	First Report Due _____ (4 per year)
Environmental Monitoring	First Report Due _____ (2 per year)
Resettlement Monitoring	First Report Due _____ (2 per year)
GAP and SDAP Monitoring	First Report Due _____ (2 per year)

123. Quarterly progress reports will be submitted on the following schedule during project implementation:

1. January 1
2. April 1
3. July 1
4. October 1

124. Bi-annual Monitoring Reports for Environment, Resettlement, and Gender will be submitted on the following schedule during project implementation:

1. July 1
2. January 1

Table 18: Reporting Plan

Reports		From	To	Frequency of Reporting
Construction Phase				
Internal monitoring and inspection	Internal monitoring reports by construction contractors	Contractors	IAs	Monthly
Monthly internal monitoring reports by IAs		IA	PMO Local EPB	Monthly
Semi-annual internal environmental monitoring and inspection reports based on the monthly reports		Supervision Consultant	PMO	Twice a year
External environmental quality monitoring	External environmental quality monitoring reports	EMC on behalf of local EPB (funded by IA)	Local EPB PMO	Monthly Record Quarterly Report
Semi-annual environment monitoring reports	Semi-annual environment monitoring reports consolidating all the internal and external reports	PMO, IEV	ADB	Twice a year
EMP compliance verification	Verification Reports of EMP compliance	IEV	ADB, PMO, IAs	Twice a year
Internal resettlement monitoring report	Resettlement progress by the IA as part of the project progress report.	EA/IA	ADB	Quarterly
Semi-annual external resettlement monitoring report	Independent resettlement monitoring and review of resettlement progress report of IA	EM	ADB	Semi-annual
Resettlement completion report	Consolidated review of all the external monitoring reports	EA/IA	ADB	On resettlement

Reports		From	To	Frequency of Reporting
Construction Phase				
	and EA/IA views on resettlement implementation			completion
Progress of social development action plan and gender action plan	Progress of implementation of the SDAP and GAP	EA/IA/Consultant	ADB	Semi-annual
Acceptance Monitoring Report	Environmental acceptance monitoring and audit report	Licensed Institute	Local EPB	Once
Post-Completion				
Annual external resettlement evaluation report	Evaluation of project impacts and outcomes	EM	ADB	Annual (For two years following the completion of LAR activities)
Project completion report	Evaluation of project impacts and outcomes	PMO	ADB	Following completion of physical works

ADB = Asian Development Bank, IEV = independent environmental verifier, EM = External Monitor, EMC = Environmental Monitoring Centers, EMP = environmental management plan, EPB = Environment Protection Bureau, IA = implementing agency, PMO = Project Management Office.

D. Stakeholder Communication Strategy

125. The PMO with support of supervision consultants will undertake consultations with key stakeholders. Communication with stakeholders will be managed by the PMO social and environmental monitoring specialists.

126. Project information will be communicated through public consultation, information disclosure mechanism in ADB's and government's website, meetings, interviews, focus group discussions, and community consultation meetings, in accordance with ADB's requirements of information disclosure policy.

127. Meaningful consultation has been conducted during the feasibility study and environmental impact assessment in accordance with the PRC Interim Guideline on Public Consultation in EIA (2006) and ADB's Safeguard Policy Statement (2009), and preparation of the RP (2013–2014). During construction, the affected people will be consulted through formal and resettlement surveys and informal interviews by the environmental management unit and/or the external environmental monitor. The local environmental protection bureau and ADB shall disclose the project's environmental information, as follows: (i) the project EIA is disclosed at www.adb.org; (ii) the domestic Chinese EIAs are disclosed on the website of JMG; and (iii) the semiannual EMP progress and monitoring reports, as well as the annual EMP verification reports, will be disclosed at www.adb.org. The RP has been disclosed on the ADB website. It has also been disclosed to the affected people and on the JMG website. Semi-annual monitoring reports on RP implementation will be disclosed to the affected people and on the ADB website. JIDC will establish the grievance redress mechanism and procedures in accordance with the proposed project grievance redress mechanism to address environment and social issues associated with the project. Consultations will also be undertaken under the GAP that will target the women participants.

128. Public disclosure of all project documents will be undertaken by JMG and JIDC and on ADB website including the project data sheet, design and monitoring framework, consolidated EIA, RP, and the RRP. Disclosure of social and environmental monitoring reports will be undertaken during project implementation.

X. ANTICORRUPTION POLICY

129. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.¹⁸ All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the EA and all project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.¹⁹

130. To support these efforts, relevant provisions are included in the loan agreement and the bidding documents for the project. The ADB's Anticorruption Policy (2000, as amended to date) was explained to and discussed with the EA and IA. Consistent with its commitment to good governance, accountability and transparency, ADB reserves the right to investigate directly any alleged corrupt, fraudulent, collusive, or coercive practices relating to the project. In particular, all contracts financed by ADB in connection with the project shall include provisions specifying the right of ADB to audit and examine the records and accounts of the EA and IA, and all contractors, suppliers, consultants, and other service providers related to the project.

¹⁸ Available at: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>.

¹⁹ ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>.

XI. ACCOUNTABILITY MECHANISM

131. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.²⁰

²⁰ For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>.

XII. RECORD OF PAM CHANGES


132. All revisions/updates during course of implementation should be retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the project administration manual.

No.	PAM Changes/Updates	Dates	Notes
1	Initial draft	23 April 2014	Agreed at loan fact finding mission
2	Agreed draft		Agreed at loan negotiations
3	Revised		Inception Mission

Updated and confirmed by:



Mr. Li Zhigui
Director, Project Management Office
Ji'an Investment and Development Company, Ltd.
Ji'an Municipal Government
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Mr. Steven P. Lewis-Workman
Senior Transport Economist
East Asia Department
Asian Development Bank

ENVIRONMENTAL MANAGEMENT PLAN

1. This Environmental Management Plan (EMP) is developed for the Jiangxi Ji'an Sustainable Urban Transport Project (the project). It identifies the potential project environmental impacts and defines mitigation measures and monitoring requirements for the design, construction, and operational stages of the project. It also defines the institutional arrangements and mechanisms, the roles and responsibilities of different institutions, procedures and budgets for implementation of the EMP. The EMP seeks to ensure environmental protection activities during preconstruction, construction, and operation continuously improve in order to prevent, reduce, or mitigate adverse environmental impacts and risks. The EMP draws on the findings of the project EIA, the domestic Environmental Impact Reports (EIR), Soil and Water Conservation Plan (SWCP), the Project Preparation Technical Assistance (PPTA) reports, and discussions and agreements with relevant government agencies and the Asian Development Bank (ADB).

2. This EMP is based on proposed project designs as of December 2013. Detailed engineering designs are yet to be finalized and may require subsequent impact assessment and/or revisions to this EMP. The Ji'an Municipal Government (JMG) will provide the detailed designs to ADB for review to determine if the EMP requires revision. The final EMP will be disclosed on the ADB public website (www.adb.org) and included in the Project Administration Manual (PAM). The final EMP will also be included as a separate annex in all bidding and contract documents. The contractors will be informed of their obligations to implement the EMP, and to include EMP implementation costs in their bids for project works.

3. The EMP includes an environmental monitoring program. The monitoring results will be used to evaluate (i) the extent and severity of actual environmental impacts against the predicted impacts, (ii) the performance of the environmental protection measures and compliance with relevant laws and regulations, (iii) trends of impacts, and (iv) overall effectiveness of the project EMP.

A. Institutional arrangements and responsibilities for EMP implementation

4. As Executing Agency (EA), the Ji'an Municipal Government (JMG) will be responsible for the overall implementation and compliance with loan assurances and the EMP (including Environmental Monitoring Plan).

5. **Ji'an Project Leading Group (JPLG).** The JPLG has been established for the project comprising of senior officials from relevant government agencies, to facilitate inter-agency coordination, and to resolve any institutional problems affecting project implementation at a municipal level.

6. The EA has established the **Ji'an Project Management Office (JPMO)**, who will be responsible, on behalf of the EA, for the day-to-day management of the project. The JPMO will have the overall responsibility to supervise the implementation of environment mitigation and monitoring measures, coordinate the project level Grievance Redress Mechanism (GRM) and report to ADB. JPMO will (i) appoint at least one environmental specialist on its staff to coordinate and manage EMP implementation, (ii) contract the Ji'an Environmental Monitoring Station (JEMS) to conduct environmental impact monitoring during the construction stage,

(iii) engage the loan implementation consultants (LIC) services, (iv) contract an external Environmental Supervision Engineer (ESE) to conduct independent verification of EMP implementation and environmental impact monitoring results during the construction and operational stages of the project, and (v) supervise the procurement process. The JPMO environmental specialist will (i) supervise contractors and their compliance with the EMP; (ii) conduct regular site inspections; (iii) act as local entry point for the project GRM; (iv) submit environmental impact monitoring results provided by the JEMS to the JPMO and JEPB for verification and confirmation. JPMO will prepare quarterly project progress reports and semi-annual environment monitoring reports and submit them to ADB.

7. **Implementing Agency (IA).** The Ji'an Urban Investment and Development Company, Ltd. (JIDC) (JMUCIDC) will be the IA for the project. It will hire the technical engineering design institutes (DI), implement project components, administer and monitor contractors and suppliers, and be responsible for construction supervision and quality control. To ensure that the contractors comply with the EMP provisions, JMUCIDC with the help and technical support of a Tendering Agent and the Loan Implementation Environmental Consultant (LIEC) under the LIC services, will prepare and provide the following specification clauses for incorporation into the bidding procedures: (i) a list of environmental management and monitoring requirements to be budgeted by the bidders in their proposals; (ii) environmental clauses for contractual terms and conditions; and (iii) major items in the EIA, and the full EMP.

8. **Construction contractors** will be responsible for implementing the mitigation measures during construction under the supervision of JMUCIDC (through the ESE) and JPMO. In their bids, contractors will be required to respond to the environmental management and monitoring requirements defined in the EMP. Each contractor will be required to develop site specific EMPs and will assign a person responsible for environment, health and safety. After project completion, environmental management responsibilities will be handed over to O&M units.

9. **O&M Units.** During the operational phase, JMUCIDC and the JEPB will periodically verify and monitor (through a licensed monitoring entity) the environmental management and implementation of mitigation measures by the operators (O&M Units) of the project components. The cost of mitigation measures in this phase will be borne by the relevant O&M Units.

10. **Loan Implementation Environmental Consultant (LIEC).** Under the loan implementation consultancy (LIC) services, a LIEC will support the project. Terms of reference for this external environmental monitoring consultant is provided in the Project Administration Manual. The LIEC will be contracted by the JPMO, and will:

- assess the project components' environmental readiness prior to implementation based on the readiness indicators defined in Table EMP-3 in the EMP;
- support JPMO in updating the EMP including monitoring plan as necessary to revise or incorporate additional environmental mitigation and monitoring measures, budget, institutional arrangements, etc., that may be required based on the detailed design; submit to ADB for approval and disclosure; ensure compliance with the PRC's environmental laws and regulations, ADB's Safeguard Policy Statement (2009) and Public Communications Policy (2011);
- if required, update the EIA and EMP reports for changes in the project during detailed design or project implementation (for example if there is a minor or major scope change) that would result in adverse environmental impacts not within the scope of the approved EIA/EMP;

- assist the JMG and JPMO to establish a Grievance Redress Mechanism (GRM), and provide training for the JPMO and GRM access points (including, but not limited to, JMUCIDC and contractors);
- conduct regular EMP compliance assessments, undertake site visits as required, identify any environment-related implementation issues, and propose and oversee implementation of necessary corrective actions;
- assist the JPMO to prepare semi-annual environmental monitoring and progress reports to ADB;
- provide training to JPMO, JMUCIDC, O&M units and contractors on environmental laws, regulations and policies, SPS 2009, EMP implementation, and GRM in accordance with the training plan defined in the EMP (Table EMP-7); and
- assist the JPMO and JMUCIDC in conducting consultation meetings with relevant stakeholders as required, informing them of imminent construction works, updating them on the latest project development activities, GRM.

11. **Environmental Supervision Engineer (ESE).** The environment performance of the project will be verified by an independent ESE, to be contracted by JPMO. The ESE will review EMP implementation and monitoring activities and results, assess EMP implementation performance, visit the project sites and consult potentially affected people, discuss assessment with the JPMO and JMUCIDC; and suggest corrective actions. The ESE will prepare monthly reports for submission to JPMO which will be reviewed by the JPMO during the preparation of the quarterly project progress reports for ADB and by the LIEC during the preparation of the semi-annual environment monitoring reports for ADB.

12. Overall environmental responsibilities are outlined in Table EMP-1.

Table EMP-1: Environmental responsibilities

Phase	Responsible Agency	Environmental Responsibility
Project preparation	Design Institutes on behalf of JPMO	<ul style="list-style-type: none"> • Prepare feasibility study reports (FSR), environmental impact report (EIR), soil and water conservation report (SWCR), resettlement plan (RP)
	JPMO	<ul style="list-style-type: none"> • Review the FSRs, EIRs, SWCR and RP. • Engage a staff environmental specialist
	JEPB	<ul style="list-style-type: none"> • Review and approve the EIR
	JPWRB	<ul style="list-style-type: none"> • Review and approve the SWCR
	PPTA consultant	<ul style="list-style-type: none"> • Provide technical assistance • Review domestic EIR • Conduct environmental due diligence • Prepare project environmental impact assessment (EIA) report and environmental management plan (EMP)
	ADB	<ul style="list-style-type: none"> • Review and approve the EIA and EMP and disclose
Detailed design	Design Institutes on behalf of JPMO	<ul style="list-style-type: none"> • Incorporate mitigation measures defined in the EMP into engineering detailed designs
	JPMO	<ul style="list-style-type: none"> • Review mitigation measures defined in the EMP, update where necessary based on detailed design • Engage the independent Environmental Supervision Engineer (ESE). • Engage the Loan Implementation Environmental Consultant (LIEC) under the Loan Implementation Consulting Services
	ESE and LIEC	<ul style="list-style-type: none"> • Review detailed design to ensure inclusion of relevant mitigation measures

Phase	Responsible Agency	Environmental Responsibility
Tendering, contracting and pre-construction		<ul style="list-style-type: none"> Assist JPMO in updating the EMP where necessary
	ADB	<ul style="list-style-type: none"> Approve updated EMP and disclose
	JPMO	<ul style="list-style-type: none"> Incorporate EMP clauses into tender documents Commission JEMS for internal environmental quality monitoring during the construction phase Establish the project grievance redress mechanism with a complaint center and hotline
	ESE	<ul style="list-style-type: none"> Review tender documents to ensure inclusion of EMP clauses Review contractor's method statements on implementation of mitigation measures
	LIEC	<ul style="list-style-type: none"> Review tender documents to ensure inclusion of EMP clauses Conduct training for the staff from JPMO, IA, O&M units and contractors on environmental management, environmental monitoring and EMP implementation
	Contractors	<ul style="list-style-type: none"> Prepare and submit tenders for the construction contracts, to include staffing and costs for environmental management to comply with the EMP Prepare method statements on implementation of mitigation measures
Construction	ADB	<ul style="list-style-type: none"> Review bid documents and confirm project's readiness
	IA	<ul style="list-style-type: none"> Develop project management procedures, implementation plan, and financial management Approve contractor's method statements on implementation of mitigation measures Undertake day-to-day project and EMP implementation activities for all infrastructure components Administer and monitor the contractors and suppliers Supervise EMP implementation to ensure compliance by contractors
	JPMO	<ul style="list-style-type: none"> Coordinate with all involved agencies, departments, and institutes for project implementation Coordinate the project level grievance redress mechanism Conduct public consultations as indicated in the EMP Supervise EMP implementation Prepare project documents and report to JMG, JPLG and ADB Submit withdrawal applications and supporting documents to ADB Submit project implementation progress reports and safeguards monitoring reports to ADB Submit all procurement and disbursement documents to ADB for necessary approval Disclose project-related information and documents in accordance with ADB guidelines
	JEMS	<ul style="list-style-type: none"> Conduct internal environmental quality monitoring in accordance with the EMP Recommend additional environmental quality monitoring when needed Prepare and submit monitoring results to JPMO, IA and JEPB monthly
	ESE	<ul style="list-style-type: none"> Conduct external compliance monitoring of EMP implementation Review internal environmental quality monitoring data collected by JEMS

Phase	Responsible Agency	Environmental Responsibility
		<ul style="list-style-type: none"> ● Prepare monthly environmental monitoring reports ● Advise on mitigation measures when needed ● Assist JPMO and IA in preparing monthly and quarterly project progress reports ● Support LIEC with preparation of semi-annual environmental monitoring reports
	LIEC	<ul style="list-style-type: none"> ● Conduct compliance monitoring of EMP implementation ● Assist JPMO in preparing semi-annual environmental monitoring reports for submission to ADB ● Prepare environmental completion report for ADB
	JEPB	<ul style="list-style-type: none"> ● Conduct periodic and random inspections of all construction projects relative to compliance with PRC regulations and standards
	ADB	<ul style="list-style-type: none"> ● Review semi-annual environmental monitoring reports ● Undertake review missions
Operation	O&M units	<ul style="list-style-type: none"> ● Operate and maintain the project facilities ● Engage JEMS in conducting environmental quality monitoring during the operational phase
	IA	<ul style="list-style-type: none"> ● Coordinate and supervise EMP implementation
	JEMS	<ul style="list-style-type: none"> ● Conduct internal environmental monitoring for the first year of operation according to the EMP
	ADB	<ul style="list-style-type: none"> ● Conduct project completion review
Notes: ADB = Asian Development Bank; ESE = environmental supervision engineer; IA = Implementing Agency; JEMS = Ji'an Environmental Monitoring Station; JEPB = Ji'an Environmental Protection Bureau; JPMO = Ji'an Project Management Office; JPWRB = Jiangxi Provincial Water Resource Bureau; LIEC = loan implementation environmental consultant; O&M = operation and maintenance; PPTA = project preparation technical assistance		

B. Summary of potential impacts and mitigation measures

13. Potential environmental issues and impacts during the pre-construction, construction and operation phases, and corresponding mitigation measures, are summarized in Table EMP-2. These include two types of mitigation measures:

- (i) Measures that will permanently become part of the infrastructure such as landscape planting, road signage and markings should be included within the main civil work contract costs, and are not double-counted as part of the EMP costs. The only exception for this project is \$247,000 for the provision of traffic noise mitigation measures consisting of planting woodland buffers and installing regular and ventilated double glazed windows.
- (ii) Temporary measures during the construction stage (e.g. dust suppression by watering, use of quiet / low noise powered mechanical equipment, flocculants used to facilitate sedimentation of suspended solids in construction site runoff, etc) will need to be included in the tender documents to ensure that contractors include in their budgets.

