

Environmental Monitoring Report

Project Number: 44007-013
Semi-Annual Report (January 2015 – June 2015)
August 2015

People's Republic of China: Jiangxi Fuzhou Urban Integrated Infrastructure Improvement Project

Prepared by Fuzhou Project Management Office (Fuzhou Investment and Development Company) for the Fuzhou City Government, and Fuzhou City Environment Protection Bureau for the People's Republic of China and the Asian Development Bank.

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Asian Development Bank



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ABBREVIATIONS

ADB	–	Asian Development Bank
BRT	–	bus rapid transit
COD	–	chemical oxygen demand
CEIA	–	consolidated environmental impact assessment
EMP	–	environmental management plan
PCC	–	Public Complaints Center
PRC	–	People's Republic of China
PEPD	–	Provincial Environmental Protection Department

WEIGHTS AND MEASURES

BOD ₅	–	biological oxygen demand
CO	–	carbon monoxide
dB	–	decibel
ha	–	hectare
kg	–	kilogram
km	–	kilometer
L	–	liter
m	–	meter
m ² m ³	– –	square meter cubic meter
mg	–	milligram
NO _x	–	nitrogen oxide
NO ₂	–	nitrogen dioxide
SO _x	–	sulfur oxide
t	–	ton

NOTE

In this report, "\$" refers to US dollars.

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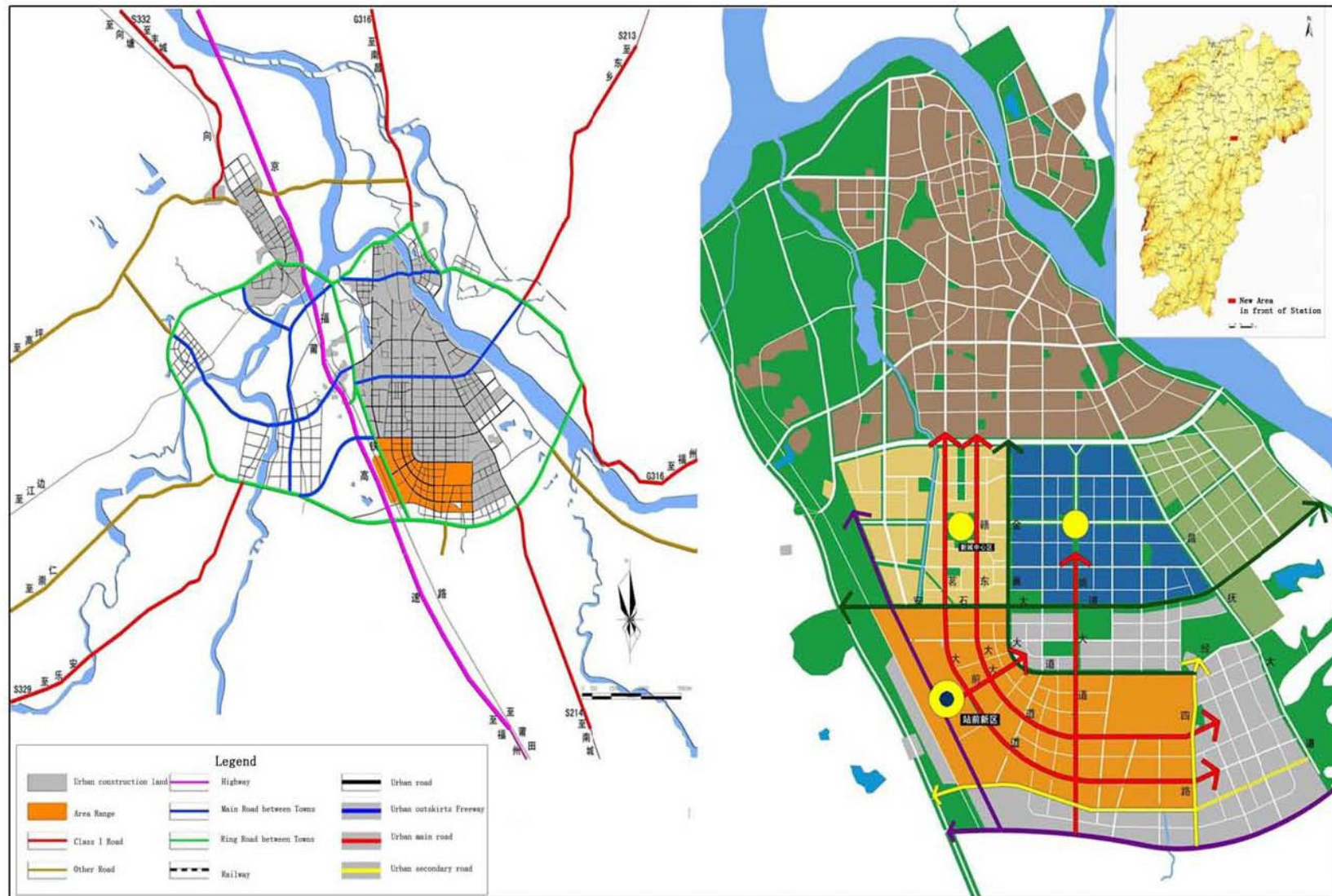
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Map- 1 Project Location

I. INTRODUCTION

A. Report Purpose and Rationale

1. As defined in the domestic EIAs and consolidated environmental impact assessment (CEIA) for Jiangxi Fuzhou Urban Integrated Infrastructure Improvement Project (the Project) under ADB Loan, semi-annual environmental monitoring reports (EMR) have to be prepared by the borrower in order to evaluate and assess overall project activities to ensure the effective implementation of the environmental management plan (EMP).
2. The purpose of this third EMR is to document the environmental management activities and compliance with the approved EMP of this Project from January to June 2015. This report is prepared in accordance with the environmental monitoring program as part of the environmental management plan (EMP). As the third EMR, it will not only cover the construction phase, but also demonstrate compliance with the EMP for the design, bidding, and construction preparation stages. In line with targets aimed at reducing the negative environmental impacts of the Project and in accordance with all the relevant specifications and standards of the PRC, as well as the policies of the Asian Development Bank(ADB), this report will emphasize: (i) progress made in implementing the EMP, (ii) implementation of mitigation measures, (iii) environmental compliance, (iv) institutional strengthening and training, (v) public consultation, and (vi) problems that have occurred and corrective actions taken.
3. This report is prepared by the FZPMO (Fuzhou Investment and Development Company) with the assistance from the external environmental monitoring consultant. The monitoring plan was updated on the basis of discussion with Fuzhou EMS.

B. Project Objective and Components

4. **Project components.** The Project involves the construction of four main components to support the urban expansion of Fuzhou city, to assist in the movement of passengers between the new train station and the existing city area and to reduce flood risk. The four components are as follows: (i) Four station access roads consisting of 9 km of new Class II road, to provide access to the new railway station and includes utilities, streetscape improvements and improved traffic management;(ii) Upgraded public transport system consisting of 12 km of Bus Rapid Transit (BRT) between the new station and the city center;(iii) An urban transport (multimodal) hub including new city bus/bus rapid transit(BRT), long-distance bus terminals, taxi facilities and parking for bicycles, motorcycle, and automobiles; and (iv) A Fenggang river improvement and park development project to extend an existing park corridor along the river providing an urban “greenway” for non-motorized transport that will link the old city with the new station development area.