14. The mitigation measures defined in the EMP will be (i) checked and where necessary re-designed by the design institutes and the EMP subsequently updated; (ii) incorporated into tender documents (where appropriate), construction contracts, and operational management plans; and (iii) implemented by contractors and IAs under supervision of JPMO. The effectiveness of these measures will be evaluated based on the results of the environmental

impact monitoring conducted by JEMS, and through EMP compliance verification conducted by the ESE and LIEC.

Table EMP-2: Summary of Potential Impacts and Mitigation Measures

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
Detailed Design Stage						
Conservation of natural resources	Soil resources	Loss of land and topsoil and increased risk of erosion	<ul style="list-style-type: none"> Minimize permanent and temporary land take for development. Retain/incorporate landscape features of interest in design. Optimize balance between cut and fill and avoid deep cuts and high embankments to minimize earthworks. Maximize reuse of spoil within the construction or adjacent construction works. Agree spoil disposal sites, management and rehabilitation plan with local Environment Protection Bureau and the Cityscape Department Remove and store topsoil (10-30cm) for restoration works prior to main earthworks. Specify vegetation that serves specific bioengineering functions. Design appropriate drainage systems for slopes to reduce soil erosion. 	Design Institute	JPMO	Included in design contract
	Materials	Efficient use of resources	<ul style="list-style-type: none"> Specify energy efficient lighting and cooling/heating systems. Specify materials that are recycled, have recycled content or are from sustainable sources, particularly for street furniture and fixtures/fittings. Specify the use of renewable energy (such as photovoltaic panels) for stations, signs, lighting, where appropriate. Specify grey water collection and water conservation, where possible Maximize the use of natural lighting and ventilation in BRT station design 			
Design of road alignment, road surface, drainage, flood control and lighting	Extreme weather event due to climate change	Landslide and flooding due to torrential rainfall	<ul style="list-style-type: none"> Consider potential impacts from extreme weather events due to climate change in designing road subgrade, pavement, road-side slopes, drainage system, bridges and culverts. Adopt appropriate protective measures such as vegetation cover, geotextiles, settling basins, permeable paving, infiltration ditches, stepped slopes, riprap, crib walls, retaining walls and intercepting ditches to reduce the speed of surface run- 	Design Institute	JPMO	Included in design contract

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<ul style="list-style-type: none"> off. Take account of recommendations made in Climate Risk and Vulnerability Analysis study to adopt the high emissions scenario climate change projections as the basis of design for drainage components that would be difficult to replace or repair. 			
		Flood control capacity of Yudai River	<ul style="list-style-type: none"> Consider potential impacts from extreme storm events due to climate change in designing the flood control capacity of Yudai River. Take account of recommendation made in Climate Risk and Vulnerability Analysis study to increase urban drainage capacity and consider the need for a flood water pumping station. 	Design Institute	JPMO	Included in design contract
	Ecology	Loss of camphor trees (under national Class II protection) (see Figure IV.5 in the EIA report)	<ul style="list-style-type: none"> Technical design of the urban road alignments will avoid the removal of these trees as the primary objective. If avoidance is not possible, design replanting schemes for these trees. 	Design Institute	JPMO	Included in design contract
	Physical cultural resource	Preservation of old camphor trees (see Table IV.19 in the EIA report)	<ul style="list-style-type: none"> Technical design of the urban road alignments <u>MUST</u> avoid all locations with old camphor trees as shown in Table IV.9 in the EIA report. 	Design Institute	JPMO	Included in design contract
	Health and safety	Promotion of non-motorized transport, protection of vulnerable road users	<ul style="list-style-type: none"> Design must ensure public health and safety. Promote non-motorized traffic. Ensure barrier-free design for disabled people. 	Design Institute	JPMO	Included in design contract
	Air emissions	Construction transport emissions	<ul style="list-style-type: none"> Specify local materials from licensed providers that minimise transport distance. 	Design Institute	JPMO	Included in design contract
	Noise	Road traffic noise	<ul style="list-style-type: none"> Technical design of urban roads will include the planting of road-side woodland buffer for noise mitigation as indicated in the project Environmental Impact Report and Tables V.8 and V.11 in the EIA report 	Design Institute	JPMO	Included in design contract
	Water quality	Polluted run-off into Yudai River	<ul style="list-style-type: none"> Technical design of urban road drainage to ensure that drainage design and discharge locations minimise risk of pollution of Yudai River. Need for pollution interceptors and treatment should be considered. 	Design Institute	JPMO	Included in design contract

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
Design of Riverside Park	Ecology	Loss of natural habitats	<ul style="list-style-type: none"> Retain and incorporate natural habitat features and create new habitats that incorporate requirements of species of conservation value that have been identified in project area of influence. Ecologist to review and provide specialist inputs into the design of the riverside park. Adopt soft engineered bankside protection methods where possible. Specify species that are in keeping with local environment and are of local provenance. 	Design Institute	JPMO	Included in design contract
	Water quality and waste management	Dumping of waste and run-off	<ul style="list-style-type: none"> Ensure adequate provision of waste management facilities away from the river that provide options for waste segregation, recycling and reuse. Segregate green waste (vegetation waste from park maintenance) from general refuse for composting. Provide drainage for car park and other areas of hard standing and ensure that attenuation and discharge points are appropriate. 	Design Institute	JPMO	Included in design contract
Pre-construction Stage						
Institutional strengthening	-	Lack of environmental management capacities within JPMO, JMUCIDC and O&M units	<ul style="list-style-type: none"> Appoint qualified environment specialist on staff within the JPMO Contract loan implementation environment consultant (LIEC) within loan administration consultant services; Conduct environment management training. 	JPMO	ADB	JMG
	-	Lack of environmental monitoring capability and qualification	Contract Ji'an Environmental Monitoring Station (JEMS) to conduct project impact monitoring during construction.	JPMO	ADB	JPMO
			Contract JEMS to conduct project impact monitoring during the operational stage.	O&M units	JPMO	O&M units
EMP Update	-	-	Review mitigation measures defined in this EMP, update as required to reflect detailed design, disclose updated EMP on project website.	JPMO, LIEC	ADB	JPMO, Loan implementation TA
Tender documents	Air quality	Dust (TSP) impact to sensitive receptors	Put into tender documents dust suppression measures: <ul style="list-style-type: none"> Provide dust masks to operating personnel; Spray water regularly on hauling and access roads to borrow pits (at least once a day) to suppress dust; and erect hoarding around dusty activities; Minimize the storage time of construction 	Design Institute	JPMO; LIEC	Included in tendering agency contract

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<p>and demolition wastes on site by regularly removing them off site;</p> <ul style="list-style-type: none"> ● Equip asphalt, hot mix and batching plants with fabric filters and/or wet scrubbers to reduce the level of dust emissions. Additionally, site asphalt mixing stations at least 300 meters downwind of the nearest residential household; ● Mount protective canvasses on all trucks which transport material that could generate dust; ● Build access and hauling roads at sufficient distances from residential areas, particular, from local schools and hospitals; ● Assign haulage routes and schedules to avoid transport occurring in the central areas, traffic intensive areas or residential areas. For the areas with high-demand on environmental quality, transport should be arranged at night. ● Keep construction vehicles and machinery in good working order, regularly service and turn off engines when not in use; ● Vehicles with an open load-carrying case, which transport potentially dust-producing materials, shall have proper fitting sides and tail boards. Dust-prone materials shall not be loaded to a level higher than the side and tail boards, and shall always be covered with a strong tarpaulin; ● Install wheel washing equipment or conduct wheel washing manually at each exit of the works area to prevent trucks from carrying muddy or dusty substance onto public roads; ● In periods of high wind, dust-generating operations shall not be permitted within 200 m of residential areas. Special precautions need to be applied in the vicinity of sensitive areas such as schools, kindergartens and hospitals; ● Equip material stockpiles and concrete mixing equipment with dust shrouds. For the earthwork management for backfill, measures will include surface press and periodical spraying and covering. The extra earth or dreg should be cleared from the project site in time to avoid long term stockpiling. The height of stockpiles should 			

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<p>be less than 0.7m;</p> <ul style="list-style-type: none"> ● To avoid odor impacts caused by channel cleaning, transport the removed trash quickly to the local landfill. Transport of dredged sediments will be undertaken in closed tank wagons to prevent scattering along the way and impacting the urban area; ● Site temporary dredged sediment storage locations at least 50 m downwind of the nearest residential household; ● Unauthorized burning of construction and demolition waste material and refuse shall be subject to penalties for the Contractor, and withholding of payment. 			
	Noise	PME noise impact to sensitive receptors	<p>Put into tender documents the following noise mitigation measures:</p> <ul style="list-style-type: none"> ● During daytime construction, the contractor will ensure that: (i) noise levels from equipment and machinery conform to the PRC standard for Noise Limits for Construction Sites (GB12523-2011) and the WBG EHS Standards, and properly maintain machinery to minimize noise; (ii) equipment with high noise and high vibration are not used near village or township areas and only low noise machinery or the equipment with sound insulation is employed; (iii) sites for asphalt-mixing plants and similar activities will be located at least 300 m away from the nearest sensitive receptor; and (iii) temporary anti-noise barriers or hoardings will be installed around the equipment to shield residences when there are residences within 50 m of the noise source; ● For all the <u>urban roads</u>, there will be no night time (between 2200 and 0600 hours) construction; ● For the <u>BRT corridor</u>, night time construction shall be avoided. Yet, recognizing that construction (e.g. BRT stations) occasionally would require some works to be conducted at night to take advantage of less road traffic or to avoid worsening day time traffic conditions. Night time construction work on the BRT corridor if needed should prevent using high sound power level equipment and nearby residents should be notified of 	Design Institute	JPMO; LIEC	Included in tendering agency contract

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<p>such night time activities well beforehand</p> <ul style="list-style-type: none"> ● Regularly monitor noise at sensitive areas (refer to the monitoring plan). If noise standards are exceeded by more than 3 dB, equipment and construction conditions shall be checked, and mitigation measures shall be implemented to rectify the situation; ● Provide the construction workers with suitable hearing protection (ear muffs) according to the worker health protection law of the PRC; ● Control the speed of bulldozer, excavator, crusher and other transport vehicles travelling on site, adopt noise reduction measures on equipment, step up equipment repair and maintenance to keep them in good working condition; ● Limit the speed of vehicles travelling on site (less than 8 km/hr), forbid the use of horns unless absolutely necessary, minimize the use of whistles; ● Maintain continual communication with the villages and communities along the road alignments and Yudai River. 			
	Water quality	Construction site wastewater, bridge construction and dredging impact on water bodies	<p>Put into tender documents the following measures to treat wastewater and runoff from construction sites and to contain suspended solids dispersion during bridge construction and dredging:</p> <ul style="list-style-type: none"> ● Portable toilets and small package wastewater treatment plants will be provided on construction sites for the workers and canteens; If there are nearby public sewers, interim storage tanks and pipelines will be installed to convey wastewater to those sewers; ● Sedimentation tanks will be installed on construction sites to treat process water (e.g. concrete batching for bridge construction) and muddy runoff with high concentrations of suspended solids. If necessary, flocculants such as polyacryl amide (PAM) will be used to facilitate sedimentation; ● Construction of road bridge foundations will avoid the rainy season from May to October to minimize potential water quality impact. Mitigation measures such as placement of sandbags or berms around foundation 	Design Institute	JPMO; LIEC	Included in tendering agency contract

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<p>works to contain muddy water runoff will be adopted. Slurry from pile drilling in the river bed will be pumped to shore and properly disposed of. This will reduce the disturbance of sediments and the impact on water quality. Pier construction in Yudai River will be planned and laid out to ensure adequate opening for water flow;</p> <ul style="list-style-type: none"> ● Dredging in Yudai River will be done in the dry and during the dry season from October to March to minimize potential water quality impact. Sand bags or berms placed around the dredging area will be planned and laid out to ensure adequate opening for water flow; ● Construction machinery will be repaired and washed at special repairing shops. No onsite machine repair and washing shall be allowed; ● Storage facilities for fuels, oil, and other hazardous materials will be within secured areas on impermeable surfaces, and provided with bunds and cleanup kits; ● The contractors' fuel suppliers must be properly licensed, follow proper protocol for transferring fuel, and must be in compliance with Transportation, Loading and Unloading of Dangerous or Harmful Goods (JT 3145-88); ● Material stockpiles will be protected against wind and runoff waters which might transport them to surface waters; ● Any spills are to be cleaned up according to PRC norms and codes within 24 hours of the occurrence, with contaminated soils and water treated according to PRC norms and codes. Records must be handed over without delay to the HPMO and HEPB; ● Mitigation of water quality impact during water pumping and sediment removal at each dredging location will be based on water quality monitoring results. The water quality monitoring approach for dredging works will include, at each dredging location, one control station up current of the location and one impact station down current of the location. When the monitoring result shows that the suspended solids (SS) level at the down current impact station is 			

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<p>130% higher than that at the up current control station, it is indicative of bottom sediment being stirred up and discharged downstream by water pumping or during sediment excavation. The contractor shall reduce the pumping or excavation rate and/or pump the slurry to a sedimentation pond first for settling of SS, until the down current SS level is less than 130% above the upstream SS level;</p> <ul style="list-style-type: none"> Similar monitoring approach will be adopted for mitigating water quality impact during road bridge construction, where up current and down current monitoring stations will be set up and SS levels monitored. When the SS levels at the down current impact station is 130% higher than the SS levels at the up current control station, the contractor shall adopt alternative construction methods or additional mitigation measures until the down current SS level is less than 130% above the upstream SS level. 			
	Ecology	Impact on trees and wildlife	<p>Put into tender documents the following ecological mitigation measures:</p> <ul style="list-style-type: none"> All camphor trees at the 3 locations identified in this EIA (see Figure IV.5) must be tagged, conspicuously marked and fenced off before commencement of construction Construction workers are prohibited from capturing any wildlife anywhere in the project area and from damaging the camphor trees 	Design Institute	JPMO; LIEC	Included in tendering agency contract
	Physical cultural resources	Preservation of old camphor trees	<p>Put into tender documents the following ecological mitigation measures:</p> <ul style="list-style-type: none"> All old camphor trees at the 3 locations identified in this EIA (see Table IV.19)) must be tagged, conspicuously marked and fenced off before commencement of construction Construction workers are prohibited from damaging the old camphor trees 	Design Institute	JPMO; LIEC	Included in tendering agency contract
	Solid waste	Disposal or storage of excavated spoil and construction and demolition	<p>Specify in tender documents the following mitigation measures:</p> <ul style="list-style-type: none"> Locations of approved spoil disposal and storage sites, other sites cannot be used unless authorized by appropriate agency. Approved storage and disposal sites for construction and demolition waste, other 	Design Institute	JPMO; LIEC	Included in tendering agency contract