C. Project Implementation Progress

5. The below Table 1-1 shows the latest project implementation progress.

Table 1- 1 Project Implementation Progress (as of June 2015)

Category	Contract Under Preparation/ Implementation		Latest Progress and Future Plan
Civil Works	Five Contracts On Road Civil Works	C1.2 Waihuan Road (k2+580 – k3+600):	Site preparation and temporary ditches(Contract Period: 22 Jul 14– 21 Dec 15)
		C1.3 (Zhanqian Road (Yuming Road – Jinchao Road)):	Site preparation for 700m(Contract Period: 22 Jul 14– 21 Dec 15)
		C1.4 (Gandong Road (Anshi Road – Zhanqian Road) and Jinchao Road (Anshi Road – Zhanqian Road))	Gandong Rd: site preparation 200m Jinchao Rd: 70% earthwork & base course completed (Contract Period: 22 Jul 14– 21 Dec 15)
		C1.5 (Zhanqian Road (Jinchao Rd – Jinni Rd) and Jinchao Road(Zhanqian Rd – Jinni Rd))	95% earthwork & drainage completed(Contract Period: 22 Jul 14– 21 Dec 15)
		C1.6 (Gandong Road (Zhanqian Rd – Jinni Rd)): The contractor fielded in September 2014. 80% of surface cleaning completed.	Site preparation for 230m and tree-cutting for 2.9km(Contract Period: 22 Jul 14– 21 Dec 15)
	Fenggang River Improvement (Phase II)	C4.1	Not started (Contract Period: 16 Feb 15– 15 Jul 16)
	BRT	Preliminary design stage. (pls. see para. 6 below)	It is expected to start construction in June 2016.
Goods	Transport terminal	Detailed design stage.	TBD
	Transport terminal	Detailed design stage.	TBD
Consulting Service	External Resettlement Monitoring	The contract has been signed.	To finish timely
	External Gender And Social Development Monitoring	The contract has been signed.	To finish timely
	External Environmental Monitoring	The contract has been signed.	To finish timely
	Road Safety Audit	The report is approved by ADB.	The safety measures have been incorporated into the detailed design.
Associated Facilities	Waihuan Road Civil Works	C1.1 Waihuan Road (K0+000–K2+580)	91% complete as of Oct 2014 (Contract Period: Jul 13– Dec 15)

6. **Proposed change of BRT alignments.** The domestic EIA on the whole Project was approved by Fuzhou EPB in 2013. During the ADB loan review mission in August 2014, a minor change of the BRT alignment was proposed. The FSR for the proposed BRT alignment change has been submitted to Jiangxi Provincial DRC for review. It was confirmed that Fuzhou EPB would be responsible for review and approval of the domestic EIA on the proposed BRT alignment change. Fuzhou EPB confirmed that an EIA document to address the proposed BRT alignment change would be required. It was agreed that the FIDC would hire a qualified domestic EIA institute and submit the draft EIA document to Fuzhou EPB for review by 15 July of 2015. The updated CEIA with EMP will be submitted to the ADB by 15 September 2015. In the middle of August, It was informed by FIDC that the domestic EIA report on the proposed BRT alignment change was under preparation by a qualified domestic EIA institute.

II. INSTITUTIONAL SETUP AND RESPONSIBILITIES FOR EMP IMPLEMENTATION AND SUPERVISION

A. Institutional responsibilities for environmental management

7. **Establishment of the environmental management system (EMS).** Based on the actual progress, the environmental specialist of Fuzhou Investment and Development Company conducted detailed discussion with the contractor and supervisor. The below **Figure A-1** and **Table A-2** update the environmental responsibilities of each organization during construction phase of the Project.

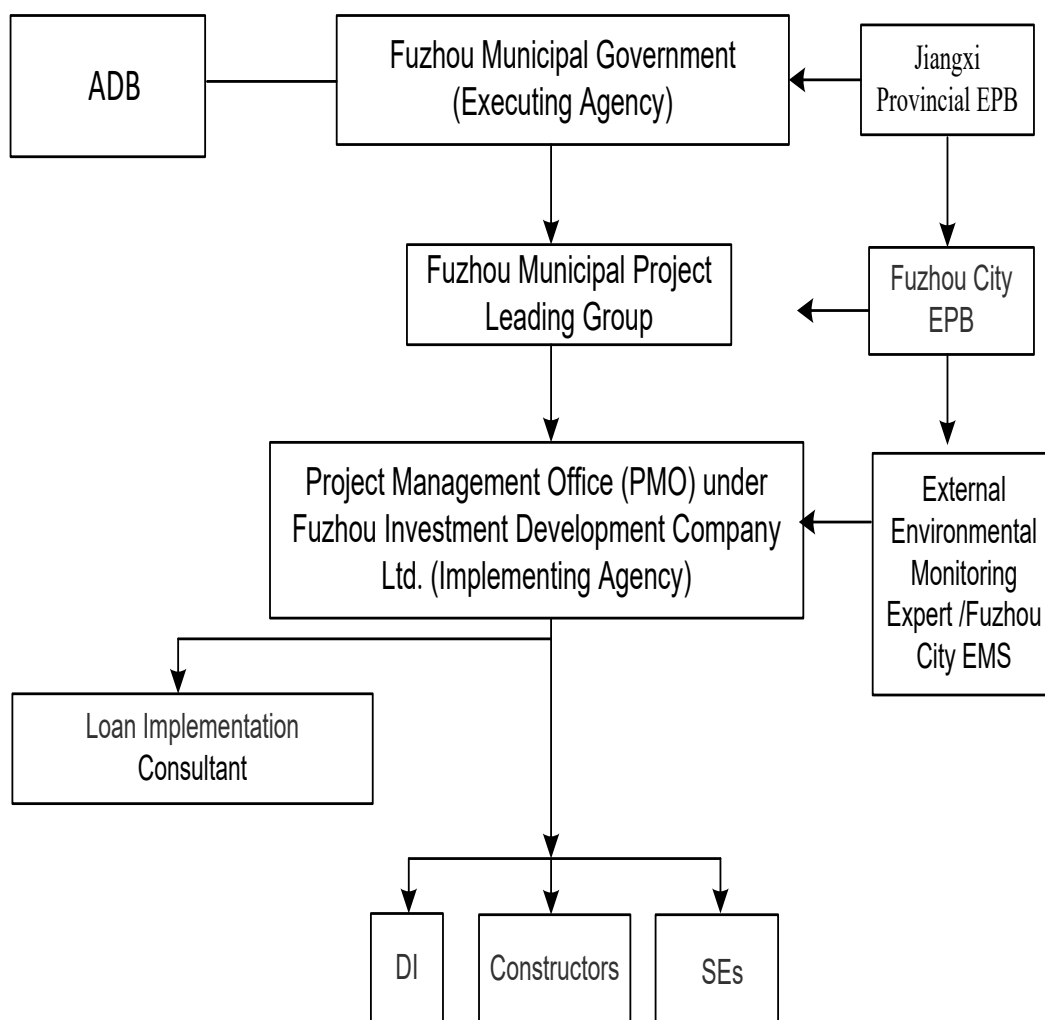


Figure 2- 1Environmental Management System of The Project

8. The Project Management Office (PMO, under FIDC) ensures that the EMP is part of the contract documents. Contractor is responsible for preparing a specific Environmental Management Plan (Contractor's Environmental Management Plan or CEMP) based on this CEMP, prior to the commencement of construction activities. Supervising Engineer (SE) is responsible for reviewing and approving Contractor's EMP as well as ensuring that contractor complies with its mandates. Public complaints regarding adverse environmental impacts arising from inadequate implementation of the EMP, if any, will be captured through the proposed Grievance Redress Mechanism. For the details please see the **Table 2-1**. So far, all seven contractors (C1.1, C1.2, C1.3, C1.4, C1.5, C1.6, C4.1) have submitted their CEMPs for each contract, and they have been reviewed by the External Environmental Monitoring Consultant, and approved by PMO.
9. While contractor includes an Environmental Management Officer in the contractor's staff responsible for implementing the EMP, the supervising engineer's staff also includes an Environmental Surveillance Monitoring Specialist for monitoring the implementation of the EMP and managing other unforeseen environmental impacts. The details please see the **Table 2-1**.
10. Before the construction activities commence, Contractor prepared and submitted other mitigation plans and method statements consistent with the EMP to SE for review and approval. Contract documents explicitly indicate the requirement of these plans and also state that all environmental protection measures should be included in the bid price.
11. Bidding documents and detailed design contracts are prepared and managed by the FIDC. Public consultations during the implementation of the EMP are arranged by the SE/PMO. The environmental specialist of FIDC examined the issued BDs and signed contracts. The environmental clauses have been incorporated into the design and procurement documents to ensure **environmentally responsive procurement**. The EMP has been attached in the BDs issued and civil works signed. The costs of all mitigation measures during construction have been covered in the issued bidding documents and signed contracts. It is noticed that the cost of civilized construction measures is included in the BOQs of the six road civil works contracts' BDs. Contractor Environmental Specifications attached in the PAM are included in the signed contract. Standard environmental clauses and sub clauses have been applied in the SCCs 2.3(9), SCCs 19.3, 31.3 and 66 in the six road draft contracts. But it was required that the submission interval of internal monitoring report is quarterly basis. It is suggested to submit monthly internal monitoring report as recommended in the PAM. Contractor Environmental Specifications cover impacts on water resources, air quality, noise environment, traffic, adjoining properties, and utilities, human health and safety, flora and fauna, soil, disposal of waste, cultural heritage and other matters. The objective of these clauses is to reduce and manage all potential environmental impacts caused by the construction activities. Construction work is carried out by qualified contractors and relevant sub-contractors. Contractor is responsible for implementing the mitigation and monitoring measures defined in the EMP. To meet this requirement contractor appoints an Environmental Officer to oversee this task who will communicate closely.
12. The Government committed to appoint a **Wetland Habitat Design Specialist** as part of the Loan Implementation Consulting Services (contracted to EED) to review and

optimize the ecological features of the Fenggang River Improvement (Phase II). This Consultant should have been mobilized to work with the Design Institute during the detailed design. Owing to delays mobilizing the main consulting services, it was agreed during the ADB Mission in August 2014, that the PMO would appoint the Wetland Habitat Design Specialist via ICS. ADB recommended a qualified consultant who was willing to do the work but the contract was never signed. In December 2014, the PMO requested that the consulting services were cancelled as the detailed design had already been completed. ADB agreed to cancel the ICS recruitment on condition that the services were included in the loan implementation consulting services. During the Mission, it was determined that the PMO did not include the updated Terms of Reference for the Wetland Habitat Design Specialist provided by ADB so these services have not been included in the contract agreed with EED. It was finally agreed that the Loan Implementation Consultant would sub-contract a specialist to review the detailed design of the Fenggang River Improvement (Phase II). The Mission acknowledged the efforts already taken to incorporate ecological principles into the design, so major changes were not anticipated, however, it was requested that minor changes that would optimize the ecological benefits of the design are accommodated. At the beginning of July, it was informed by FIDC that some candidates' CVs in Chinese were submitted and reviewed, and EED was collecting those candidates' CVs in English and would submit to the ADB very soon thru FIDC. Mr. Jiang Hongxing, who has done very similar work for Jiangxi Ji'an project, is considered as recommended candidate for the assignment. The proposal was submitted to the ADB, and is under ADB review.

13. **Loan implementation environmental consultant.** The estimated input of environmental capacity building specialist (wetland habitat) in the issued RFP was 6 man-months. In the MOU of August 2014, the position was taken out and is being procured thru ICS with budget of 1.5 man-months input. So there is a balance of 4.5 man-months. The PMO and the Loan implementation consultant (EED) agreed to use the balance to add an environmental consultant to support internal environmental management, monitoring, supervising and prepare the environmental part in the Project quarterly progress reports.

Table 2- 1 Updated Environmental Responsibilities Matrix During Construction Period

Phase	Responsible Agencies	Name/ Position	Environmental Responsibilities	Contact Information
Construction Stage	FZPMO, implementing Agency (Fuzhou Investment And Development Company)	Mr. Liu Haiquan, Deputy General Manager/ Mr. Yang Chen, Engineer.	Reviewing and approving CEMP; Advising on implementation of mitigation measures	Cell: 13907946066, Tel: +86 794 8257866 /Cell:18679478369 Email: FZ_PMO@163.com Add: The Eighth Floor of Office Building No.2 of Municipal Government in New Urban District in Fuzhou, Jiangxi
	Fuzhou Bus Company under Fuzhou Transport Bureau)	Mr. Huang Zhiqun/Liu Zhenhua, Section Chief of Fuzhou Transport Bureau		Cell: 13970437292 /15807049990
	Design Institute (including Jiangxi Zhongmei Engineering Group. Ltd./ Xiameng Zhongping Road Survey And DI Co., Ltd.)	Miss Ouyang Chuzhu, landscaping Engineer Mr. Fan Chengkang	Incorporation of environmental mitigation measures into preliminary designs, detailed designs, and bidding documents.	Cell: 15216263423 Cell: 13879481306
	Contractor	Mr. Li Xuan, Engineer, Nanchang Road and Bridge Company (C1.1 Waihuan Road Civil Works)	Preparing CEMP, Implementing mitigation measures and internal monitoring	Cell: 13361667066 Email: Lixuan19870207@126.com
		Mr. Liu Shujing, manager/Wang Wenbang, EHS Engineer, Jiangxi Tongwei Road Construction Group Co., Ltd. (C1.2 Waihuan Road (K2+580-K3+060))		Cell: 15207945309 /15720909021

		Mr. Jie Yang, Site manger /Miss Liu Lijuan, EHS engineer, Guangxi Huanan Construction Group Co., Ltd. (C1.3 Zhanqian Road (Yuming Road- Jinchao Road))		Cell: 13870482322 /13177661661, 1390579627@qq.com
		Mr. Huang Jiangao, Site manger /Mr. Du Xiaoliang, EHS engineer, Kunpeng Construction Group Co., Ltd. (C1.4 Gandong Road(Anshi Road- zhanqian Road)and Jinchao Road(Anshi -Zhanqian))		Cell: 18907940607 /13807949111
		Mr. Huang Zhenhua, Site manger /Miss Li Rong, EHS engineer, Yichun Tongda Road & Bridge Construction Co., Ltd. (C1.5 Zhanqian Road (Jinchao Road -Jinni),Jinchao Road (zhanqian – Jinni))		Cell: 18296499776 /15870786933
		Mr. Wan Hui, Site manger, /Mr. Huang Chungeng, EHS engineer, Zhushan Construction Group Co., Ltd. (C1.6 Gandong Road (zhanqian – Jinni))		Cell: 15179404939/ 18379464247
		Mr. Yang Qizhu, manager/ Mr. Li Hua, EHS engineer, Jingxi Hongzhou Landscape Engineering Co., Ltd. (C 4.1 Fenggang River greenway)		Cell: 13699597387/ 13979483998
		Supervising Engineer (SE)		
		Mr. Wu Shenrong, Site supervising engineer, Changda Supervision Co., Ltd. (C1.1 Waihuan Road Civil Works)	Reviewing CEMP; Supervising implementation of mitigation measures and internal monitoring	Cell: 13479426408
		Mr. Zhang Yigeng, Engineer, Changda Supervision Co., Ltd. C1.2 Waihuan Road (K2+580- K3+060)		Cell: 15697883428

		Mr. Zhang Yigeng, EHS engineer, Changda Supervision Co., Ltd. C1.3 Zhanqian Road (Yuming Road- Jinchao Road)		Cell: 15697883428
		Mr. Zhang Hegeng, EHS engineer, Jiangxi Hengshi Construction Supervision Company C1.4 Gandong Road(Anshi Road- zhanqian Road)and Jinchao Road(Anshi -Zhanqian)		Cell: 13677979595
		Mr. Zou Guisheng, Engineer, Jiangxi Hengshi Construction Supervision Company C1.5 Zhanqian Road (Jinchao Road - Jinni),Jinchao Road (zhanqian — Jinni)		Cell: 18970475156
		Mr. Zhang Huiming, EHS engineer Changda Supervision Co., Ltd. C1.6 Gandong Road (zhanqian — Jinni)		Cell: 13879493605
		Mr. Li Haihong, hydraulic engineer, Guangdong Hehai Construction Engineering Company / Mr. Li Xingming, landscaping engineer, Jiangxi Zhongxiang Construction Supervision Company (C 4.1 Fenggang River greenway)		Cell: 15070425431/ Cell: 13970429412
	Jiangxi EPB/Fuzhou EPB (Fuzhou Environmental Supervision Team), Independent Environmental Monitoring Expert, Fuzhou PMO, IAs	Miss. Zou Xiaohong, Fuzhou EPB Miss Li Hua Mr. Nie Mingtao	Implementing compliance /external monitoring, supervising implementation of mitigation measures	Tel: 0794-12369 Cell: 13979483998 Cell: 18086056438 Email: hjpmo@163.com

III. COMPLIANCE WITH ENVIRONMENT RELATED PROJECT COVENANTS

14. So far, all due environmental covenants in Loan Agreement and Project Agreement are in compliance, with some still to be enacted. A list of loan covenants and compliance status is shown in the below table.