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
		waste	sites not to be used.			
	Health & safety	Occupational health & safety of workers	Specify in tender documents the provision of personal safety and protective equipment such as safety hats and shoes, eye goggles, respiratory masks, etc. to all construction workers.	Design Institute	JPMO; LIEC	Included in tendering agency contract
Construction traffic	Traffic	Construction vehicles causing traffic congestion	Plan transport routes for construction vehicles and specify in tender documents to forbid vehicles from using other roads and during peak traffic hours.	Design Institute, Local traffic police	JPMO; LIEC	Included in tendering agency contract
Estimated cost for Design and Pre-construction stage: Included in detailed design and contract tender fees						
Construction Stage						
Construction site good practice	Soil resources	Spoil disposal	<ul style="list-style-type: none"> Strip and store topsoil in a stockpile for reuse in restoration. Use spoil disposal sites approved by YEPB and manage in accordance with approved plan. Avoid side casting of spoil on slopes. Co-ordinate with water resources bureau monitoring station on effectiveness of soil erosion prevention measures and any need for remedial action. Rehabilitate and restore spoil disposal sites in accordance with agreed plan. Conduct project completion audit to confirm that spoil disposal site rehabilitation meets required standard, contractor liable in case of non-compliance. 	Contractors	JMUCID C, ESE, LIEC	Included in the implementation of the approved Soil and Water Conservation Plan
		Soil erosion	<ul style="list-style-type: none"> Ensure contractors aware of all soil erosion requirements as set out in the approved plan in the Soil and Water Conservation Report and have developed appropriate method statements and management proposals. Avoid rainy season. If necessary, construct berms to direct rainwater runoff away from exposed surface. Install drainage ditches and sedimentation tanks in temporary construction areas to prevent soil erosion and to manage run-off. Stabilize all cut slopes, embankments and other erosion-prone working areas while works are ongoing. Implement permanent stabilization measures as soon as possible, at least within 30 days. Pay close attention to drainage provision and establishment of vegetation cover on backfilled areas to prevent soil erosion. 	Contractor	JMUCID C, ESE, LIEC	Included in the implementation of the approved Soil and Water Conservation Plan

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<ul style="list-style-type: none"> If restoration is carried out during periods of hot or extreme weather, ensure adequate aftercare to maximize survival. 			
		Soil contamination	<ul style="list-style-type: none"> Properly store petroleum products, hazardous materials and wastes on impervious. Develop spill response plan. Keep a stock of absorbent materials (e.g. sand, earth or commercial products) on site to deal with spillages and train staff in their use. If there is a spill take immediate action to prevent entering drains, watercourses, unmade ground or porous surfaces. Do not hose the spillage down or use any detergents use oil absorbents and dispose of used absorbents at a waste management facility. Record any spill events and actions taken in environmental monitoring logs and report to LIEC. Properly store petroleum products, hazardous materials and waste in clearly labeled containers on an impermeable surface in secure and covered areas, preferably with a containment tray for any leaks. Remove all construction waste from the site to approved waste disposal sites. 	Contractor	JMUCID C, ESE, LIEC	Included in the implementation of the approved Soil and Water Conservation Plan
	Air quality	Dust (TSP) during construction	<ul style="list-style-type: none"> Provide dust masks to operating personnel; Spray water regularly on hauling and access roads to borrow pits (at least once a day) to suppress dust; and erect hoarding around dusty activities; Minimize the storage time of construction and demolition wastes on site by regularly removing them off site; Equip concrete batching plants with fabric filters and/or wet scrubbers to reduce the level of dust emissions. Additionally, concrete mixing stations at least 300 meters downwind of the nearest residential household; Mount protective canvasses on all trucks which transport material that could generate dust; Build access and hauling roads at sufficient distances from residential areas, particular, from local schools and hospitals; Assign haulage routes and schedules to 	Contractor	JMUCID C, ESE, LIEC	\$20,000

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<p>avoid transport occurring in the central areas, traffic intensive areas or residential areas. For the areas with high-demand on environmental quality, transport should be arranged at night.</p> <ul style="list-style-type: none"> ● Keep construction vehicles and machinery in good working order, regularly service and turn off engines when not in use; ● Vehicles with an open load-carrying case, which transport potentially dust-producing materials, shall have proper fitting sides and tail boards. Dust-prone materials shall not be loaded to a level higher than the side and tail boards, and shall always be covered with a strong tarpaulin; ● Install wheel washing equipment or conduct wheel washing manually at each exit of the works area to prevent trucks from carrying muddy or dusty substance onto public roads; ● Immediately cleanup all muddy or dusty materials on public roads outside the exits of the works areas. ● In periods of high wind, dust-generating operations shall not be permitted within 100 m of residential areas. Special precautions need to be applied in the vicinity of sensitive areas such as schools and hospitals; ● Equip material stockpiles and concrete mixing equipment with dust shrouds. For the earthwork management for backfill, measures will include surface press and periodical spraying and covering. The extra earth or dreg should be cleared from the project site in time to avoid long term stockpiling. The height of stockpiles should be less than 0.7m; ● Plan the transport routes and time to avoid busy traffic and heavily populated areas when transporting earthy materials; ● Immediately plant vegetation in all temporary landtake areas upon completion of construction to prevent dust and soil erosion; ● Unauthorized burning of construction and demolition waste material and refuse shall be subject to penalties for the Contractor, and withholding of payment. 			
		Fumes and	<ul style="list-style-type: none"> ● Locate asphalt plants and mixers at least 	Contractor	JMUCID	

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
		particulate matter from asphalt mixing plant, concrete batching plant and other equipment and machinery	<p>200m downwind from residential areas and other sensitive receptors.</p> <ul style="list-style-type: none"> ● Enclose these plants and equip them with bag house filter or similar air pollution control equipment. ● Regularly inspect and certify vehicle and equipment emissions and maintain to a high standard. 		C, ESE, LIEC	
	Noise and vibration	Noise from PME and vehicles	<ul style="list-style-type: none"> ● During daytime construction, the contractor will ensure that: (i) noise levels from equipment and machinery conform to the PRC standard for Noise Limits for Construction Sites (GB12523-2011) and the WBG EHS Standards, and properly maintain machinery to minimize noise; (ii) equipment with high noise and high vibration are not used near village or township areas and only low noise machinery or the equipment with sound insulation is employed; (iii) sites for asphalt-mixing plants and similar activities will be located at least 300 m away from the nearest sensitive receptor; and (iii) temporary anti-noise barriers or hoardings will be installed around the equipment to shield residences when there are residences within 50 m of the noise source; ● For all the <u>urban roads</u>, there will be no night time (between 2200 and 0600 hours) construction; ● For the <u>BRT corridor</u>, night time construction shall be avoided. Yet, recognizing that construction (e.g. BRT stations) occasionally would require some works to be conducted at night to take advantage of less road traffic or to avoid worsening day time traffic conditions. Night time construction work on the BRT corridor if needed should prevent using high sound power level equipment and nearby residents should be notified of such night time activities well beforehand ● Regularly monitor noise at sensitive areas (refer to the monitoring plan). If noise standards are exceeded by more than 3 dB, equipment and construction conditions shall be checked, and mitigation measures shall be implemented to rectify the situation; 	Contractor	JMUCID C, ESE, LIEC	\$30,000

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<ul style="list-style-type: none"> ● Provide the construction workers with suitable hearing protection (ear muffs) according to the worker health protection law of the PRC; ● Control the speed of bulldozer, excavator, crusher and other transport vehicles travelling on site, adopt noise reduction measures on equipment, step up equipment repair and maintenance to keep them in good working condition; ● Limit the speed of vehicles travelling on site (less than 8 km/hr), forbid the use of horns unless absolutely necessary, minimize the use of whistles; ● Maintain continual communication with the villages and communities along the road alignments and Yudai River. 			
	Water quality	Construction site runoff and wastewater discharge; dredging impact	<ul style="list-style-type: none"> ● Portable toilets and small package wastewater treatment plants will be provided on construction sites for the workers and canteens; If there are nearby public sewers, interim storage tanks and pipelines will be installed to convey wastewater to those sewers; ● Sedimentation tanks will be installed on construction sites to treat process water (e.g. concrete batching for bridge construction) and muddy runoff with high concentrations of suspended solids. If necessary, flocculants such as polyacryl amide (PAM) will be used to facilitate sedimentation; ● Construction of road bridge foundations will avoid the rainy season from May to October to minimize potential water quality impact. Mitigation measures such as placement of sandbags or berms around foundation works to contain muddy water runoff will be adopted. Slurry from pile drilling in the river bed will be pumped to shore and properly disposed of. This will reduce the disturbance of sediments and the impact on water quality. Pier construction in Yudai River will be planned and laid out to ensure adequate opening for water flow; ● Dredging in Yudai River will be done in the dry and during the dry season from October to March to minimize potential water quality impact. Sand bags or berms placed around 	Contractor	JMUCID C, ESE, LIEC	\$20,000

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<p>the dredging area will be planned and laid out to ensure adequate opening for water flow;</p> <ul style="list-style-type: none"> ● Construction machinery will be repaired and washed at special repairing shops. No onsite machine repair and washing shall be allowed; ● Storage facilities for fuels, oil, and other hazardous materials will be within secured areas on impermeable surfaces, and provided with bunds and cleanup kits; ● The contractors' fuel suppliers must be properly licensed, follow proper protocol for transferring fuel, and must be in compliance with Transportation, Loading and Unloading of Dangerous or Harmful Goods (JT 3145-88); ● Material stockpiles will be protected against wind and runoff waters which might transport them to surface waters; ● Any spills are to be cleaned up according to PRC norms and codes within 24 hours of the occurrence, with contaminated soils and water treated according to PRC norms and codes. Records must be handed over without delay to the JPMO and JEPB; ● Mitigation of water quality impact during water pumping and sediment removal at each dredging location will be based on water quality monitoring results. The water quality monitoring approach for dredging works will include, at each dredging location, one control station up current of the location and one impact station down current of the location. When the monitoring result shows that the suspended solids (SS) level at the down current impact station is 130% higher than that at the up current control station, it is indicative of bottom sediment being stirred up and discharged downstream by water pumping or during sediment excavation. The contractor shall reduce the pumping or excavation rate and/or pump the slurry to a sedimentation pond first for settling of SS, until the down current SS level is less than 130% above the upstream SS level; ● Similar monitoring approach will be adopted for mitigating water quality impact during 			

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			road bridge construction, where up current and down current monitoring stations will be set up and SS levels monitored. When the SS levels at the down current impact station is 130% higher than the SS levels at the up current control station, the contractor shall adopt alternative construction methods or additional mitigation measures until the down current SS level is less than 130% above the upstream SS level.			
	Solid waste	Construction site refuse and spoil disposal	<ul style="list-style-type: none"> • Temporary storage and permanent disposal of spoil and construction and demolition waste at designated sites only. These sites shall be at least 500 m from any water body. • Transport construction waste in enclosed containers; • Establish enclosed waste collection points on site, with separation of domestic waste and construction waste; • Set up centralized domestic waste collection point and transport offsite for disposal regularly by sanitation department; • Spoil disposal site management and restoration plans will be developed, to be approved by responsible authority; a protocol will be established between the contractors and Ji'an Cityscape Management Department to clarify the spoil quantity and a permit for the clearance of excavated earthwork shall be obtained; • Site restoration will follow the completion of works in full compliance with all applicable standards and specifications, and will be required before final acceptance and payment under the terms of contracts.. 	Contractor	JMUCID C, ESE, LIEC	\$20,000
	Ecology	Destruction of vegetation	<ul style="list-style-type: none"> • Construction workers are prohibited from capturing any wildlife during construction; • Construction workers are prohibited from damaging camphor trees • Preserve existing vegetation where no construction activity is planned; • Protect existing trees and grassland during construction; where a tree has to be removed or an area of grassland disturbed, replant trees and re-vegetate the area after construction; • Remove trees or shrubs only as the last resort if they impinge directly on the permanent works or necessary temporary 	Contractor	JMUCID C, ESE, LIEC	\$10,000

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			works.			
	Physical cultural resources	Destruction of cultural relics in stream bed and soil	<ul style="list-style-type: none"> Construction workers are prohibited from damaging the old camphor trees Contractor must comply with PRC's <i>Cultural Relics Protection Law</i> and <i>Cultural Relics Protection Law Implementation Regulations</i> if such relics are discovered, stop work immediately and notify the relevant authorities, adopt protection measures and notify the Security Bureau to protect the site. 	Contractor	JMUCID C, ESE, LIEC	None
	Overall disturbance to communities	Excessive disturbance to communities due to prolonged construction times	<ul style="list-style-type: none"> Contractors to identify and adhere to strict schedule for completion of each pipeline section and to avoid prolonged construction, disturbance 	Contractor	JMUCID C, ESE, LIEC	Covered in above costs
Health and Safety	Occupational health and safety	Construction site sanitation	<ul style="list-style-type: none"> Effectively clean and disinfect the site. During site formation, spray with phenolated water for disinfection. Disinfect toilets and refuse piles and timely remove solid waste; Exterminate rodents on site at least once every 3 months, and exterminate mosquitoes and flies at least twice each year; Minimise the risk of fly- or mosquito-borne diseases by maintaining well-drained and hygienic project sites; Remove standing water bodies and cover drums and other containers to avoid formation of stagnant water; Ensure personnel are aware of potential disease risks; Enforce on-site hygiene regulations to prevent litter; Provide public toilets in accordance with the requirements of labor management and sanitation departments in the living areas on construction site, and appoint designated staff responsible for cleaning and disinfection. Work camp wastewater shall be discharged into the municipal sewer system or treated on-site with portable system. 	Contractor	JMUCID C, ESE, LIEC	\$30,000
		Occupational safety	<ul style="list-style-type: none"> Provide safety hats and shoes to all construction workers and enforce their use by the workers; Provide ear plugs to workers working near noisy PME; 	Contractor	JMUCID C, ESE, LIEC	\$10,000

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<ul style="list-style-type: none"> Clearly demarcate all open-cut pipeline trenches and erect barriers on either side of them to prevent injury to workers / the public 			
		Food safety	<ul style="list-style-type: none"> Inspect and supervise food hygiene in cafeteria on site regularly. Cafeteria workers must have valid health permits. Once food poisoning is discovered, implement effective control measures immediately to prevent it from spreading. 	Contractor	JMUCID C, ESE, LIEC	None
		Disease prevention and safety awareness	<ul style="list-style-type: none"> Construction workers must have physical examination before start working on site. If infectious disease is found, the patient must be isolated for treatment to prevent the disease from spreading. From the 2nd year onwards, conduct physical examination on 20% of the workers every year. Establish health clinic at location where workers are concentrated, which should be equipped with common medical supplies and medication for simple treatment and emergency treatment for accidents. Specify the persons responsible for health and epidemic prevention, education on food hygiene, and disease prevention, to raise the awareness of workers. 	Contractor	JMUCID C, ESE, LIEC	\$20,000
	Community health and safety	Temporary traffic management	<ul style="list-style-type: none"> A traffic control and operation plan will be prepared together with the local traffic management authority prior to any construction. The plan shall include provisions for diverting or scheduling construction traffic to avoid morning and afternoon peak traffic hours, regulating traffic at road crossings with an emphasis on ensuring public safety through clear signs, controls and planning in advance. 	Contractor , local traffic police	JMUCID C, ESE, LIEC	JMG (traffic police department)
		Information disclosure	<ul style="list-style-type: none"> Residents and businesses will be informed in advance through media of the construction activities, given the dates and duration of expected disruption. 	Contractor	JMUCID C, ESE, LIEC	None
		Access to construction sites	<ul style="list-style-type: none"> Clear signs will be placed at construction sites in view of the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc and raising awareness on safety issues. All sites will be made secure, discouraging access by members of the public through appropriate fencing whenever appropriate. 	Contractor	JMUCID C, ESE, LIEC	None
		Utility services interruptions	<ul style="list-style-type: none"> Assess construction locations in advance for potential disruption to services and identify 	Contractor , local service	JMUCID C, ESE,	None

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<p>risks before starting construction.</p> <ul style="list-style-type: none"> If temporary disruption is unavoidable, develop a plan to minimize disruption with relevant authorities e.g. power company, water supply company, communication company, and communicate dates and duration in advance to all affected people. 	providers	LIEC	
Grievance redress mechanism	Social & environmental	Handling and resolving complaints on contractors	<ul style="list-style-type: none"> Establish a GRM, appoint a GRM coordinator within JPMO. Brief and provide training to GRM access points (JPMO, JMUCIDC, contractors). Disclose GRM to affected people before construction begins at the main entrance to each construction site. Maintain and update a Complaint Register to document all complaints. 	Contractor, JPMO, JMUCIDC, ESE, LIEC	JEPB	JPMO budget, Loan implementation Consulting Service
Estimated cost for the Construction Stage: \$160,000						
Operational Stage						
Urban roads and BRT corridor	Traffic	Road and drainage condition	Regularly inspect and maintain the road surface and drainage system.	O&M units	JPMO	O&M Unit's operation budget
		Road safety and traffic accidents	Strictly enforce traffic law to improve road safety and reduce traffic accidents.	Ji'an traffic police	JMG	O&M Unit's operation budget
	Social, environmental health	Noise mitigation on BRT corridor	To be implemented according to Table V.8 of this EIA	JMUCIDC	JPMO	\$140,000
		Noise mitigation on five urban roads	Installation of ventilated double glazed windows at the 28 existing sensitive receptors in Table V.10 of this EIA that show noise level increases of >3dB(A) compared to the existing noise levels, if these receptors are not resettled in or before year 2020.	JMUCIDC	JPMO	\$140,000
Yudai River	Social, health and safety	Flood protection	Regularly inspect and maintain river embankment and clean up refuse in the river	O&M units	JPMO	O&M Unit's operation budget
	Water quality	Accident or spillage	O&M Manual to include accident and spill management measures for clean-up and to minimise the spread of pollutants in the event of an incident.	O&M units	JMG	O&M Unit's operation budget
	Water quality	Waste management and minimisation	Park staff to regularly empty waste management receptacles and ensure transfer to appropriate licensed facility. Options for composting of green waste and reuse of recycled water for irrigation to be maximised.	O&M units	JMG	O&M Unit's operation budget

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
	Ecology	Landscaping aftercare and ecological monitoring	Monitor establishment of rehabilitated and newly created habitats. Monitor the population of target bird species.	O&M units	JMG	O&M Unit's operation budget <i>Ad hoc</i> (eg. local bird group)
	Emergency response	Extreme rainfall and flood	Respond to early warning of extreme weather events and flood, as per agreed municipality plan.	O&M units	JMG	O&M Unit's operation budget
Estimated cost for the Operational Stage: \$280,000						

ADB = Asian Development Bank; EIA = Environmental Impact Assessment; EIR = Environmental Impact Report; ESE = Environmental supervision engineer; JEMS = Ji'an Environmental Monitoring Station; JEPB = Ji'an Environmental Protection Bureau; JMUCIDC = Ji'an Urban Investment and Development Company, Ltd. (JIDC); JMG = Ji'an Municipal Government; JPMO = Ji'an Project Management Office; LIEC = Loan implementation environmental consultant; O&M = operation & maintenance; PME = powered mechanical equipment; SS = suspended solid; TSP = total suspended particles.

C. Monitoring and reporting

15. Three types of project monitoring will be conducted under the EMP.²¹

- (i) Project readiness monitoring. To be conducted by the LIEC.
- (ii) Project impact monitoring. To be conducted by: (a) the Ji'an Environmental Monitoring Station (JEMS) contracted by JPMO; and (b) the contractors, who will be required to conduct frequent noise and air quality monitoring around construction sites and to report monitoring results in the framework of their weekly progress reports to JPMO, JMUCIDC and ESE.
- (iii) Independent evaluation. To be conducted by the ESE (contracted by JPMO) and LIEC (from loan implementation consulting services). To verify EMP compliance during project implementation.

16. ADB will oversee project compliance on the basis of the semi-annual environmental monitoring reports provided by JPMO and site visits (generally 1-2 times/year). Monitoring and reporting arrangements defined for this project are described below.

17. **Project readiness monitoring.** Before construction, the LIEC will assess the project's readiness in terms of environmental management based on a set of indicators (Table EMP-3) and report it to ADB and JPMO. This assessment will demonstrate that environmental commitments are being carried out and environmental management systems are in place before construction starts, or suggest corrective actions to ensure that all requirements are met.

Table EMP-3: Project Readiness Assessment Indicators

²¹ In addition to project-specific monitoring, Ji'an EPB will conduct independent ambient and/or enforcement monitoring as per national requirements. This is separate to, and not funded by, the project.

1. Indicator	2. Criteria	3. Assessment
4. EMP update	<ul style="list-style-type: none"> • EMP was updated after technical detailed design & approved by ADB 	5. Yes No
6. Compliance with loan covenants	<ul style="list-style-type: none"> • The borrower complies with loan covenants related to project design and environmental management planning 	7. Yes No
8. Public involvement effectiveness	<ul style="list-style-type: none"> • Meaningful consultation completed • GRM established with entry points 	9. Yes No 10. Yes No
11. Environmental Supervision in place	<ul style="list-style-type: none"> • Loan implementation environmental consultant (LIEC) is in place • Staff environment specialists appointed by JPMO and JMUCIDC • Environmental supervision engineer (ESE) contracted by JPMO • Environment monitoring station contracted by JPMO 	12. Yes No 13. Yes No 14. Yes No 15. Yes No
16. Bidding documents and contracts with environmental safeguards	<ul style="list-style-type: none"> • Bidding documents and contracts incorporating the environmental activities and safeguards listed as loan assurances • Bidding documents and contracts incorporating the impact mitigation and environmental management provisions of the EMP • Environmental requirements of EMP included in contract documents for construction contracts 	17. Yes No 18. Yes No 19. Yes No
20. EMP financial support	<ul style="list-style-type: none"> • The required funds have been set aside for EMP implementation 	21. Yes No

18. **Project impact monitoring.** Table EMP-4 shows the internal environmental impact monitoring program designed for this project, defining the scope, location, parameter, duration and frequency, and responsible agencies, for monitoring during the construction and operational stages. Internal environmental monitoring will include monitoring of air quality, noise, water quality and ecology. For air, noise, and water, the monitoring during construction and operation will be conducted by JEMS contracted by JPMO.

19. For monitoring of dredging and bridge construction impacts on water quality, a control station versus impact station approach will be adopted. The monitoring station upstream of the dredging section will function as the control station as it is not to be impacted by dredging activities. The monitoring station downstream of the dredging section will function as the impact station. Any increase in the level of water quality parameter (such as suspended solids; SS) at the impact station compared to the control station is indicative of potential impact due to dredging. If the level of the water quality parameter (mainly SS) at the impact station is >130% of the control station, mitigation measures such as changing the dredging method or reducing the dredging rate will need to be adopted.

20. The internal environmental impact monitoring results will be compared with relevant PRC performance standards (Table EMP-5). Non-compliance with these standards will be highlighted in the monitoring reports. Monitoring results will be (i) submitted by JEMS to JPMO, JMUCIDC and ESE on a monthly basis, and (ii) then reported by JPMO to ADB in semi-annual environmental monitoring reports (prepared with the support of the LIEC–Table EMP-6).

Table EMP-4: Internal Environmental Monitoring Program

Item	Parameter	Monitoring Location	Monitoring Frequency & Duration	Implementing Entity	Supervising Entity	Estimated Cost
Construction Stage						
Dust and noise	TSP, L _{Aeq}	At boundaries of all construction sites	2 times/day, three times/week during construction period	Contractor	JMUCIDC, ESE	Included in Contractor budget
Air quality	TSP	28 locations: <u>BRT corridor</u> 1. Jinggangshan University Affiliated Hospital井冈山大学附属医院 2. Ji'an City Center People's Hospital吉安市中心人民医院 3. Taqian Village塔前村 4. Jiangjiafang江家坊 5. Xinfeng Village新丰村 6. Nankeng Village南坑村 7. Jinggangshan National Economic Development Zone井冈山国家经济开发区 <u>Urban roads</u> 8. Baitang Village白塘村 9. Jinluhuayuan金鹭花园 10. Wuli Village Zoujia Village Group五里村邹家村组 11. Wuli Primary School五里小学 12. Jiangbian Village江边村 13. Luogang Village螺冈村 14. Chengshang Village城上村 15. Maobei Village毛背村 16. Baitang Primary School白塘小学 17. Anqian Old Village案前老村 18. Anqian New Village案前新村 19. Ji'an City Disease Prevention and Control Center吉安市疾病预防控制中心 20. Yangminghuayuan阳明花园 21. Dujiatang Village杜家坊村 22. Nan'an Village南岸村 23. Dongtou Village冻头村 24. Laoyangjia Village老杨家村 25. Jiaojialing Village焦家岭村 26. Jinggangshan University Ji'an City Health College井冈山大学吉安市卫生学校 <u>Yudai River</u> 27. Xiazhou Village 下洲村 28. Qiaotou Village 桥头村	1 day (24-hr continuous sampling) per month <u>when there is construction occurring within 200 m of the monitoring location</u>	JEMS (contracted through JPMO)	JMUCIDC, ESE	\$50,000
Noise	L _{Aeq}	28 locations (same as for air quality)	2 times per day (day time and night time); 1 day per month <u>when there is construction occurring within 200 m of the monitoring location</u>	JEMS (contracted through JPMO)	JMUCIDC, ESE	\$50,000
Water quality	SS, DO, TPH	<u>Yudai River dredging:</u> 2 locations at each dredging section: (1) 50 m upstream of the dredging section (control station), (2) 100 m downstream of the dredging section (impact station) <u>Road bridge construction:</u>	2 times/ day: 1 day per month <u>when there are dredging or bridge construction</u>	JEMS (contracted through JPMO)	JMUCIDC, ESE	\$40,000

Item	Parameter	Monitoring Location	Monitoring Frequency & Duration	Implementing Entity	Supervising Entity	Estimated Cost
		2 locations on the river: (1) 50 m upstream of the bridge alignment (control station), (2) 100 m downstream of the bridge alignment (impact station)	activities.			
Operational Stage (first year)						
Air quality	NO ₂	26 locations for the urban roads and BRT corridor same as in the construction stage	1 time per day; 2 days per month for 12 consecutive months	JEMS (contracted through O&M units)	JPMO	Included in O&M budget
Noise	L _{Aeq}	26 locations for the urban roads and BRT corridor same as in the construction stage	Two times per day (day time and night time); 2 days per month for 12 consecutive months. <u>Monitoring can cease when 100% compliance is achieved 3 consecutive times at the same site</u>	JEMS (contracted through O&M units)	JPMO	Included in O&M budget
Total estimated cost:						\$140,000
ESE = Environmental supervision engineer; JEMS = Ji'an Environmental Monitoring Station; JMUCIDC = Ji'an Urban Investment and Development Company, Ltd. (JIDC); JPMO = Ji'an Project Management Office; O&M = operation and maintenance.						

Table EMP-5: Monitoring Indicators and Applicable PRC Standards²²

Phase	Indicator	Standard
Construction	TSP	Class II Ambient Air Quality Standard (GB 3095-1996)
	Noise limits of PME at boundary of construction site	Emission Standard of Environmental Noise for Boundary of Construction Site (GB 12523-2011)
	Water quality during dredging and embankment construction (SS, DO, TPH)	Use control station and impact station approach. If the level at the impact station is >130% of the control station, mitigation measures such as reducing the dredging rate or changing the dredging equipment will be implemented.
Operation	NO ₂	Class II Ambient Air Quality Standard (GB 3095-2012)
	Noise	Emission Standard for Industrial Enterprises Noise at Boundary (GB 12348-2008)

Note: DO = dissolved oxygen, NO₂ = nitrogen dioxide, PME = powered mechanical equipment, SS = suspended solids, TPH = total petroleum hydrocarbon, TSP = total suspended particulates.

21. **Independent evaluation.** Independent evaluation of EMP implementation will be undertaken by the ESE and LIEC. The budget for the ESE is estimated at \$100,000. The budget for the LIEC will be included in the Loan Implementation Consulting services (\$71,000). JPMO will report the LIEC's independent evaluation to ADB on the project's adherence to the EMP, information on project implementation, environmental performance of the contractors, and environmental compliance through quarterly project progress reports and semi-annual environmental monitoring reports (Table EMP-6). The LIEC will support JPMO in developing the

²² The project applies PRC standards. A comparison of PRC standards with internationally accepted standards (as defined in the World Bank's Environment Health and Safety Guidelines) was conducted for the EIA. The comparison confirmed that PRC standards are either internationally accepted, or have comparable standard limits with most of the international standards.

semi-annual environmental monitoring reports. The reports should confirm the project's compliance with the EMP and local legislation (including the PRC's EIA requirements), the results of independent evaluation (both contractor compliance with the EMP and the results of environmental monitoring by the JEMS), identify any environment related implementation issues and necessary corrective actions, and reflect these in a corrective action plan. Operation and performance of the project GRM, environmental institutional strengthening and training, and compliance with all covenants under the project will be included in the report.

22. Monitoring by ADB. Besides reviewing the semi-annual environment monitoring reports from JPMO and the verification reports from the LIEC, ADB missions will inspect the project progress and implementation on site at least once a year. For environmental issues, inspections will focus mainly on (i) monitoring data; (ii) the implementation status of project performance indicators specified in the loan documents for the environment, environmental compliance, implementation of the EMP, and environmental institutional strengthening and training; (iii) the environmental performance of contractors, LIEC, and JPMO; and (iv) operation and performance of the project GRM. The performance of the contractors in respect of environmental compliance will be recorded and will be considered in the next bid evaluations.

23. Environmental acceptance monitoring and reporting. Following the PRC Regulation on Project Completion Environmental Audit (MEP, 2001), within three months after the completion of each project component, an environmental acceptance monitoring and audit report for the component shall be prepared by a licensed environmental monitoring institute. The report will be reviewed and approved by JEPB, and then reported to ADB (Table EMP-6). The environmental acceptance reports of the component completions will indicate the timing, extent, effectiveness of completed mitigation and of maintenance, and the needs for additional mitigation measures and monitoring during operations.

Table EMP-6: Reporting Plan

Reports		From	To	Frequency
Construction Phase				
Internal progress reports by contractors	Internal project progress report by construction contractors, including monitoring results	Contractors	JPMO, JMUCIDC, ESE	Monthly
Internal environmental monitoring	Environmental monitoring report	JEMS	JEPB, JPMO, JMUCIDC, ESE	Monthly
	Environment progress and monitoring reports	JPMO	ADB	Semi-annual
Acceptance report	Environmental acceptance monitoring and audit report	Licensed institute	JEPB	Once; within 3 months of completion of physical works
Operational Phase				
Internal environmental monitoring	Environmental monitoring report (first year of operation)	JEMS	JEPB, JPMO	Quarterly
	Environment progress and monitoring report	JPMO	ADB	Semi-annual

ADB = Asian Development Bank; ESE = Environmental supervision engineer;; JEMS = Ji'an Environment Monitoring Station; JEPB = Ji'an Environmental Protection Bureau; Ji'an Urban Investment and Development Company, Ltd. (JIDC); JPMO = Ji'an Project Management Office.

D. Institutional capacity development and training

24. The capacity of JPMO, JMUCIDC, O&M units and contractors' staff responsible for EMP implementation and supervision will be strengthened. All parties involved in implementing and supervising the EMP must have an understanding of the goals, methods, and practices of project environmental management. The project will address the lack of capacities and expertise in environmental management through (i) institutional capacity development, and (ii) training.

25. **Institutional capacity development.** The capacities of the JPMO, JMUCIDC and O&M units to coordinate environmental management will be strengthened through a set of measures:

- (i) The appointment of at least one qualified environment specialist within the JPMO staff to be in charge of EMP coordination, implementation and site inspections including GRM.
- (ii) The commission of an independent ESE by JPMO to provide independent monitoring and verification of EMP implementation
- (iii) The appointment of LIEC under the loan implementation consultancy to guide JPMO and JMUCIDC in implementing the EMP and ensure compliance with ADB's Safeguard Policy Statement (SPS 2009).

26. **Training.** JPMO, JMUCIDC, contractors and O&M units will receive training in EMP implementation, supervision, and reporting, and on the Grievance Redress Mechanism (**Table EMP-7**). Training will be facilitated by the LIEC with support of other experts under the loan implementation consultant services. The budget for training is estimated to be \$15,000.

Table EMP-7: Training Program

Training	Attendees	Contents	Times	Period (days)	No. of persons	Cost (\$/person /day)	Total Cost
EMP adjustment and implementation	JPMO, JMUCIDC, O&M units, contractors	Development and adjustment of the EMP, roles and responsibilities, monitoring, supervision and reporting procedures, review of experience (after 12 months)	Twice - Once prior to, and once after the first year of project implementation	2	20	100	\$8,000
Grievance Redress Mechanism	JPMO, JMUCIDC, contractors, JEPB	Roles and responsibilities, Procedures, review of experience (after 12 months)	Twice - Once prior to, and once after the first year of project implementation	1	15	100	\$3,000
Environmental protection	JPMO, JMUCIDC, contractors	Pollution control on construction sites (air, noise, wastewater, solid waste)	Once (during project implementation)	2	15	100	\$3,000
Environmental monitoring	JPMO, JMUCIDC, O&M units, contractors	Monitoring methods, data collection and processing, reporting systems	Once (at beginning of project construction)	1	10	100	\$1,000
Total estimated cost:							\$15,000

JEPB = Ji'an Environmental Protection Bureau; Ji'an Urban Investment and Development Company, Ltd. (JIDC); JPMO = Ji'an Project Management Office; O&M = operation and maintenance.

27. **Capacity building.** In addition to training for EMP implementation, the project will provide consulting services and training to assist and train the staff of JPMO and JMUCIDC in project management, environmental management, land acquisition and resettlement, procurement, as well as external resettlement and environmental monitoring. The institutional components of the project will also involve training by loan implementation consultants in operation and maintenance of completed facilities. Part of this training will focus on teaching staff how to use a set of indicators to monitor performance of the completed facilities. These indicators will be designed by loan implementation consultants prior to operation start-up.

E. Consultation, Participation and Information Disclosure

28. **Consultation during Project Preparation.** Chapter VII of the EIA describes the public participation and consultation implemented during project preparation.