Table 3- 1 Compliance with Environment Related Project Covenants

Environmental Relevant Covenant	Reference	Status of Compliance	Notes
<u>Loan Agreement</u>			
<i>FMG will cause the Project Implementing Agency to ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (a) all applicable laws and regulations of the PRC relating to environment, health and safety; (b) the environmental safeguards as set out in the ADB's Safeguard Policy Statement (2009) ("SPS"); and (c) all measures and requirements set forth in the Environmental Impact Assessment (EIA), the Environmental Management Plan (EMP), and any corrective or preventative actions set forth in a Safeguards Monitoring Report.</i>	1	Being complied with.	
<u>Human and Financial Resources to Implement Safeguards Requirements</u>			
<i>FMG will make available and cause the Project Implementing Agency to make available necessary budgetary and human resources to fully implement the EMP and the RP.</i>	2	Being complied with.	
<u>Safeguards – Related Provisions in Bidding Documents and Works Contracts</u>			
<i>FMG will cause the Project Implementing Agency to ensure that all bidding documents and contracts for Works contain provisions that require contractors to:</i>	3		
<i>(a) comply with the measures relevant to the contractor set forth in the EIA, the EMP and the RP (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set forth in a Safeguards Monitoring Report;</i>		(a) Complied with or to be complied with.	
<i>(b) make available a budget for all such environmental and social measures;</i>		(b) Complied with or to be complied with.	
<i>(c) provide FMG and Project Implementing Agency with a written notice of any unanticipated environmental, or resettlement risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the EIA, the EMP and the RP;</i>		(c) The BRT alignment's minor adjustment may trigger this and updated CEIA with	

- (d) ... EMP may be required. (The details see para.6)
- (e) *reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.* (e) To be complied with.

Safeguards Monitoring and Reporting

FMG will do, or cause the Project Implementing Agency to do, the following:

4

- (a) *submit (i) semiannual Safeguards Monitoring Reports during construction, and (ii) annual Safeguard Monitoring Reports for environment and resettlement during operation of Project facilities, to ADB for review and disclose relevant information from such reports to affected persons promptly upon submission;* (a) The first semi-annual environmental monitoring report was submitted in August 2014. The second EMR was submitted and disclosed on ADB's project website in June 2015. This is the third EMR.
- (b) *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, the EMP and the RP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan;* (b) The BRT alignment's minor adjustment may trigger this and updated CEIA with EMP may be required. (The details see para.6)
- (c) *not later than three months after loan effectiveness, engage a qualified and experienced external expert under a selection process and terms of reference acceptable to ADB, to verify information produced through the Project monitoring process, and facilitate the carrying out of any verification activities by such external experts; and* (c) Complied with. An external monitor was hired in March 2014 and started work since Apr. 2014.
- (d) *report any actual or potential breach of compliance with the measures and requirements set forth in the EMP and the RP promptly after becoming aware of the breach.* (d) Not applicable by far

Work Contract

FMG will cause the Project Implementing Agency to ensure that the bidding document for Works contracts will

5

Being complied with. The relevant requirements are

include provisions to require the contractors to (a) prioritize employment of women and the poor; (b) provide equal pay for equal work; (c) provide the timely payment of wages; (d) use local unskilled labor, as applicable, (e) comply with core labor standards and the applicable labor laws and regulations, including stipulations related to employment; related to employment; and (f) not employ child labor. FMG will further cause the Project Implementing Agency to ensure that records of labor employment are properly maintained and tracked in the project performance monitoring system.

covered in the BDs.

FMG will cause the Project Implementing Agency to ensure that the Work contractors will (a) implement an HIV/AIDS awareness and prevention training for all employees; (b) provide necessary measures to ensure the safety and health of its employees; (c) together with the local health bureaus, disseminate information on the risks, hazards, impacts and prevention know-how on HIV/AIDS among the staff, workers on the construction sites and the local community by means of information disclosure, education and consultation; and (d) observe local customs concerning acceptable behavior toward the local population.

6 Being complied with. The relevant requirements are covered in the BDs.

Public Awareness

FMG will undertake public awareness campaigns through information disclosure, education and consultation on the Project and its benefits, including but not limited to information related to the RP, EMP and GAP.

7 Being complied with.

Grievance Redress Mechanism

FMG will ensure that, within 2 months of loan effectiveness, a grievance redress mechanism, acceptable to ADB and in accordance with the PAM, is established and functioning effectively to (a) review and document eligible complaints of Project stakeholders; (b) proactively address grievances; (c) provide the complainants with notice of the chosen mechanism/action; and (d) prepare periodic reports to summarize (i) the number of complaints received and resolved, (ii) chosen actions, and (iii) final outcomes of the grievances and make these reports available to ADB. Eligible complaints will include (a) those related to the Project, (b) any of the service providers, (c) any person responsible for carrying out the Project, (d) complaints on misuse of funds and other irregularities, and (e) grievances due to any safeguards and gender issues.

8 Being complied with.

15. The follow-up status on the MOU of last ADB mission in June of 2015 is shown as following:

Table 3- 2 Follow Up to the MOU of Last ADB Mission in June of 2015

Requirements in the MOU	Compliance Status
<p>(i) Para.44.Site Management Issues.... It is requested that site and construction waste management is improved and confirmed in the third environmental monitoring report.</p>	<p>(i) Being complied with. The LIEC visited the sites. The details see the para. 27.</p>
<p>(ii) Para.45.Grievance Redress Mechanism, Information Disclosure and Public Consultation. ...The PMO agreed to install information boards at all work sites and offices by the end of June with key project contacts and activities and details of the complaints procedures. External safeguard monitors to follow-up and confirm improved arrangements for grievance redress mechanism and information disclosure in the safeguard monitoring reports due for submission to ADB in July. External monitors and the PMO were also reminded of the need for ongoing public consultation with affected persons throughout implementation.</p>	<p>(ii) Complied with. The information boards have been erected on all work sites and offices. (pls. see the site photos in the Appendix 2). The FIDC and LIEC conducted a public consultation on 8 Jul. 2015. The details see the para. 27. Ongoing public consultation with affected persons will be enhanced throughout implementation in future.</p>
<p>(iii) Para. 46. Environmental Approvals for BRT Realignment. ...it was confirmed that the updated domestic EIA for the BRT realignment will be submitted to EPB by mid-July and an English translation can be provided to ADB by 15 September 2015. (also Para. 61 Action plan No.1- By 15 Sep 2015, FIDC submit revised environmental and social impact assessments in English to ADB after its domestic approval)</p>	<p>(iii)Underway. At the beginning of July, It was informed by FIDC that the domestic EIA report on the proposed BRT alignment change was under preparation.</p>
<p>(iv) Para. 48. Wetland Habitat Design Specialist Consulting Services. ... It was finally agreed that the Loan Implementation Consultant would sub-contract a specialist to review the detailed design of the Fenggang River Improvement (Phase II). The Mission acknowledges the efforts</p>	<p>(iv) Underway. EED (the Loan Implementation Consultant) has submitted the candidates' CVs to FIDC for review. At the beginning of July, It was informed by FIDC that some candidates' CVs in Chinese were submitted and reviewed, and EED was collecting those candidates' CVs in English and would submit to the ADB</p>

<p>already taken to incorporate ecological principles into the design, so major changes are not anticipated, however, it is requested that minor changes that would optimize the ecological benefits of the design are accommodated. (also Para. 61 Action plan No.10- Promptly, FIDC/EED agree contract variation, appoint wetland habitat design specialist, provide ADB with review report on detailed design)</p> <p>(v) Para. 50. Environmental Monitoring Report. ... a second revision will be submitted to ADB by the mid-June. The report was issued late due to delays in obtaining environmental monitoring data. The PMO was requested to support the external environmental consultant in obtaining data from Fuzhou Environmental Monitoring Station on time. The report covering the period January to June 2015 should be submitted to ADB in July 2015 and the report covering the period June to December 2015 should be submitted to ADB in January 2016. (also Para. 61 Action plan No.11- By 15 Jun 2015, FIDC/Environment monitor submit a revised Second Environmental Monitoring Report; and No.12- FIDC/Environment monitor submit the Third Environmental Monitoring Report)</p> <p>(vi) Para. 51 Assessment of new project components.However, ADB would need to review and confirm the safeguard requirements for a change of scope of this nature.</p>	<p>very soon thru FIDC.</p> <p>(v) Complied with or being complied with. The revised 2nd EMR was submitted and disclosed on ADB's project website in June 2015. This is the 3rd EMR. The 4th EMR is to be submitted in Jan 2016.</p> <p>(vi) Still under consideration. TBD.</p>
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IV. ENVIRONMENTAL MITIGATIONS AND COMPENSATION MEASURES IMPLEMENTED IN THE REPORTING PERIOD

16. Potential environmental impacts of the Project and the mitigation measures during this reporting period are summarized in the **Appendix 3**. The implementation status of the mitigation measures are summarized in the last columns of the tables for comparison with the designed mitigation measures stated in the EMP. In summary, the mitigation measures have to date been implemented effectively.