29. **Future Public Consultation Plan.** Plans for public involvement during construction and operation stages were developed during project preparation. These include public participation in (i) monitoring impacts and mitigation measures during the construction and operation stages; (ii) evaluating environmental and economic benefits and social impacts; and (iii) interviewing the public after the project is completed. These plans will include several types of public involvement, including site visits, workshops, investigation of specific issues, interviews, and public hearings (Table EMP-8). The budget for public consultation is estimated to be \$9,000.

Table EMP-8: Public Consultation Plan

Organizer	Format	No. of Times	Subject	Attendees	Budget
Construction Stage					
JPMO	Public consultation & site visit	4 times: 1 time before construction commences and 1 time each year during construction	Adjusting of mitigation measures, if necessary; construction impact; comments and suggestions	Residents adjacent to components, representatives of social sectors	\$4,000
JPMO	Expert workshop / press conference	As needed based on public consultation	Comments / suggestions on mitigation measures, public opinions	Experts of various sectors, media	\$2,000
JPMO	Resettlement survey	As required by relevant resettlement plan	Comments on resettlement, improvement of living conditions, livelihood, and poverty reduction; comments and suggestions	Persons affected by resettlement and relocation	Included in the resettlement plan update survey budget
Operational Stage					
JPMO, O&M Units	Public consultation and site visits	Once in the first year	Effectiveness of mitigation measures, impacts of operation, comments and suggestions	Residents adjacent to component sites, social sectors	\$1,500
JPMO, O&M Units	Expert workshop or press conference	As needed based on public consultation	Comments and suggestions on operational impacts, public opinions	Experts of various sectors, media	\$1,500
Total budget:					\$9,000

Notes: JPMO = Ji'an Project Management Office; O&M = operation and maintenance.

F. Grievance Redress Mechanism

30. A Grievance Redress Mechanism (GRM) will be established as part of this EMP to receive and manage any public concerns or issues which may arise due to the project. The

GRM comprises: (i) a set of clear procedures developed by the JPMO to receive, record, and address any concerns which are lodged; (ii) specific contact individuals at the JPMO and JMUCIDC, and (iii) the Ji'an Environmental Protection Bureau (JEPB).

31. All contractors and work staff will be briefed by the JPMO on the GRM. Contractors and workers will be instructed to be courteous to local residents and, in the event they are approached by the general public with an issue, to immediately halt their work and report the issue to the foreman. The foreman will immediately report the issue to JMUCIDC or JPMO for action.

32. Multiple means of using this mechanism, including face-to-face meetings, written complaints, hotline number and telephone conversations, anonymous drop-boxes for written comments, and/or e-mail, will be available. All concerns received will be treated confidentially and professionally. The identity of individuals will not be circulated among project agencies or staff and will only be shared with senior staff, and then only when there is clear justification. In the construction period and the initial operational period covered by loan covenants, the JPMO will report progress to the ADB, and this will include reporting complaints and their resolution.

33. Basic steps for resolving complaints are as follows and illustrated in Figure EMP-1.

Step 1: For environmental problems during the construction stage, the affected person (AP) can register his/her complaint directly with the contractors, or through GRM access points (JPMO complaint center hotline, JMUCIDC, JEPB hotline). Contractors are required to set up a complaint hotline and designate a person in charge of handling complaints, and advertise the hotline number at the main entrance to each construction site, together with the hotline number of the JPMO complaint center. The contractors are required to maintain and update a Complaint Register to document all complaints. The contractors are also required to respond to the complainant in writing within 7 calendar days on their proposed solution and how it will be implemented. If the problem is resolved and the complainant is satisfied with the solution, the grievance handling ends here. The contractors are required to report complaints received, handled, resolved and unresolved to the JPMO complaint center immediately, and to JMUCIDC and JPMO monthly (through progress reporting).

Step 2: If no appropriate solution can be found during step 1, the contractor has the obligation to forward the complaint to the JPMO complaint center. The AP may also decide to submit a written or oral complaint to the JPMO complaint center directly, bypassing step 1. A joint hotline for resettlement and environment issues will be established within the JPMO. For an oral complaint, proper written records will be made. Once a complaint is registered and put on file, the JPMO complaints center will immediately notify ADB. The JPMO complaint center will assess the eligibility of the complaint, identify the solution and provide a clear reply for the complainant within five (5) working days. Complaints related to land acquisition and resettlement issues will be directed to the relevant agencies in accordance with the resettlement GRM. The LIEC will assist the JPMO complaint center in addressing the complaint, and replying to the affected person. The JPMO complaint center will also inform the ADB project team and submit all relevant documents. Meanwhile, the JPMO complaint center will timely convey the complaint/grievance and suggested solution to the contractors, JMCIC and/or facility operator. The contractors during construction and the facility operator during operation will implement the agreed upon redress solution and report the outcome to the JPMO complaint center within fifteen (15) working days.

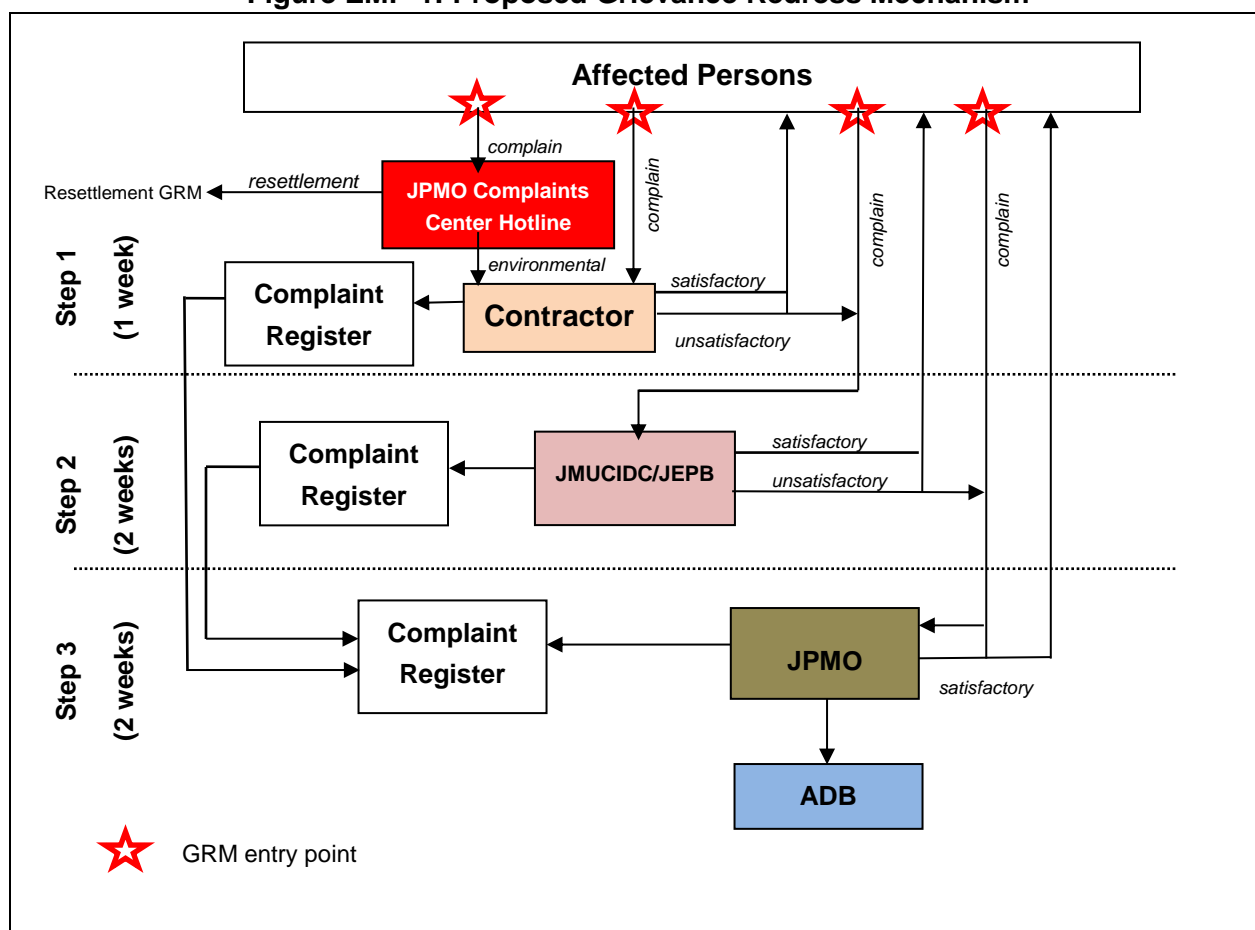
Step 3: In case no solution can be identified by the JPMO complaint center, or the complainant is not satisfied with the proposed solution, the JPMO complaint center will organize, within two (2) weeks, a multi-stakeholder hearing (meeting) involving all relevant stakeholders (including the complainant, JMCIC, contractors, facility operator, JEPB, JPMO). The hearing shall identify a solution acceptable to all, and formulate an action plan.

34. The tracking and documenting of grievance resolutions by JPMO will include the following elements: (i) tracking forms and procedures for gathering information from project personnel and complainant(s); (ii) regular updating of the GRM database by the JPMO Environment and/or Social Specialist; (iii) processes for informing stakeholders about the status of a case; and (iv) procedures to retrieve data for reporting purposes, including the periodic reports to the ADB.

35. At any time, an affected person may contact ADB (East Asia Department) directly, including the ADB Resident Mission in the PRC.

36. If the above steps are unsuccessful, persons who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.²³

²³ See: <http://compliance.adb.org/>.

Figure EMP-1: Proposed Grievance Redress Mechanism

G. Cost Estimates

37. The total cost for EMP implementation comprises six items: (i) mitigation measures (Table EMP-2), (ii) internal environmental impact monitoring by JEMS (Table EMP-4), (iii) external independent EMP compliance monitoring by ESE, (iv) public consultation (Table EMP-7), (v) training (Table EMP-8), and (vi) the LIEC. The total cost is summarized in Table EMP-9 and is \$775,000. The mitigation cost of \$440,000 includes a future cost of \$280,000 for implementation of traffic noise mitigation measures on the BRT corridor and the five urban roads. The LIEC cost of \$71,000 will be funded by the Loan Implementation Consulting services under the ADB loan, while the EA will bear the remaining cost of \$704,000.

Table EMP-9: Estimated Budget for Implementation of the Environmental Management Plan

1. EMP Item	Estimated Cost	
	EA Funded	ADB Funded
Mitigation measures	\$440,000	---
Internal environmental impact monitoring by JEMS	\$140,000	---
External EMP compliance monitoring by ESE	\$100,000	---
External monitoring by LIEC	---	\$71,000
Training	\$15,000	---
Public consultation	\$9,000	---
Sub-total	\$704,000	\$71,000
Total	\$775,000	

38. Excluded from the budget are (i) infrastructure costs which relate to environment and public health but which are already included in the project direct costs and (ii) remuneration for the JPMO environment specialist, consulting packages for the non-structural sub-components, and technical experts on equipment operation and maintenance (covered elsewhere in the project budget).

39. JPMO will bear all internal environmental impact monitoring costs during the construction stage and contracting of ESE for independent monitoring and verification of EMP implementation. The O&M units will bear all internal monitoring costs during the operational stage. Contractors will bear the costs for all mitigation measures during construction, including those specified in the tender and contract documents as well as those to mitigate unforeseen impacts due to their construction activities. The O&M units will bear the costs related to mitigation measures during operation.

H. Mechanisms for Feedback and Adjustment

40. The EMP is a living document. The need to update and adjust the EMP will be reviewed when there are design changes, changes in construction methods and program, unfavorable environmental monitoring results or inappropriate monitoring locations, and ineffective or inadequate mitigation measures. Based on environmental monitoring and reporting systems in place, JPMO (with the support of the LIEC) shall assess whether further mitigation measures are required as corrective action, or improvement in environmental management practices are required. JPMO will inform ADB promptly on any changes to the project and needed adjustments to the EMP. The updated EMP will be submitted to ADB for review and approval, and will be disclosed on the ADB and JMG project website.

GUIDANCE ON FORMAT AND CONTENT FOR SEMIANNUAL ENVIRONMENTAL
MONITORING REPORT – to be updated

*[The highlighted notes in italics are to provide a guide for the content for each section, however,
this can be adapted to meet specific project requirements]*

ADB Loan No. xxxx-PRC: Jiangxi Ji'an Sustainable Urban Transport Project

**SEMI-ANNUAL ENVIRONMENTAL MONITORING REPORT
(No. x)**

Author

Month, Year

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I. INTRODUCTION

A. Description of the Project

[General Project Summary – Location Map/Plan showing Project components, brief summary of each Project component funded by ADB, Project cost and counterpart funding]

B. Purpose of Report

[ADB requirements, loan covenants, time period report covers, previous environmental reports, identify any missing information/gaps]

a. Report Preparation

*[Who prepared **this Report**, who else was involved/consulted during preparation, who has reviewed and approved prior to submission to ADB]*

C. Project Progress

[Overall project progress - Contract award and engineering works in relation to Project Schedule, projections for next 6 months, Updated Project Schedule – document any reasons for change]

II. PRE-CONSTRUCTION ACTIVITIES

[Described the pre-construction activities to prepare for environmental management throughout the project including appointment of external monitor, appointment of the Environmental Supervision Engineer, preparation of bidding documents and environmental clauses in contracts]

III. IMPLEMENTATION OF THE EMP

IV. ROLES AND RESPONSIBILITIES FOR EMP AND MONITORING IMPLEMENTATION

[Appointed and designated environmental management and monitoring staff for each component, term of contracts, allocated person days on site/off-site, roles and responsibilities, lines of communication, reporting structure and frequency (communication flow chart for management of environmental incidents), training and institutional capacity development requirements.]

[Institutional structure/organization chart for environmental management]

D. EMP and Monitoring Implementation Progress

[What monitoring has been carried out during 6 month period, include locations, method, review compliance with Monitoring Plan, discussion of monitoring results and compliance with relevant national standards, identify reasons for non-compliance and implications, identify reasons for any delay in implementation, requirement for additional measures/revision of EMP/Monitoring Plan]

E. Environmental Monitoring Data and Record

[EMP and Monitoring audits carried out and documents and reports that have been produced during the six month period that the Environmental Monitoring Report covers]

F. Cost Estimates

[Include a table – main expenditures – of the latest cost estimates for environmental protection and soil and water conservation]

V. PUBLIC CONSULTATION, DISCLOSURE AND GRIEVANCE REDRESS MECHANISM

G. Public Consultation and Disclosure

[Consultation and Disclosure requirements, consultation and disclosure activities during period that report covers]

H. Project Grievance Records and Resolution

[Overview of Grievance Redress Mechanism, Detail any complaints, resolution, follow-up]

VI. COMPLIANCE WITH EMP REQUIREMENTS

[Overall compliance with EMP, highlight any issues that have arisen]

I. Required Corrective Actions

[Corrective actions required to comply with EMP. Agreed course of action to deliver corrective actions, timescales, responsible parties, reporting requirements]

VII. APPENDICES

VIII. APPENDIX I: STATUS OF EMP COMPLIANCE

[Detailed results of environmental monitoring, environmental training materials, other supporting information that demonstrates compliance with requirements]

[The table below has been copied from the EMP]

Table AI.1: Environmental Management Plan Compliance
Add Table

TERMS OF REFERENCE

A. Project Management and Capacity Building

1. A mix of international and national consultants will be engaged for to provide support of project management to the JMG, JIDC, PMO, and other related agencies in the project during project implementation. The project management services will include training and technical assistance on Asian Development Bank (ADB) procedures and requirements: (i) project performance management system (PPMS); (ii) procurement and disbursement; (iii) construction supervision and contract management; (iv) road safety audit; (v) financial management; (vi) safeguards requirements; and (v) reporting requirements.

2. Eight individual consultants will be engaged, including two international specialists and six national experts. The project management consultants will assist and support the EA, IA and PMO during project implementation with:

- (ii) review of project organization, operation and systems of monitoring and reporting procedures, in accordance with ADB guidelines;
- (iii) assistance in contract bid documentation, bidding and evaluation procedures, and appointment of contractors;
- (iv) assistance in facilitating required approval procedures and financial administration and management;
- (v) advice and training on ADB disbursement procedures and assistance in establishing sound accounting, financial management, and reporting systems in accordance with ADB financial management guidelines and disbursement handbook;
- (vi) finalization of the PPMS and implementation for effective safeguards monitoring and reporting;
- (vii) assistance in technical, managerial, institutional, coordination and financial activities as appropriate for project completion;
- (viii) undertaking road safety audit at stages of technical design, construction, and operation of the BRT and roads;
- (ix) training EA and IA on EMP implementation, review bidding documents on environmental protection requirements, preparing semi-annual reports on environmental monitoring to ADB in accordance with external environmental monitor;
- (x) advice and training on ADB policy and procedural requirements to ensure full compliance, and
- (xi) assistance in developing report formats and establish mechanisms for preparing and submitting the reports specified in the loan and project agreements.

1. Project Management Experts (1 international and 1 national) – Project Implementation Support and Institutional Strengthening

3. These contracts will enable the project to be delivered on time, within budget, in a sustainable manner, and in accordance with prescribed policies, standards, and procedures. It will include: (i) training and assistance on ADB policies and procedures; (ii) development and maintenance of a PPMS; (iii) assistance with procurement and disbursement; (iv) ensuring sound financial and contract management; and (vi) reporting to the PMO and ADB.

4. The Project Implementation Support and Institutional Strengthening consultants will carefully assess the EA and IA capacity to develop and manage the implementation of the

project. Based on this assessment, the consultant(s) will prepare detailed TOR, budgets, and qualification standards for all consulting assignments to support project monitoring, capacity building, and advisory services. These positions may include: (i) road safety specialists; (ii) gender monitoring; (iii) resettlement monitoring; (iv) environmental monitoring; and (v) and resettlement and environmental capacity building. The consulting program should be developed within the general framework presented in this section and the budget available for ADB financed consulting services (see paragraph 50 and associated cost table). The consultants will assist the PMO to fully staff and deliver the implementation support and capacity building program.

5. The consulting services under this subcomponent will include, but not necessarily be limited to the following:

- (i) advice and assistance to the PMO in setting up institutional frameworks, operating procedures, filing systems, and work plans to guide and facilitate project implementation;
- (ii) assistance in setting up a PPMS in accordance with ADB requirements, including establishing baselines and mechanisms for data collection, analysis, and reporting;
- (iii) advice and training on ADB disbursement procedures and assistance to establish sound accounting, financial management, and reporting systems in accordance with ADB guidelines and procedures;
- (iv) assistance in developing reporting formats and establish mechanisms for preparing and submitting the reports specified in the loan and project agreements;
- (v) assistance to prepare and review bidding documents in cooperation with the tendering agent and in accordance with ADB's Procurement Guidelines (2013, as amended from time to time);
- (vi) assistance in contract management, including monitoring construction progress, quality assurance and control, reviewing and certifying contractors' claims for payment, and coordinating daily operations;
- (vii) a technical review of engineering designs in accordance with design codes, standards, and best practices; the consultant shall review design documents especially detailed design, and guide the local designer to improve the design. All the engineering design will need to be approved by ADB before bidding.
- (viii) assistance in developing an effective construction supervision program, and providing guidance and support for its implementation;
- (ix) inspection and supervision of key construction components;
- (x) advice and training on ADB's safeguard policy and operational requirements, including on resettlement, environment, poverty reduction, gender development, and ethnic minorities;
- (xi) assistance to review and update the EMP, and monitor and verify the implementation of the EMP and resettlement plans (RPs) prepared for the project, assistance with the preparation of related reports to ADB, and preparation and submittal to ADB of semiannual environment monitoring verification reports;
- (xii) training on implementation of the measures specified in the EMP;
- (xiii) training on the skills needed for construction supervision, project management, and implementation of social and environmental safeguards;
- (xiv) advice and training on ADB policy and procedural requirements to ensure full compliance; and

- (xv) assistance in developing a four-year training plan (2012–2016), and provision of assistance and coordination to implement the training plan. The training program will cover (a) project implementation management; (b) financial management, cost recovery, and financial sustainability; (c) urban transport and management; (d) urban road maintenance; and (e) BRT operations and management. Training modalities will include workshops and seminars, on-site training, and domestic and overseas study tours.

6. Both international and national consultants will have a degree in engineering at least 10 years working experience, including at least 5 years implementing similar transport project assignments in the PRC or other countries in the region. They will have good English written and oral skills. Experience with similar projects funded by ADB or other development partners is required.

2. Road Safety Specialists (1 international and 1 national) – Road Safety Audit Implementation and Support for Road Safety Action Plan

7. **Task 1: Road Safety Audit Implementation.** The design consultants will ensure that adequate attention is given to the road safety implications of the proposed design and will arrange for an independent Road Safety Audit (RSA) to be undertaken at key stages of the planning and design process as recommended in the RSA guidelines. Design consultants must ensure that appropriate ADB safety checklists are used to carry out the RSA and that the RSA is carried out at the feasibility, outline design, design, and preopening stages. The design consultant should include provision of 3 person-months of RSA inputs within the project team. The safety auditor must be an experienced road safety specialist and independent from the design team.

8. **Task 2: Road Safety Action Plan Support.** The design consultants will ensure that adequate support is given to implement the Road Safety Action Plan (RSAP). The JMG is encouraged to fully adopt a comprehensive RSAP that is updated annually showing objectives, targets, a monitoring program, and actions or measures for implementation. A single entity should assume responsibility for the Action Plan and report to an appropriate Road Safety Committee with representatives from the JMG and Province as well as other concerned entities. The RSAP will pay special attention to the safety of vulnerable users and the associated improvement measures and recommendations. The design consultant should include provision of 3 person-months to support the RSAP delivery. The consultant must be an experienced road safety specialist and independent from the design team.

9. Both international and national consultants will have a degree in road engineering and at least 10 years working experience, including at least 5 years as road safety specialists in similar project assignments in the PRC or other countries in the region. Experience with similar projects funded by ADB or other development partners is preferable.

3. External Environment Monitor (National Consultant)

10. The Loan Implementation Environmental Consultant (LIEC) will be engaged to provide intermittent support to the PMO and Environmental Supervision Engineer throughout loan implementation. The Consultant will provide a total input of 7 months, 2 months per year and 1 extra month to support training, project commencement and completion. The LIEC will be responsible for independent verification of EMP implementation and compliance and preparation of external semi-annual environmental monitoring reports for ADB.

11. The consultant will undertake the following tasks:

- (i) assess environmental readiness prior to implementation according to readiness indicators in Table EMP-3;
- (ii) support PMO in updating the EMP including monitoring plan as necessary to revise or incorporate additional environmental mitigation and monitoring measures, budget, institutional arrangements, etc., that may be required based on the detailed design; submit to ADB for approval and disclosure; ensure compliance with the PRC's environmental laws and regulations, ADB's Safeguard Policy Statement (2009) and Public Communications Policy (2011);
- (iii) if required, update the EIA and EMP reports for changes in the project during detailed design or project implementation (for example if there is a minor or major scope change) that would result in adverse environmental impacts not within the scope of the approved EIA/EMP;
- (iv) assist the JMG and PMO to establish a Grievance Redress Mechanism (GRM), and provide training for the PMO and GRM access points (including, but not limited to, JIDC and contractors);
- (v) conduct regular EMP compliance assessments, undertake site visits as required, identify any environment-related implementation issues, and propose and oversee implementation of necessary corrective actions;
- (vi) review monthly and quarterly environmental supervision and environmental quality monitoring reports to identify progress with implementation of EMP, key issues and actions and compliance performance over six month period;
- (vii) review compliance with EMP, highlight areas of good practice and make recommendations on areas where performance can be improved;
- (viii) prepare semi-annual environmental monitoring and progress reports for ADB, guidance on the format and content of semi-annual environmental management and monitoring reports is included in Appendix 2.;
- (ix) provide training to PMO, JIDC, O&M units and contractors on environmental laws, regulations and policies, SPS 2009, EMP implementation, and GRM in accordance with the training plan defined in the EMP (Table EMP-7); and
- (x) assist the PMO and JIDC in conducting consultation meetings with relevant stakeholders as required, informing them of imminent construction works, updating them on the latest project development activities, GRM
- (xi) prepare environment section of Project Completion Report.

12. A national consultant will be recruited to carry out the tasks under this scope of work.

Consulting contract package	Person-Months	Rate	Total (US\$)
External Environmental Monitor	7	6000	42,000
Travel and per diem			21,000
Reports, Communication, Translation			5,000
Contingency (5%)			3,400
Projected Contract Total			\$71,400

1.	Selection method - ICS (Individual Consultant Selection)
2.	Advertise - September 2014
3.	Begin work - November 2014

13. Qualifications and experience. The Consultant should have experience of environmental management and monitoring for similar internationally-financed projects (minimum of 10 years) with specific experience of delivering training, implementing and auditing construction EMPs.

4. Resettlement Capacity Building Specialist (National Consultant)

14. The consultant will undertake, but not limited, to the following tasks:

- (i) Assist the IA in implementing the RP as endorsed by the EA and disclosed to the affected peoples;
- (ii) Provide training to the IA resettlement staff on ADB's involuntary resettlement policy requirements especially those related to the implementation of the RP.
- (iii) Assist the IA to enhance the consultation and participation of APs including timely information disclosure on various resettlement related issues and policies;
- (iv) Provide guidance to the IA in internal monitoring the RP implementation and preparation of reports;
- (v) Provide guidance to the IA in coordinating with various other agencies involved in RP implementation;
- (vi) Provide assistance to the IA in strengthening its organizational arrangements to effectively implement the RP;
- (vii) Assist the IA to identify gaps in RP implementation and suggest appropriate solutions in a timely manner; and
- (viii) Assist the IA on managing grievance redress mechanism, its publicity amongst the affected people and in record keeping of related grievances and redress measures taken;
- (ix) Provide guidance on enhancing the effectiveness of the livelihood restoration program implementation;
- (x) Assist the IA on assessing needs of vulnerable group of APs and those APs who are significantly affected by land acquisition and relocation and help develop and implement additional mitigation measures to ensure that they do not fall below the pre-project level;
- (xi) Assist the IA to establishing a community based monitoring system, (g) implementing gender measures;
- (xii) Assist the IA in implementation of social development measures outlined under the social development action plan (SDAP) and its reporting in quarterly progress reports;
- (xiii) Assist the IA in developing coordination amongst various agencies responsible for implementation of RP and SDAP.

15. She/he shall have at least 10 years working experience, including at least 5 years as a resettlement specialist in similar project assignments in the PRC or other countries in the region.

She/he shall fully understand ADB's Safeguard Policy Statement (2009) as well as the PRC land acquisition and resettlement policy. She/he will have good English written and oral skills. Experience with similar projects funded by ADB or other development partners is preferable.

5. Gender Specialist (National Consultant) – Gender Action Plan Implementation, Monitoring, and Reporting

16. The national gender specialist will be positioned in the IA to provide guidance and technical assistance to the assigned staff gender focal point for implementation, monitoring, and reporting on the GAP. This will include, but not be limited to, the key tasks below.

17. Key tasks for GAP implementation, monitoring, and reporting are as follows:

- (i) Provide GAP orientation training to key EA/IA staff to brief them on GAP requirements;
- (ii) Coach, guide, and train the assigned staff gender focal point on how to effectively manage implementation, monitoring, and reporting on GAP implementation;
- (iii) Provide guidance and assist delivery of GAP orientation training to contractors to ensure understanding on employment targets for female unskilled labor and reporting requirements;
- (iv) Provide guidance and assist delivery of awareness training for municipal bus company, BRT drivers, and conductors on women's safety needs;
- (v) Develop a detailed implementation and monitoring plan for gender activities, including a standard template for monitoring and reporting GAP results;
- (vi) Assist PMO on how to ensure adequate consultation and participation of women;
- (vii) Ensure the collection of sex-disaggregated statistics for all project activities and guide IAs on how to collect and report with disaggregated data;
- (viii) Continually track and record GAP progress and gender equality results from the project in a systematic and easily accessible form, linked to overall project results;
- (ix) Guide the drafting of the first gender plan implementation progress report, and review the subsequent reports prepared by the staff gender focal point, drawing from information provided by IAs;
- (x) Incorporate GAP performance targets/indicators into regular project monitoring tools/formats, and ensure collection of gender-related data for reporting against gender performance indicators/targets in the overall project design and monitoring framework;
- (xi) Ensure that updated information on the status of GAP implementation is included in all project progress reports;
- (xii) Ensure that all project review missions include consideration of GAP progress, involve consultation with women and men beneficiaries, and include GAP reporting in mission reports, by providing technical support to mission teams and PMO. In particular, support and guide a detailed review of GAP as part of project midterm review;
- (xiii) Assess and draw attention to any inadequacy of GAP provisions and identify remedial actions to revise or strengthen the GAP if required;
- (xiv) Liaise with wider consultant team to ensure that relevant GAP actions are integrated into their respective areas of responsibility; and

- (xv) Provide technical advice to the implementation of gender-specific resettlement mitigation measures (e.g., livelihood restoration support for displaced women farmers).
- (xvi) Work in close coordination with Resettlement Capacity Building Specialist and External Monitor for resettlement plan.

18. She/he shall have at least 10 years working experience, including at least 5 years as a gender specialist in similar project assignments in the PRC or other countries in the region, as well as formal qualifications in gender and development or closely related fields. She/he shall fully understand ADB's Gender Policy, gender and development theory and approaches, as well as the PRC policy and legislative commitments to gender equality and women's empowerment. She/he will have good English written and oral skills. Experience with gender mainstreaming in similar projects funded by ADB or other development partners is preferable.

19. The gender specialist will be recruited at the commencement of the project, and her/his inputs spread intermittently over the life of the project for a total of 8 months.

6. Financial Management Specialist (National Consultant)

20. The tasks of the financial management specialist include, but not limited to the followings

- (i) Assist in overall financial management, e.g. disbursement management, review of withdrawal applications, monitoring and projection of use of loan proceeds and counterpart funds;
- (ii) Review arrangements made by the JIDC and PMO for project budgeting, accounting, internal control, financial reporting and auditing. Assure that these arrangements are adequate for purposes of the financial management of ADB loan funds. Recommend improvements as required to these systems;
- (iii) Develop or introduce financial management software for the project;
- (iv) Plan and implement training programs for JIDC and PMO accounting and finance staff dealing with: (a) ADB procedures for disbursement, procurement, reporting and related matters; (b) Internal financial control including, among others, separation of functions, conflict of interest and other anti-corruption safeguards; and (c) Management of foreign exchange funds.

21. The consultant should have bachelor or master degree in finance management and at least 10 years international experience in similar projects and assignments. He/she must be good at project accounting and familiar with ADB requirements in compiling reports. He/she should be able to work in both English and Chinese. He/she must be capable of providing on-the-job training for staff from PMO and IA and be able to develop and deliver training courses for senior and middle managers.

B. Institutional capacity development for BRT and Urban Planning

22. A consulting firm will be engaged to provide technical support to the IA and BRT related agencies in BRT design, construction, and operation. A mix of international and national consultants will provide about 32 person-months inputs, including 8 person-months international and 24 person-months national. In addition, workshops and seminars will be organized to provide training to the IA, public transport company, bus drivers, and other related agencies. The tasks of the consulting firm will include:

- (i) review of BRT design layout, station detailed design, and operational plan and providing advice to the IA and bus company on the various aspects as needed;
- (ii) assess capacity of bus company and develop a capacity building program for bus company in design, construction, and operation of BRT;
- (iii) developing detailed fare system specifications and review of the technical specifications in bidding documents;
- (iv) developing detailed ITS specifications and review of the specification in the bidding documents;
- (v) developing specification for BRT bus and review of the technical requirements in bidding documents;
- (vi) assistance the IA and bus company in BRT marketing and addressing key issues of branding a BRT system;
- (vii) hybrid-electric vehicle evaluation design and monitoring; and
- (viii) low-carbon urban and transport planning.

23. The detailed TOR for each consultant are listed, but not limited as follows:

1. BRT and Clean Vehicle Specialists (International and National Experts)

24. The vehicle specialist will prepare vehicle specification, including

- (i) Workshop with city government and ADB officials on the development of the vehicle specifications.
- (ii) Develop detailed vehicle specifications including the following components for the each vehicle type:
 - (a) Specification introduction,
 - (b) Specification summary,
 - (c) Weights and dimensions,
 - (d) Body,
 - (e) Interior,
 - (f) Mechanical,
 - (g) Electrical, and
 - (h) Intelligent Transportation Systems (ITS).
- (iii) Develop the following additional sections for specification:
 - (a) Driver training program,
 - (b) Maintenance training program,
 - (c) Warranty provision,
 - (d) List of spare parts (initial year of spare parts),
 - (e) List of required tools, software, and diagnostic equipment,
 - (f) Supply of vehicle manuals and instructions, and
 - (g) Vehicle approval process and vehicle homologation/licensing.

25. The vehicle specialist will prepare tender documents, addressing:

- (i) Workshop with city government officials and ADB the development of the vehicle tender documents.
- (ii) Develop a section describing the items to be scored qualitatively within the tendering process, which may include the following items:
 - (a) Design parameters (body and structure material, number of seats, seating materials, interior layout, window types, flooring materials, wheel covers, and placement of exhaust outlet);
 - (b) Body aesthetic design;
 - (c) Emission and noise standards;
 - (d) Projected delivery schedule;
 - (e) Payment schedule;
 - (f) Percentage of local content;
 - (g) Pricing and quality of major replacement parts;
 - (h) Experience of key personnel for driver training and maintenance training;
 - (i) Vehicle exterior drawings;
 - (j) Vehicle interior drawings;
 - (k) Proposed maintenance schedule of vehicles; and
 - (l) Performance documentation.
- (iii) Develop tender and contract documents that fully reflects the agreed upon specifications and meets the procurement rules of the City, including the following sections:
 - (a) Tendering procedures,
 - (b) Returnable schedules,
 - (c) Contract,
 - (d) Pricing sheet,
 - (e) Technical specifications, and
 - (f) Annexes.
- (iv) Include in the contract document the financial penalties for the late delivery of the vehicles.
- (v) Provide management and technical support during tendering clarification period with tenderers and during tendering evaluation.
- (vi) Provide technical support during testing and commissioning of vehicles.