V. SUMMARY OF ENVIRONMENTAL MONITORING

A. Monitoring plan and responsibilities

17. Based on the EMP and Chinese EIA, an environmental monitoring program is presented in **Table 5-1** and **Table 5-2**. This program considers the scope of monitoring; monitoring parameters; time and frequency; and implementing and supervising agencies. The monitoring follows the methodology provided in the national standard methods for monitoring pollutants. Other associated standards are national environmental quality standards and pollutant emission standards. The external monitoring will be undertaken on a semi-annually basis.

Table 5- 1 Environmental Mitigation and Monitoring Schedule

Phase	Activity	Schedule
Mobilization/Pre-construction	Training for Contractors/PMO to be completed before the beginning of mobilization phase	1 time
During the mobilization phase	SE to review and approve contractor's management plans and method statements and forward to PMO	1 time
During construction	Mitigation and monitoring	See EMP and monitoring plan
During construction	Reporting: Contractor to SE SE to PMO/FIDC PMO/PIDC to ADB (through FMG)	Weekly/monthly Monthly; quarterly Semi-annually
During Operation	Monitoring of air quality, water quality, and noise	See Table 5-2

Table 5- 2 Environmental Monitoring Program

Component	Location	Parameter	Frequency	Duration	Who Implements	Who Supervise
Construction						
Air Quality	Sensitive locations around construction sites - 6 sites	TSP	Quarterly-3 consecutive days	3 years	External Environmental Monitor	Fuzhou EPB, FZPMO
Acoustic Quality		Noise	Monthly -1 day	3 years		
Water Quality		Fenggang River – 4 points	SS, COD, Oil/grease	Quarterly - 1 day		
Operation						

Air Quality	Main trunk and roads sensitive locations	Exhaust	Randomly	Continuous	Qualified Environmental Monitor	Fuzhou EPB
		Atmosphere	Once every season	Continuous		
Acoustic Quality		Transport Noise	Daytime once and nighttime once, annually -2 consecutive days	Continuous		

18. **Selection of noise and atmosphere sensitive locations around construction sites-6 sites.** In the EMoP of the approved ADB EMP, no detailed noise and atmosphere sensitive location is designated. However, in the domestic EIA report, 6 noise and atmosphere sensitive locations around construction sites were monitored as environmental baseline. So the external environmental monitoring points mainly referred to the domestic EIA report. In the original domestic EIA reports, three noise and atmosphere sensitive locations in Guojialin Village were monitored. Based on discussion with FIDC and Fuzhou EMS, it is unnecessary. Furthermore, it is suggested that only one monitoring point in Guojialin Village be monitored and two other monitoring points nearby Waihuan Road civil works contract (point A5 or N5: Wangjia Village, and point A6 or N6: Residential Area of Railway Station Staff) be added later during external environmental monitoring. The details pls. find the **Table 5-7** and **5-8** (points A5, A6, N5 and N6 were proposed to add since the first external environmental monitoring).
19. **Selection of water quality monitoring sections.** In the EMoP of the approved ADB EMP, no detailed water quality monitoring section is designated. However, in the domestic EIA report, 4 water quality monitoring sections in the Fenggang River (phase II) alongside construction sites were monitored as environmental baseline. So the external environmental monitoring sections mainly referred to the domestic EIA report, in which the inlet section from Fenggang River directly to Fu River was monitored originally. But the section at the direct inlet from Fenggang River to Fuhe River doesn't exist now because the water route has been changed through other domestic hydraulic projects. Actually currently Fenggang River flows to Linshui River then into Fuhe River. There is no change for other sections in Fenggang River. It was recommended to alter the monitoring section to the inlet from Fenggang River to Linshui River and can reflect the water quality of effluent of Fenggang River. The details pls. see the **Table 5-6** (section SW 4). Besides, The Fenggang River Improvement alignment is not changed, so no need for reassessment or updates to EIA/EMP.
20. The environmental monitoring, including the environmental benefits monitoring, will be incorporated in the project performance management system (PPMS) indicators for the Project. The FZPMO (FDIC), is responsible for analyzing and consolidating the data through their management information system. The PPMS will be designed to allow adequate flexibility to adopt remedial actions regarding project design, schedules, activities, and development impact. At the inception stage of the loan implementation consulting service, the FZPMO, the IAs, and the loan implementation consultant will develop comprehensive PPMS procedures for systematically generating data on inputs

and outputs of the project components, and agreed on related environmental and other indicators to be used to measure project impact. The FZPMO and the IAs will further firm up monitoring and recording arrangements.

21. The Impact indicators in the DMF have one closely relating to environment, i.e. Average concentrations of carbon monoxide and nitrogen dioxide in Fuzhou staying at current levels until 2020. The outcome indicators in DMF have an indicator closely relating to environment, i.e. Fenggang River Flood frequency reduced from annual to once in 20 years. Based on the above, FIDC is working with the external environmental monitoring expert to collect the relevant data in terms of environmental management. It was informed by Fuzhou EPB that no regular carbon monoxide monitoring has been done in Fuzhou City so far. As alternatives, the following data from Fuzhou EPB was provided by Fuzhou EPB.

- SO₂: 0.024 mg/m³, NO₂:0.022 mg/m³, PM₁₀: 0.064 mg/m³ in 2012;
 - SO₂: 0.023 mg/m³, NO₂:0.023 mg/m³, PM₁₀: 0.072 mg/m³ in 2013;
 - SO₂: 0.023 mg/m³, NO₂:0.021 mg/m³, PM₁₀: 0.065 mg/m³ in 2014;
- (SO₂: 0.060 mg/m³, NO₂:0.040 mg/m³, PM₁₀: 0.070 mg/m³ in Ambient Air Quality Standards, GB 3095-2012, Class II)

And there has been no flood occurred in Fenggang River.

B. Environmental quality targets, sampling and analytical methods

22. According to the EIAs, CEIA and actual project status, the Project's environmental management objectives are as Table 5-3 below.

Table 5- 3 Environmental Quality Protection Objectives

Item	Type of Objective	Protection Objective	Location
Water	Surface Water	Fenggang River (Class III of Environmental Quality Standard for Surface Water (GB3838-2002))	
Noise and air	Residential area nearby	(i) Xianxiyao Village (Intersection of Waihuan Rd and Chonggang Rd.). (ii)Guojialing Village-1 (Intersection of Gandong Ave., No.1 Zhanbei Rd. and Zhanqian Rd.) (iii)Guojialing Village-2 (Intersection of Gandong Ave..and Zhanqian Rd.) (iv)Guojialing Village-3 (Intersection Of Gandong Ave.) (v)Jinjia Village (Jinchao Ave.) (vi)Gongjia Village (North of Jinchao Ave., East of Weier Rd.)	80m to the property line; 45m to the property line; 50m to the property line; 60m to the property line; 28m to the property line; 40m to the property line;
Ecological Environment/ Soil Erosion	Farmland ;	Total area is 3248.68mu including 2296.5mu farmland;	Along the road ;
	Earth borrow pit ;	Affected vegetation, cultivated land, soil erosion and landscape;	Along the road ;
	High filled and deep excavated road sections	Affected vegetation, cultivated land, soil erosion and landscape;	High filled sections; Deep excavated sections:

	Landscape ;	Alignments and structures; harmony with the surrounding landscape	Along the road
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23. **Environmental monitoring sampling arrangements.** According to the environmental protection targets for sensitive receivers and possible major environmental impacts by construction specified in the EIAs and CEIA for different components under the Project, along with the actual project progress, field survey and environmental monitoring for each component has been conducted by Fuzhou EMS. The work scope for the External Environment Monitoring of the Project includes:
- a) For the components during construction period, the location and time of monitoring is determined according to the actual construction progress, activities and routes.
 - b) For the components under operation, the monitoring locations are selected near sensitive sections, such as residential areas, schools, etc.

24. Based on the current project progress, the detailed sampling arrangements in this reporting period are shown in the below **Table 5-4** on the basis of EMoP in the **Table 5-2**.

Table 5- 4 Environmental Monitoring Sampling Arrangements in this Reporting Period

Subject	Parameter	Location	Time &Frequency
Surface water quality	SS, oil, COD _{Cr}	4 sections of Fenggang River (details see the Table 5-6): Intersection of Fenggang River and Chonggang Ave.; Intersection of Fenggang River and Zhanqian Ave.; Intersection of Fenggang River and Linchuan Ave.; The inlet from Fenggang River to Linshui River.	once per day, for 3 consecutive days , twice per year including once in dry season and once in rainy season
Air quality	TSP	All 6 sensitive receivers near boundary of the construction sites(details see the Table 5-7 and 5-8):	once per day for 3 consecutive days, twice per year.
Acoustic environment	Leq(dB(A))	Xianxi Yao Village Guojialing Village Jingjia Village Gongjia Village Wangjia Village Residential Area of Railway Station Staff	twice a year: twice a day each time ,once during daytime, once during nighttime.

25. Standard monitoring methods: **Table 5-5** shows the standard monitoring methods, detection limits, and the standard code for each of the monitoring parameters.

Table 5- 5 Standard Monitoring Methods of Ambient Air, Noise and Water

Media	Monitoring Parameter	Method (Standard No.)	Detection Limit	Standard Limit
Surface water	SS (mg/L)	Gravimetric method (GB11901-89)	4	250
	Petroleum (mg/L)	Water quality- Determination of petroleum oils and animal and vegetable oils- Infrared spectrophotometry(HJ 637-2012)	0.01	0.01
	COD _{Cr} (mg/L)	Water quality-Determination of the chemical oxygen demand- Dichromate method method (GB 11914-89)	0.5	20
Air	TSP (mg/m ³)	Gravimetric (GB/T15432-1995)	0.001	0.30
Noise	Equivalent Continuous A Sound (Leq)	Environmental quality standard for noise (GB3096-2008)	0.5	60 (day)/ 50 (night)

C. Monitoring Results

1. Emission Discharge (Source) Monitoring Results

a. Results of Discharge (Source) Monitoring Results

26. FZPMO and the CSCs regularly and irregularly inspected the environmental status on the construction sites. Fuzhou Environmental Supervision Team, the subordinate of Fuzhou EPB's, also periodically conducted site inspection to check compliance status. Internal environmental monitoring was carried out by the contractors.
27. On July 7 of 2015, the external environmental monitor visited the work sites of the road civil works Contracts C1.3/1.4/1.6, and the Contract C4.1 Fenggang River Improvement (Phase II) under construction, site offices of C1.3/1.4/1.6. The major site findings are shown as below:
 - Grievance redress mechanism, information disclosure and public consultation. It was found that the display boards for contract environmental information and GRM being erected at entrance of each construction site with key project contacts and activities and details of the complaints procedures. It is the PMO of ADB requirements for project information disclosure and multiple entry point Grievance Redress Mechanism. Affected persons are made aware of key project activities that could disturb them and the ways in which they can complain and expect to have their complaints addressed.
 - It was told by FIDC that the topsoil disposed along the Waihuan road would be re-used for landscaped areas along the access roads and within the park associated with the Fenggang River Improvement (Phase II) as soon as possible. Besides, the pulverized fuel ash spoiled at road end, where a small pond was located nearby, have been cleared off.
 - The tunnel of Waihuan road has been open for traffic. Some spoiled construction materials, dumped on the open drainage ditches along both sides of the access road, were removed prior to operation. So the solid waste storage issue associated with the tunnel contractor that was highlighted during the

mission site visit, had been well addressed.

- During the site visit to C1.3, lots of demolished solid waste was still seen on site. FIDC suggested that those construction and demolition waste be firstly reused as construction materials by nearby villagers to build resettlement houses, then be utilized by constructors for road subgrade. The remaining will be sent to local construction and demolition waste landfill for disposal.
- During the site visit in November 2014, at construction site of C1.4, it was noticed that some adjacent village buildings are quite close to the site. The construction activities unavoidably cause noise and dust to those villagers nearby although there has been no any complaint raised or significant incompliance occurred so far. During the site visit in July 2015, at Guojialing Village (junction of C1.3/1.6), the external monitor and the PMO conducted a public meeting with affected persons nearby. The villagers expressed that the associated water supply, power supply and drainage system for the resettlement houses have not been installed. FIDC explained that the resettlement houses are still at foundation stage. The villagers need the associated facilities to build their own houses. It was clarified by FIDC that this is outside the scope of compensation agreement, so it is not eligible complaint for this Project. However, FIDC told that they have already helped those affected people (APs) apply for the relevant agencies (such as water supply, power supply and municipal drainage companies), and those associated facilities have been installed by August 2015 through local counterpart funds for improving infrastructure and those APs' living standards. One villager worried that their existing drainage/flood discharging system may be disturbed by those roads in the future. FIDC agreed to consider this and construct culvert if required later. Besides, the previous three environmental monitoring results showed compliance (the 3rd results are shown in this report).
- At the Contract C4.1 Fenggang River Improvement (Phase II) construction site, some soil was found being spoiled but only limited to the scope near the entrance. The constructor explained that that was for building access road and they will clean up very soon. The whole construction will start until the end of rain season (mid/late July). Remarkably, plenty of soil was seen temporarily stockpiling along the both sides of Fenggang River. Some construction machines were also there. The constructor said that those soil can't meet backfilling requirements so will be reused or disposed in other places. Lots of borrow soil will be required as well. The external monitor suggested that the constructor carefully consider water erosion and water pollution prevention measures as well as construction safety in case unexpected flood risks, and well treat so big amount of spoiled soil stockpiling and borrow soil. In the middle of August 2015, the FIDC informed that those temporarily spoils were stockpiled by nearby villagers and will be reused to refill embankment later. The rainy season (May to July every year) had gone so serious flooding or soil erosion risk is expected at low level, and the constructor has corresponding emergency preparedness plan and trained its staff as well as construction workers to address emergent risks. It is suggested that the stockpiling spoil be properly dealt with at the earliest possibility.

b. Assessment

28. Based on the aforementioned field survey and internal environmental check, there is no significant environmental impact found, the construction discharge of construction wastewater, dust and noise environment are kept at environmental acceptable level.

2. Ambient Monitoring Program

a. Results

29. The summary of the water quality monitoring data is shown in **Table 5-6** for the Fenggang River. According to the results, it is found that the concentrations of SS, COD_{Cr}, and Petroleum at all monitoring locations meets the Environment Quality Standard of Surface Water (GB3838—2002) Grade III Standard.

Table 5- 6 Summary of water quality monitoring data

No.	Location/ River section	Sampling date/time	Monitoring results(mg/l)			Compliance Status
			SS	COD _{Cr}	Petroleum	
SW1	Intersection of Fenggang River and Chonggang Ave.	May 23, 2015	30	11.4	0.01 _L	Complied with
		May 24, 2015	35	11.2	0.01 _L	Complied with
		May 25, 2015	34	11.7	0.01 _L	Complied with
		Jun 18, 2015	32	11.0	0.01 _L	Complied with
		Jun 19, 2015	34	11.2	0.01 _L	Complied with
		Jun 20, 2015	33	11.4	0.01 _L	Complied with
SW2	Intersection of Fenggang River and Zhanqian Ave.	May 23, 2015	30	12.8	0.01 _L	Complied with
		May 24, 2015	31	12.6	0.01 _L	Complied with
		May 25, 2015	32	13.0	0.01 _L	Complied with
		Jun 18, 2015	29	12.7	0.01 _L	Complied with
		Jun 19, 2015	31	13.0	0.01 _L	Complied with
		Jun 20, 2015	29	13.2	0.01 _L	Complied with
SW3	Intersection of Fenggang River	May 23, 2015	62	13.8	0.01 _L	Complied with