26. Available information about that the fuel consumption and emissions performance of hybrid-electric buses versus conventional buses shows that performance varies widely with local conditions; between BRT and in-traffic conditions; with speed and congestion levels; and from driver-to-driver. Most available studies report in-service performance for a specific set of local conditions, but do not control for the effect of other variables. As a result, it is difficult to separate the effects of different factors (such as congestion levels, BRT versus in-traffic operation, etc); compare different studies; and draw general valid conclusions. This Technical Assistance (TA) will conduct and report on a set of carefully-designed and controlled trials of hybrid buses under a range of operating conditions in Ji'an, using scientific method. The results will be of broad interest and substantial value to other cities in China and elsewhere that are evaluating the likely fuel consumptions and GHG emissions performance of hybrid buses under their local conditions. The consultants will:

- (i) Design and supervise a program of controlled scientific trials of hybrid buses under a range of conditions. Design and establish databases for recording and analyzing the bus performance data. Collate, quality control, and record the bus performance data.
- (ii) Analyze the results to extract general conclusions regarding the GHG performance of hybrid buses under a range of conditions

- (iii) Establish procedures for ongoing routine monitoring of the bus performance after the completion of the TA.
- (iv) Document the findings in English and Chinese in a range of forms suitable for professional and industry audiences. Assemble the information resources and data created by this TA in a form suitable for sharing broadly through ADB, GEF and other online knowledge sharing portals.

27. The international BRT and Clean Vehicle Specialist will preferably have a master's degree in mechanical engineering or a related field; a minimum of 15 years practical experience in the bus industry; previous experience in the PRC; and Mandarin language skills. He or she should have broad practical experience of a range of clean bus technologies and the factors affecting clean bus performance. The national specialist will preferably have a master's degree in mechanical engineering or other relevant field, and a minimum of 8 years of relevant post-university experience. He or she must be able to demonstrate strong research skills and the ability to design a data collection and database system; and analyze, interpret and document results from the bus performance monitoring program. All national consultants should preferably have good spoken and written English language skills.

2. BRT Fare System, ITS Specifications and Tender Documentation Specialists (International and National Experts)

28. The fare system specialist will prepare a technical specifications for fare system, including

- (i) Workshop with city government officials on the development of the fare system technical specifications.
- (ii) Develop detailed fare system specifications including the following components: (a) Specification introduction (background, design principles, open standards for fare system, payment media, fare regime structure, tariff levels); Technical requirements (software requirements, hardware requirements, functional requirements, integration requirements); (b) Specification summary; (c) Issuance sub-system; (d) Top-up sub-system; (e) Fare payment sub-system; (f) Portable validators; (g) In-vehicle fare equipment (fare validator unit, fare cash box); (h) Central information sub-system (functional requirements, technical requirements, reporting requirements, operational requirements, data storage and back-up requirements, ITS interface); (i) Web sub-system; and (j) Communications sub-system.
- (iii) Develop the following additional sections for specification: (a) Initial management of system; (b) Warranty provision; (c) List of spare parts (initial year of spare parts); (d) List of any required tools, software, and diagnostic equipment; (e) Supply of manuals and instructions; (f) System testing and commissioning process; and (g) System approval process.
- (iv) Workshop with city officials on the development of the fare system tender document.
- (v) Develop a section describing the items to be scored qualitatively within the tendering process, including: (a) System effectiveness against fare evasion; (b) Ease of use and convenience for special needs passengers (wheelchair users, parents with prams, elderly, etc.); (c) Aesthetic design; (d) Durability of materials and ease of cleaning; (e) Projected delivery schedule; (f) Payment schedule; (g) Percentage of local content of fabrication; (h) Pricing and quality of

- major replacement parts; (i) Proposed maintenance schedule of system; and (j) Performance documentation.
- (vi) Develop tender and contract documents that fully reflect the agreed upon specifications and meets the procurement rules of the City, including consideration of the following sections: (a) Definition of terminology, (b) Tendering procedures, (c) Returnable schedules, (d) Contract, (e) Pricing sheet, (f) Technical specifications, and (g) Annexures.
- (vii) Include in the contract document the financial rewards and penalties that will ensure a high-quality delivery of the contract.
- (viii) Provide management and technical support during tendering clarification period with tenderers and during tendering evaluation.
- (ix) Provide technical support during testing and commissioning of equipment.

29. Tasks to support the implementation and initial operation of the ITS and Control Center equipment are as follows:

- (i) Workshop with city government officials on the development of the ITS system (i.e., control center, station ITS equipment, vehicle ITS equipment, and depot ITS equipment) technical specifications.
- (ii) Develop detailed ITS specifications including consideration of the following components:
 - (a) Specification introduction (background, design principles);
 - (b) Specification summary;
 - (c) Control center (main control screen to oversee operations, vehicle dispatch work stations, CCTV monitoring stations (if appropriate), security dispatch work stations (if appropriate), software/hardware for vehicle tracking, software/hardware for vehicle scheduling, software/hardware for signal priority at intersections);
 - (d) Management of Control Centre hardware and software;
 - (e) Station ITS (CCTV cameras with streaming to control center and to station kiosk , dynamic electronic arrival times displayed on VMS with audio chime to announce vehicle arrival, station public address system, automatic synchronized opening mechanism for sliding door at vehicle-station interface, infotainment LCD screens, high bandwidth communications link to control center);
 - (f) Management of station ITS system;
 - (g) Management of feeder stations ITS system;
 - (h) Depot ITS (CCTV cameras with streaming to control center, alarm monitoring of depot fence line, broadband wireless LAN (WLAN) access points for transfer of video and data from vehicles);
 - (i) Vehicle ITS (Vehicle Logic Unit (VLU), Automated Vehicle Location (AVL), communications unit (GPRS, Wireless LAN modem, antennas), traffic signal priority equipment, Driver Data Terminal (DDT), Digital Video Recorder (DVR));
 - (j) Digital Video Recorder (DVR);
 - (k) Network design;
 - (l) Communications system and linkage; and
 - (m) System maintenance.
- (iii) Develop the following additional sections for specification: (a) Warranty provision, (b) List of spare parts (initial year of spare parts), (c) List of any required tools,

- software, and diagnostic equipment, (d) Supply of manuals and instructions, (e) System testing and commissioning process, and (f) System approval process.
- (iv) Workshop with city government officials on the development of the ITS system tender document.
- (v) Develop a section describing the items to be scored qualitatively within the tendering process, including: (a) Aesthetic design, (b) Durability of materials and ease of cleaning, (c) Projected delivery schedule, (d) Payment schedule, (e) Percentage of local content of fabrication, (f) Pricing and quality of major replacement parts, (g) Proposed maintenance schedule of system, and (h) Performance documentation.
- (vi) Develop tender and contract documents that fully reflects the agreed upon specifications and meets the procurement rules of the City, including consideration of the following sections: (a) Definition of terminology, (b) Tendering procedures, (c) Returnable schedules, (d) Contract, (e) Pricing sheet, (f) Technical specifications, and (g) Annexes.
- (vii) Include in the contract document the financial rewards and penalties that will ensure a high-quality delivery of the contract.
- (viii) Provide management and technical support during tendering clarification period with tenderers and during tendering evaluation.
- (ix) Provide technical support during testing and commissioning of equipment.

30. The international specialist will preferably have a master's degree in mechanical engineering or a related field; a minimum of 15 years practical experience in the bus industry; previous experience in the PRC; and Mandarin language skills. He or she should have practical experience with BRT systems and ITS applied to urban public transport. The national specialist will preferably have a master's degree in mechanical engineering or other relevant field, and a minimum of 8 years of relevant experience. He or she must have experience with BRT system implementation, equipment and relevant IT technologies. All national consultants should preferably have good spoken and written English language skills.

3. Implementation Support for Bus Rapid Transit Experts (International and National Experts)

31. The Implementation Support consultants will carefully assess the (i) the BRT detailed design TOR and the experience and qualifications of the detailed design firm, (ii) the in-house capacity of the municipal bus company to plan and operate BRT, and (iii) the EA and IA capacity to develop and manage the implementation of the BRT component. Based on this assessment, the consultant will prepare detailed TOR, budgets, and qualification standards for all consulting assignments to support implementation and initial operations of the BRT.

a. Bus company capacity building tasks include:

- (i) Develop operational protocols for the BRT system and the bus management system at the control center.
- (ii) Provide a training program on operational procedures and control for the bus company.
- (iii) Evaluate the financial accounting and management procedures of the bus company and make recommendations on financial management tools.
- (iv) Provide training on financial accounting and management with the bus company.

- (v) Evaluate the current organizational structure and staffing of the bus company and make recommendations on staffing additions to meet the requirements of the new BRT system.
- (vi) Workshop on the staffing recommendations with the bus company.
- (vii) Develop security protocols for the secure management of the system and the provision of secure and safe services to the customer, including the mechanisms by which the system's security integrates with local law enforcement officials and traffic police.
- (viii) Workshop on the security protocols with the City and the bus company.
- (ix) Develop a manual on procedures for station services staff, including the following: (a) Fare collection, (b) Security, (c) Cash collection, (d) Station cleaning and light maintenance, (e) Station waste management, and (f) Busway landscaping.
- (x) Develop the incentives required to ensure bus company staff achieve a high-quality and customer service-focused performance.
- (xi) Assist the bus company in operationalizing the performance incentives.

b. City capacity building tasks include:

- (i) Evaluate the current staffing of the city government with respect to public transport oversight and make recommendations on staffing additions to meet the requirements of the new BRT system.
- (ii) Workshop the staffing recommendations with the city government.
- (iii) Identify potential performance-based incentives that the City can utilize in evaluating and improving the quality of the system.
- (iv) Assist the city government in implementing the performance-based incentives for quality bus operations.

c. Prepare operational plan:

- (i) Evaluate the route network design and suggest opportunities for enhanced revenue gains and cost reductions.
- (ii) Assist in optimizing the operational characteristics and design.

d. Preliminary and detailed design:

- (i) Evaluate the design layout options, especially in regard to any road widening options at stations.
- (ii) Review station detailed design and make recommendations.
- (iii) Review infrastructure costing assumptions and provide feedback and recommendations.

e. Financial model:

- (i) Review the type of model being utilized for the operational cost and revenue analysis.
- (ii) Provide recommendations for improving the model.
- (iii) Provide recommendations on the types of scenarios to run in the model.
- (iv) Review the completeness of the cost categories addressed.
- (v) Evaluate the input cost values and make recommendations.

f. BRT Marketing and Communications Advisory

- (i) Develop the capacity of the national consultant team to address the particular key issues of branding a BRT system.
- (ii) Develop criteria for evaluating a successful BRT brand.
- (iii) Review and provide feedback to the work of the consultant team.
- (iv) Provide technical capacity training to the national consultant team on devising a marketing campaign around the launch of a BRT system.
- (v) Review and provide feedback to the work of the consultant team.
 - (vi) Identify all relevant stakeholders with an interest in the new public transport system, including consideration of the following:
 - (a) City officials,
 - (b) District officials,
 - (c) Provincial officials,
 - (d) Traffic police,
 - (e) Public transport users,
 - (f) Special groups of public transport users (physically disabled, students, women, etc.),
 - (g) Car and motorcycle users,
 - (h) Existing formal and informal public transport operators,
 - (i) News media,
 - (j) Business trade associations,
 - (k) Business owners,
 - (l) Land and property owners,
 - (m) Community organizations, and
 - (n) General public.
- (i) Develop key messages and informational products for the major stakeholders.
- (ii) Determine the mediums by which these messages are best disseminated to the stakeholders (e.g., seminars, one-on-one sessions, community sessions, brochures, videos, newspaper editorials, newspaper and magazine advertisements, radio, television, etc.).
- (iii) Produce a Communications Plan based on the findings of the above.

g. System branding:

- (i) Develop the system branding, including:
 - (a) System name,
 - (b) Logo,
 - (c) Tag-line, and
 - (d) Colors and font.
- (ii) Workshop on the various branding options with city government officials and assist the City in deciding the choice of brand.
- (iii) Conduct focus groups with a representative sampling of the public to evaluate different branding options; amongst the groups to be included in the focus groups are:
 - (a) Current public transport users,
 - (b) Current private vehicle users,
 - (c) Low-income communities,
 - (d) Medium- and high-income communities, and
 - (e) Produce a branding report with a summary of the results from workshops and focus groups.

h. Media relations:

- (i) Assign a team member to assist with media relations on the system.
- (ii) Handle media enquiries on the project over a 12-month period.
- (iii) Produce at least three press releases over the course of the system planning.

i. System advertising:

- (i) Estimate the potential expected revenues from advertising:
 - (a) Inside stations, and
 - (b) Inside vehicles.
- (ii) Produce a specification and tender document for bidding firms to provide revenue-generating advertising on stations and vehicles.

j. Customer communications:

- (i) Workshop on the content of a system web site with city government officials; the web site content is likely to include:
 - (a) System home page,
 - (b) Description of project,
 - (c) Route maps,
 - (d) Station location descriptions,
 - (e) Common questions and answers (Q&As),
 - (f) Images from other systems,
 - (g) User information such as operating hours,
 - (h) Contact information, and
 - (i) User input and feedback.
- (ii) Develop and implement the system web page.
- (iii) Manage the web site for the initial year of its publication.
- (iv) Identify the various means by which customers may provide comment and feedback on the system; this will likely include:
 - (a) Web site/ email comments,
 - (b) Telephone comments, and
 - (c) Written letters.
- (v) Identify the most likely queries to be posed by members of the public.
- (vi) Develop a set of Questions and Answers (Q&As), which will be placed on the website as well as provided to telephone assist personnel.

k. Implementation of marketing campaign:

- (i) Manage and implement the first year of the system's marketing campaign.
- (ii) In conjunction with the city government, design a launch event for the initiation of the system; the launch event may include the following:
 - (a) Music and entertainment,
 - (b) Press release and press package,
 - (c) Statements from the political leadership,
 - (d) Ribbon cutting, and
 - (e) Initial operations with the participation of political leaders and local celebrities.
- (iii) Script, manage, and implement all aspects of the launch.

32. The international specialist will preferably have a master's degree engineering, transport planning or a related field; a minimum of 10 years practical experience managing BRT implementation. The national specialist will preferably have a degree in business, marketing, communications or other relevant field, and a minimum of 8 years of relevant experience with BRT system implementation and developing communications and marketing plans for transport projects in the PRC. All national consultants should preferably have good spoken and written English language skills.

4. Transport Planner, Urban Planner, Cycle Network Specialists (international and national experts), Traffic Engineer (National), and Financial Specialist (national)

33. The BRT project will transform public transport in Ji'an and can be a catalyst for urban development/renewal. This output will build local capacity in low carbon transport and urban planning. It will prepare a roadmap for integration of transport, land use and access planning in Ji'an, and identify demonstration projects for implementation by the JMG. The tasks for the experts are as follows:

- (i) Assess how the BRT project can be a catalyst for promoting transport/land use integration and transit-oriented development (TOD) from a broad urban planning perspective. Identify specific transit-supportive development opportunities and work with the JMG to establish mechanisms for mobilizing investment in TOD through public and private sector channels.
- (ii) Review the existing and planned greenways and NMT facilities in Ji'an, and identify opportunities for better planning and integration of NMT facilities with each other and with transit facilities.
- (iii) Develop planning principles for NMT integration, and identify specific opportunities for small scale investments by the JMG to implement these principles.
- (iv) Prepare a roadmap for integration of transport, land use and access planning in Ji'an.
- (v) Conduct workshops in Ji'an on key topics in low carbon planning principles (TOD, NMT integration, etc), involving representatives of Ji'an city government agencies, neighboring cities, Jiangxi provincial officials, and other invited stakeholders. Assemble information resources created by this TA in a form suitable for sharing broadly through ADB, GEF and other online knowledge sharing portals.

34. The international specialists will preferably have a master's degree in transport planning, urban planning, or a related field; a minimum of 15 years practical experience in urban/transport planning; previous experience in the PRC; and preferably Mandarin language skills. The national Transport Planner, Urban Planner and Traffic Engineer will preferably have a master's degree in engineering, urban/transport planning or a related field, and a minimum of 10 years practical experience in PRC urban/transport planning. The national Financial Specialist must be a graduate of accounting, finance, or related field holding internationally recognized accounting certification, and with a minimum of 8 years of experience. All national consultants should preferably have good spoken and written English language skills.

C. Resettlement Plan Monitoring and Evaluation (performance based US\$120,000 over the period of 5 years 2015-2020)

35. According to ADB's SPS 2009 on involuntary resettlement, the resettlement work of this project will be subject to external M&E. The monitoring will ensure that the resettlement processes are being implemented in accordance with the requirements set out in the RP. The external M&E will also undertake an evaluation of changes in peoples' standard of living as a result of the project and project-related LAR activities. A TOR is drafted and a firm/institute with 8–10 years of relevant social and resettlement experience will be engaged by CQS method. The external monitor will work in close coordination with the Resettlement Capacity Building Specialist and Gender Specialist to be contracted for the capacity building.

36. M&E reports will be submitted to ADB and FIDC regularly twice a year during the implementation period and once a year following project completion. Through external M&E, ADB and the EAs can fully understand if the LAR work is implemented on schedule and according to the quality standard, point out existing issues, and propose suggestions for improvement.

1. Scope and methods of external monitoring

a. Baseline Survey

37. The external monitoring agency will undertake a baseline survey of the villages affected by land acquisition in the project, and collect baseline data on the production level and standard of living of the monitored displaced households (standard of living, production, and income levels). The survey of production level and standard of living will be conducted semiannually to track variations. The survey methods include follow-up survey of sample households (minimum sample size: 10% of households affected by land acquisition, 20% of households affected by house demolition, 50% of affected villages; the households will be sampled randomly). A statistical analysis will be made on this basis for evaluation.

b. Regular Monitoring and Evaluation

38. During the RP implementation, the external monitoring agency will perform regular follow-up resettlement monitoring of the following activities twice a year through field observation, follow-up survey of the sample households, and random interview with the displaced persons. The external monitoring agency will monitor:

- (i) the progress of disbursement of compensation for LAR and house demolition;
- (ii) the progress of selection and preparation of resettlement sites including provisions for civic amenities, construction of new houses, and adequacy of construction;
- (iii) institutional capacity of the resettlement office—adequate trained staffing, office space and equipment, and provisions for ongoing training;
- (iv) financial capacity of the PMO, particularly the budgetary arrangements and cash flow for resettlement activities;
- (v) the process of public participation and consultation, ensuring that the public participation and consultation schedule is being followed and outcomes are being incorporated in resettlement implementation process;

- (vi) the functioning of the GRM;
- (vii) the progress of livelihood rehabilitation plans and training, restoration of productive assets, and livelihood systems;
- (viii) rehabilitation of affected shops;
- (ix) that the vulnerable groups are being provided support in accordance to the criteria set out in the RP;
- (x) the progress of restoration and reconstruction of infrastructure and special facilities;
- (xi) implementation schedule for the RP activities; and
- (xii) the overall RP implementation process and if any significant involuntary resettlement are identified, the agency will prepare a corrective action plan to address such issues.

39. In addition, the external monitor will be responsible for verifying the internal monitoring reports of IA on implementation and progress of the RP. These internal monitoring reports are prepared by the IA as part of the quarterly progress report (under PPMS).

40. On the basis of the baseline survey, the external monitoring agency will evaluate the project impacts and will provide a “without” and “with” project comparative analysis.

c. Monitoring Indicators

41. The following indicators shall be monitored and evaluated in accordance with principles, entitlements, and rehabilitation strategies/plans set out in the RP:

- (i) Progress: including preparation, implementation of land acquisition, house demolition, resettlement site construction, housing relocation and rehabilitation of livelihoods and living conditions;
- (ii) Quality: including resettlement implementation, civil construction quality, timeliness, minimal disturbance/inconvenience and transition time, and degree of APs' satisfaction;
- (iii) Entitlements: timely allocation of full compensation entitlements and proper and timely use of funds, and adequate and timely availability of funds for resettlement site construction;
- (iv) Economic/income conditions: household economic development before and after resettlement, including assets, production materials, subsistence materials, income, savings and debts, income generation potential, etc.;
- (v) Living conditions: living environment before and after resettlement, including traffic, education, sanitation, social services, commercial service facilities, etc. in the new resettlement sites;
- (vi) Livelihood/employment: change in livelihood (income sources) and employment, including employment rate, assistance to the different APs, especially for women, and vulnerable APs, and seriously-affected households, such as those at risk of impoverishment due to land loss or housing loss; training and skill enhancement;
- (vii) Community development: local economy in resettlement sites, environmental development, neighborhood relations and safety, and public opinions (by gender and age groups) after resettlement; and
- (viii) Conditions of the vulnerable groups and seriously-affected households: including before and after situations of those people.

d. Monitoring and Evaluation Method

42. The external monitoring agency will use both quantitative and qualitative methods to undertake the M&E such as:

- (i) Surveys – questionnaire surveys based on random sampling with a minimum sample size of 10% of households affected by land acquisition, 20% of households affected by house demolition and 50% of the affected villages. These surveys will be done on annual basis to assess the impact on yearly basis. Out of the above indicated survey population, the external monitor will select a suitable sample size and will undertake follow-up surveys by using tracer survey method. It will require following the same respondents on a yearly basis to assess the project impacts.
- (ii) Qualitative interviews and focus group discussions – with project affected persons, village and community representatives, officials in PMO and other government departments that are involved in the resettlement process.
- (iii) Along with written materials, photos, audio and video records, real objects shall also be used.
- (iv) Reporting – An external monitoring report framework is provided as appendix that should be followed for reporting.

43. The RP monitoring report will include:

- (i) Summary of findings and conclusion of investigations and evaluation;
- (ii) Major problems identified (existing and potential);
- (iii) Recommended mitigation or prevention measures which need to be taken; and
- (iv) Assessment of previous follow-up actions.

44. Reports will be submitted to ADB every 6 months during the resettlement implementation. After the preparation of resettlement completion reports, annual evaluations will be conducted for 2 years, or until all issues have been successfully resolved. The final evaluation report should summarize monitoring results and should clearly establish whether resettlement has been successfully completed. SDAP/GAP Implementation verification: Progress of SDAP and GAP implementation will be reported by the IA through its internal monitoring reports prepared on a quarterly basis as part of the PPMS. The external monitor will review and verify these quarterly reports and will prepare a consolidated annual report as an appendix of one of the monitoring report and will submit it to the ADB.

45. All reports will be provided in English and Chinese. It should be ensured that information on the progress and status on all aspects of LAR activities will be provided to the external monitor for verification, including records of grievances.

e. Consultant Specifications and Inputs

46. The specialist shall have a degree in a relevant subject (sociology, anthropology, or related subject) with 10 years of experience in M&E of projects funded by ADB or similar 40 international development funding agencies. The consultant's inputs will be spread intermittently over the life of the project for a total of 12 months.

2. Monitoring Report (Resettlement Plan Implementation) Format

a. Executive Summary

47. A brief summary of the report – the monitoring period, monitoring methods, monitoring outcomes, follow-up actions

b. Table of Contents

c. Project Description and Background of the Report

48. A brief description of the project, scope of IR impacts, measures undertaken to deal with the IR project (RP); implementation status of the RP; monitoring of RP implementation.

d. Monitoring Methodology:

49. Description of how the monitoring of undertaken

- (i) review of records (provide a list of the records reviewed); consultations with implementing and other line agencies (provide a list of such persons consulted/interviewed)
- (ii) site visits (provide the lists of sites visited such as resettlement sites, house plots, or impacted villages/townships); and observations made (what is the monitor's first hand impression of these visits) – substantiate with photos (as Annexure to the report)
- (iii) Affected people consulted (provide a list/name of the affected people consulted); outcome of these consultations

50. Analysis: based on the above (and any other information) analyze the RP implementation progress and effectiveness. Use both quantitative and qualitative evidences.

3. LAR Status (present data in tabular form):

51. Land acquisition. Status at the time of reporting:

- (i) how much of the land has been acquired (by different categories as specified in the RP)?
- (ii) Table as example: Please add a column next to 'Acquired' indicating % of the land acquired that of the total planned land.

Land Type (Follow the land classification as provided in the RP)		First semester		Second semester		Total (till the end of the year)		Remarks
		Planned (area-mu)	Acquired	Planned (area-mu)	Acquired	Planned (area-mu)	Acquired (% of total)	
Private Land								
House plot								
Farmland	Irrigated land							
	Dry land							
	Orchard/garden land							
Forestland								
Water surface/water works								
Others								
Collective Land (By Category)								
Farmland	Irrigated land							
	Dry land							
	Orchard/garden land							
State owned land (By Category)								

Explanatory Text:

- (i) On status of land acquisition – elaborate if it has followed the provisions made in the RP
- (ii) Variations – explain variations (if any) and the causes for such variations. Clarify if a RP update is required and in that case outline the proposed actions. Suggest corrective measures and indicate actions taken to implement the corrective measures.
- (iii) Compensation fully paid prior to land acquisition and at least at the rates prescribed in the RP.
- (iv) Any outstanding issues?

4. House demolition:

- (i) Status at the time of reporting – how many relocation household demolished (by categories as specified in the RP)

Structure (Follow the house classification as provided in the RP)	Unit	Semester one		Semester two		Total		Remark
		Area (planned)	Demolished	Area (planned)	Demolished	Area (planned)	Area Demolished	
Brick-concrete	m ²							
Brick-tiles	m ²							
Earth-tiles	m ²							
Wood-tiles	m ²							
Stone-tiles	m ²							
Simple structure	m ²							
Brick-iron tiles	m ²							
brick-asbestos tiles	m ²							
Earth wall-asbestos tiles	m ²							
Total	m ²							

Explanatory text:

- (i) On status of house demolition – elaborate and verify that it has followed the provisions made in the RP
- (ii) Variations - explain variations (if any) and the causes for such variations. Clarify if a RP update is required and in that case outline the proposed actions. Suggest corrective measures and indicate actions taken to implement the corrective measures.
- (iii) Compensation fully paid prior to land acquisition and at least at the rates prescribed in the RP
- (iv) Affected household allowed the use of material from dismantled house
- (v) Any outstanding issue

LAR Impact Status:

Impacts (For land loss follow the land classification as in the RP)		Semester one		Semester two		Total		Remark
		HH Affected (planned)	HH Affected (actual)	HH Affected (planned)	HH Affected (actual)	HH Affected (planned)	HH Affected (actual)	
Loss of arable land								
Loss of Dry land								
Loss of Orchards								
Loss of forestland								
Total - Affected by land loss								
Loss of house/structures	Households affected by Relocation							
	Partial loss of structure not requiring relocation							
Total without overlapping (land loss + loss of structure)								
Severely Affected	Households losing 10% or more of their productive assets							
Vulnerable category	Poor, disabled, women headed etc (as per the definition in the RP)							

Explanatory Text:

- (i) On the status of LAR impact - elaborate and verify that it is in accordance to the impacts outlined in the RP
- (ii) Variations - explain variations (if any) and the causes for such variations. Clarify if a RP update is required and in that case outline the proposed actions. Suggest corrective measures and indicate actions taken to implement the corrective measures.
- (iii) Clarify if the variation in 'impact' will require updating the 'livelihood restoration plans' and if such updating is required propose measures and indicate actions taken to update the 'livelihood restoration plans'.
- (iv) Any outstanding issues.

Entitlements and Compensation Paid:

Type of loss (Follow the classification provided in the RP)		Semester one		Semester two		total		Remarks
		Compensation rates (planned)	Compensation rates (paid)	Compensation rates (planned)	Compensation rates (paid)	Compensation rates (planned)	Compensation rates (paid)	
Land Loss								
Agricultural land								
Dry land								
Orchards								
Loss of House/structure								
Brick-concrete								
Brick –tiles								
Earth tiles								
Transitional subsidy								
Vulnerable category people								
Seriously Affected (losing 10% or more of the productive assets)								

Explanatory Text:

- (i) Verify that the compensations are paid in accordance to the compensation standards and disbursal provisions outlined in the entitlement matrix. Clarify the disbursal of compensation funds and verify that the compensation has been actually paid to the affected households and not just to the village committees.
- (ii) Variation – explain variations (if any) and if required suggest corrective measures and indicate actions required to implement corrective measures.
- (iii) Any outstanding issues

5. Temporary land occupation (as of the time of reporting):

	Semester one	Semester two	Total	Remarks
Temporary Land Occupation Hectare or Mu (planned)				
Temporary Land Occupied (Actual)				
No. of Affected Households				
No. of Households Compensated (include % figures as well)				
Compensation rates planned				
Compensation paid @ rate of				
Land Restored (Hectare or Mu) (include % figures for land restored)				
No. of Households Reoccupied the land (include % figures as well)				

Explanatory Text:

- (i) On status of temporary land occupation – elaborate if it has followed the provisions made in the RP
- (ii) Variations – explain variations (if any) and the causes for such variations. Suggest corrective measures and indicate actions taken to implement the corrective measures.
- (iii) Compensation fully paid prior to land occupation and at least at the rates prescribed in the RP.
- (iv) Household satisfaction – on land restored – timely (by the end of 2 years) and up to the quality;
- (v) Any outstanding issues?

6. Compensation Paid (for all LAR activities):

Endorsement: External Monitor to endorse that

- (i) the compensation was paid in full prior to dispossession and relocation
- (ii) Compensation standards:
 - Are in accordance with the standards (land acquisition, relocation, attachments etc.) outlined in the RP
 - Verifying if the standards (houses) meet the 'replacement cost' criterion;
 - Modes of disbursement – one time or installments; prior to the LAR activities; cash or bank account payment; village communities or directly to the APs.

Institutional arrangements and capacity

- Safeguards Unit – whether established or not; how many staff; coordination between staff and different line agencies;
- Capacity of resettlement staff - level of experience; training provided and training requirements;
(Outline any lacuna in institutional arrangements, implementation capabilities, and suggest measures to build capacity)

Resettlement Sites (wherever required)/plots

Status of resettlement sites if being developed in a concentrated manner (Replacement housing) -

- how many sites;
- Level of preparedness – ground leveling; road connectivity; water, electricity and sewage facilities; other amenities such as availability of schools, primary health clinics, community centers etc;
- -Coordination between various agencies involved in resettlement site development;
- Construction progress over time;

Status of housing plots –

- availability of individual plots; distance from the original houses; community character;
- Housing plot distribution status;
- Level of preparedness – ground leveling; road connectivity; water, electricity and sewage facilities; other amenities such as availability of schools, primary health clinics, community centers etc;
- Coordination between various agencies involved;
- AP responses;
- Host community attitude and response;

Transition Period

- Number of household in transition;
- Length of transition period;
- Transition subsidy – whether being provided as per the provisions in the RP;
- Assessment of transition period including if the transition subsidy is sufficient;
- Outstanding issues related to the transition period, corrective measures and actions taken.

Social/community Preparedness

- APs concerns about relocation – resettling in a new environment;
- Host community concerns about resettlement (if applicable)
- Implementation of any systematic program to prepare the APs in a new environment and surroundings (required, being undertaken, proposed)

Budget and flow of funds:

- Counterpart fund availability – status of fund acquisition (readily available/ under negotiations/ unlikely)
- Yearly budget allocation based on resettlement plan implementation schedule;
- Any issues related to non-availability of funds; corrective measures;

Livelihood restoration measures

- Land readjustment at village level (wherever applicable) – status
- Employment provided by project – no of APs employed (gender, ethnicity disaggregated and by degree of impact – significantly affected and the vulnerable households)
- Training provided – area of training, how many APs provide training (gender, ethnicity disaggregated and by degree of impact – significantly affected and the vulnerable households)
- Awareness building – effective and rational use of compensation; available opportunities in employment and skill enhancement;
- Other measures – endowment/pension schemes – how many APs; response to the schemes;
- AP satisfaction;
- Assessment of effectiveness of ‘livelihood restoration measures’ – improvement in AP’s economic status.

Vulnerable People:

- Measures taken – as per those outlined in RP entitlement matrix
- Status of vulnerable people

GRM:

- Established; publicized to the people; approachable:
- Record keeping – number of grievances reported; resolved;
- Effectiveness – aggrieved parties satisfaction;

Consultation and Participation:

- C&P details – mode, frequency (number of public consultations held), objectives
- No of participants – sex desegregated
- Outcomes
- Follow up – how the consultation outcomes are incorporated and implemented under the resettlement plan.

Monitoring Results – Findings

- Describe key findings of monitoring.
- Compare results against the established benchmarks.
- Compare against the objectives of safeguards or desired outcomes (minimizing IR impacts, livelihood restoration)

Compliance Status:

- Summarize the compliance status of the loan covenants.
- Clearly indicate any non-compliance – suggest remedial (corrective) measures and include it as a ‘follow up action’.

Issues and follow up actions:

- Issues that are identified during monitoring, follow up action developed
- Next monitoring report will report on the follow-up actions identified in the previous report.

Review mission guidelines:

- Suggests any specific issues that the ADB review missions need to take up with the EA/IA including the level of cooperation/support from the EA/IA in undertaking external monitoring

Documents to be Attached as Appendices with the Monitoring Report:

1. Summary matrix of policy and loan covenants compliance status
2. Copies of AP's certification of payment (copies of signed agreements)
3. Summary/minutes of the public consultation meetings
4. Summary of complaints/grievances received and the status of their solution/resolution.