No.	Location/ River section	Sampling date/time	Monitoring results(mg/l)			Compliance Status
			SS	COD _{Cr}	Petroleum	
		May 24, 2015	65	13.5	0.01L	Complied with
		May 25, 2015	64	13.2	0.01L	Complied with
		Jun 18, 2015	65	13.6	0.01L	Complied with
		Jun 19, 2015	60	13.4	0.01L	Complied with
		Jun 20, 2015	64	13.3	0.01L	Complied with
		SW4	The inlet from Fenggang River to Linshui River	May 23, 2015	35	13.0
May 24, 2015	38			12.8	0.01L	Complied with
May 25, 2015	37			12.4	0.01L	Complied with
Jun 18, 2015	34			12.6	0.01L	Complied with
Jun 19, 2015	37			12.0	0.01L	Complied with
Jun 20, 2015	35			12.4	0.01L	Complied with
Environment Quality Standard of Surface Water (GB3838—2002) Grade III			N/A	<=20	<=0.05	
Standards for irrigation water quality(Standards for irrigation water quality) ¹			<=100			

32. The data of the construction air monitoring are shown in **Table 5-7** for the 6 sensitive receivers nearby. According to the results, it is found that the daily average concentrations of TSP, meet Environment Ambient Air Quality Standard (GB3095—1996) Grade II Standard due to the appropriate mitigation measures on the six road civil works contract sites. So the adverse impacts were limited.

Table 5- 7 Summary of air quality monitoring data

No.	Location	Sampling date/time	Monitoring results(mg/l)	Compliance Status
			TSP	
A1	Xianxi Yao	May 22, 2015	0.069	Complied with

¹Issued by Ministry of Environmental Protection only as reference here.

		May 23, 2015	0.072	Complied with
		May 24, 2015	0.068	Complied with
		Jun 18, 2015	0.087	Complied with
		Jun 19, 2015	0.102	Complied with
		Jun 20, 2015	0.069	Complied with
A2	Guojialing Village	May 22, 2015	0.074	Complied with
		May 23, 2015	0.070	Complied with
		May 24, 2015	0.075	Complied with
		Jun 18, 2015	0.111	Complied with
		Jun 19, 2015	0.123	Complied with
		Jun 20, 2015	0.134	Complied with
A3	Jingjia Village	May 22, 2015	0.077	Complied with
		May 23, 2015	0.068	Complied with
		May 24, 2015	0.074	Complied with
		Jun 18, 2015	0.182	Complied with
		Jun 19, 2015	0.107	Complied with
		Jun 20, 2015	0.118	Complied with
A4	Gongjia Village	May 22, 2015	0.079	Complied with
		May 23, 2015	0.081	Complied with
		May 24, 2015	0.080	Complied with
		Jun 18, 2015	0.141	Complied with
		Jun 19, 2015	0.131	Complied with
		Jun 20, 2015	0.125	Complied with
A5	Wangjia Village	May 22, 2015	0.083	Complied with
		May 23, 2015	0.082	Complied with
		May 24, 2015	0.079	Complied with
		Jun 18, 2015	0.156	Complied with
		Jun 19, 2015	0.134	Complied with
		Jun 20, 2015	0.076	Complied with
A6	Residential Area of Railway Station Staff	May 22, 2015	0.128	Complied with
		May 23, 2015	0.130	Complied with
		May 24, 2015	0.126	Complied with
		Jun 18, 2015	0.109	Complied with
		Jun 19, 2015	0.121	Complied with
		Jun 20, 2015	0.113	Complied with
Environment Ambient Air Quality Standard (GB3095—1996) Grade II			0.30	

33. **Table 5-8** shows the daytime and nighttime noise monitoring results for the 6 sensitive receivers nearby the construction sites. The noise monitored at these points has met Grade II requirement of Environmental Quality Standard for Noise (GB3096-2008) due to the appropriate mitigation measures on the six road civil works contract sites. So the adverse impacts were limited.

Table 5- 8 Summary of acoustic quality monitoring data

No.	Location	Sampling date/time	Monitoring results(Leq, dB(A))		Compliance Status
			Daytime	Nighttime	
N1	Xianxi Yao Small Village	May 22, 2015	48.0	44.2	Complied with
		May 23, 2015	49.2	44.6	Complied with
		Jun 19, 2015	51.3	44.6	Complied with
		Jun 20, 2015	49.2	42.4	Complied with
N2	Guojialing Village	May 22, 2015	52.8	42.8	Complied with
		May 23, 2015	48.8	43.5	Complied with
		Jun 19, 2015	54.7	41.6	Complied with
		Jun 20, 2015	50.9	41.6	Complied with
N3	Jingjia Village	May 22, 2015	51.8	42.4	Complied with
		May 23, 2015	52.9	43.7	Complied with
		Jun 19, 2015	51.9	41.3	Complied with
		Jun 20, 2015	52.1	42.2	Complied with
N4	Gongjia Village	May 22, 2015	53.9	44.0	Complied with
		May 23, 2015	51.8	44.5	Complied with
		Jun 19, 2015	52.9	43.6	Complied with
		Jun 20, 2015	53.4	42.7	Complied with
N5	Wangjia Village	May 22, 2015	46.3	41.6	Complied with
		May 23, 2015	50.5	43.3	Complied with
		Jun 19, 2015	48.7	41.0	Complied with
		Jun 20, 2015	51.7	42.6	Complied with
N6	Residential Area of Railway Station Staff	May 22, 2015	53.6	47.6	Complied with
		May 23, 2015	50.6	47.6	Complied with
		Jun 19, 2015	53.8	45.9	Complied with
		Jun 20, 2015	52.1	45.9	Complied with
Environmental Quality Standard for Noise (GB3096-2008). Class II			60	50	

b. Assessment

34. According to the field survey and environment monitoring, the water, air and noise environment monitoring results are summarized as below:

- Water Monitoring Survey- Surface water quality monitored has met the requirements of national standard in *Environment Quality Standard of Surface Water (GB3838—2002, Grade III)* for each component.
- Ambient air Monitoring Survey- The air quality monitored has met *Environment Ambient Air Quality Standard (GB3095—1996, Grade II)*, and the air quality of each sensitive receptor in construction phase also met the requirement of the national standard.
- Noise Monitoring Survey- Noises at each construction site has met the requirement of relevant standards. The noise at sensitive points related to the Projects has met the requirement of *Environmental Quality Standard for Noise (GB3096-2008), Class II*.

35. Based on all above, there is no any data exceeding national standard limit, and the negative impact caused by the Project is limited to an acceptable level.

3. Soil Erosion Caused by Construction: All Components

36. There is a CEMP for each contract that includes SEPP requirements. There were some soil erosion and management issues highlighted in November 2014 site visit by the LIEC with FIDC. These issues are being addressed (The details see para. 27). FIDC will recruit a soil erosion protection monitoring agency to carry out soil erosion monitoring based on the SEPP which is in the CEIA during the Project completion stage for completion check and acceptance review.

Table 5- 9 Balances of Fill-and-Cut for The Proposed Subprojects (unit:m³)

Contract No.	Estimated Volume of Fill	Estimated Volume of Cut	Estimated Volume of Borrow	Estimated Volume of Spoil	Notes
C 1.2			20,000		
C 1.3	16,975	97,761		80,786	
C 1.4	12,975	352,619.5	74,142	338,080	
C 1.5	193,870	101,630	152,014.5	32,408	
C 1.6					Not available
C 4.1	737,570	1,313,644	96,440	672,515	3 borrow pits, 6 spoil sites, 2 onsite concrete and 1 asphalt patch plants
Total	961,390	1,865,654.5	342,596.5	1,123,789	

Source: from the constructors but some imbalance error to be confirmed later

VI. PUBLIC CONSULTATION AND GRIEVANCE REDRESS STATUS

37. **Grievance Redress System.** The Project-specific GRM is under operation. A Project Complaint Center (PCC) for safeguards GRM was established in FIDC. The municipal government (Fuzhou EPB) nominated an officer to act as a focal point for contact with the PCC. The PMO and the municipal government issued public notices to inform the public within the Project area of the Grievance Redress Mechanism. The PCC and entry points' contact person names, phone numbers, and email address have been disseminated to the people through displays at the entrances of each construction site/constructor' site offices.
38. A full-time staff (Mr. Yang Chen, 18679478369) was appointed to be responsible for the daily operation management of environmental and social GRM in FIDC. The officer is independent of the Supervising Engineer and contractor/operator. The officer has experience and/or training in dealing with complaints and mediation of disputes, and the facilities to maintain a complaints database (if any) and to communicate with the Supervising Engineer, the PMO, the FMG (Fuzhou EPB), and also with complainants. No complaint has been reported so no such record. The below **Figure 6- 1 shows the Project Environmental GRM Management System in line with GRM in EMP**. These persons as entrance points were assigned prior to commencement of construction work, respectively. In the training in November 2014, the GRM was covered. Some information in the below **Table 6-1** is still not quite complete and will be updated in the next EMR to be submitted in this January 2016.
39. It is reported by FIDC, the constructor and the SE that there has been no environmental complaint raised so far. During the site visit in July 2015, some APs concerned about provision of utilities to resettlement houses (pls. refer to para. 27). This is outside the scope of resettlement compensation agreement, so it is not regarded as eligible complaint for this Project. However, FIDC helped those affected people (APs) apply for the relevant agencies (such as water supply, power supply and municipal drainage companies), and those associated facilities are expected to be installed in this August.

Figure 6- 1 Environmental GRM Management System

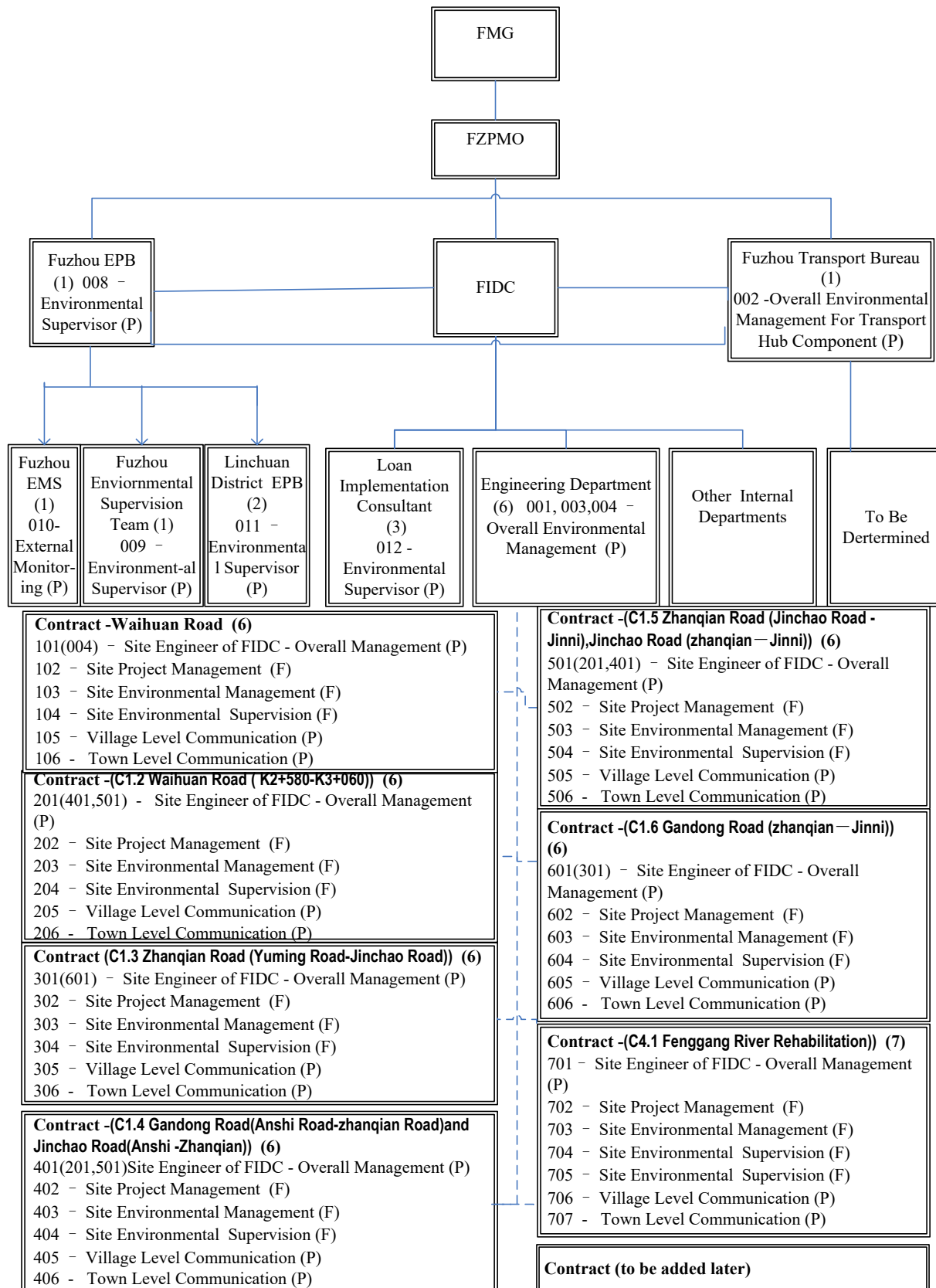


Table 6- 1 Contact List of Environmental GRM Entrance Points (to be added continuously)

Code	Name/ Position/ Agency	Responsibility	Contact Details	Date of Environmental Assignment
001	Mr. Liu Haiquan /Deputy General Manager /FIDC	Overall management of environmental affairs in FIDC, including coordinating with the external parities, monitoring and improving the project performances for roads and bridges components	Cell: +86-0-13907946066 Tel: +86 794 8257866 Fax: +86-794 Email: FZ_PMO@163.com	2013
002	Mr. Huang Zhiquan / Section Chief /Fuzhou Transport Bureau	Overall management of environmental affairs in Fuzhou Transport Bureau, including coordinating with the external parities, monitoring and improving the project performances for heating component	Cell: +86-0-13970437292 Tel: +86 794 Fax: +86-794 Email: FZ_PMO@163.com	2014
003	Mr. Yang Chen / Engineer /FIDC	Daily coordination of environmental affairs in FIDC, including coordinating with the external parities, monitoring and improving the project performances	Cell: +86-0-18679478369 Tel: +86 794 8257866 Fax: +86-794 Email: FZ_PMO@163.com	2014
004 (101)	Mr. Qiu Biaojun/ Director of Engineering Department /FIDC	Site management of environmental affairs in FIDC, including coordinating with the external parities, monitoring and improving the project performances for the Waihuan Road contract	Cell: +86-0- 13607948096 Tel: +86 794 8257866 Email: FZ_PMO@163.com	2013 (for Waihuan Road contract)
008	Miss. Zou Xiaohong, EIA Department /Fuzhou EPB	Environmental supervision, survey and issue corrective actions on environmental complaints	Tel:+86-794-12369	2013
009	Miss Li Hua /Environmental Supervisor/Fuzhou Environmental Supervision Team under Fuzhou EPB	Site environmental supervision, survey and propose corrective actions on environmental complaints	Cell: +86-0-13979483998 Tel:+86-794-12369 Fax: +86-794- Email:	2013
010	Mr. Xiao Yuxing /Fuzhou EMS under Fuzhou EPB	Externally site environmental quality monitoring	Cell: +86-13879495576 Tel: +86-794-8268705 Fax: +86-794- Email: 369390435@qq.com	2014
011	Linchuan district EPB	Environmental supervision for the contracts in Linchuan District, survey and issue corrective actions on environmental complaints for all the contracts	Cell: +86-0- Tel:+86-794-12369 Fax: +86-794- Email:	2013
012	Mr. Nie	Environmental technical support, assistance to coordinate	Cell: +86-18086056438	2014

Code	Name/ Position/ Agency	Responsibility	Contact Details	Date of Environmental Assignment
	Mingtao/independent external environmental monitoring consultant	with ADB	Tel/Fax: +86- Email: hjpmo@163.com	
101 (004)	Mr. Qiu/ Director of Engineering Department /FIDC	Site management of environmental affairs in TUCIC, including coordinating with the external parties, monitoring and improving the project performances for the Waihuan Road contract	Cell: +86-0- Tel: +86 794 8257866 Fax: +86-794 Email: FZ_PMO@163.com	2013 (for Waihuan Road contract)
102	Mr/Miss /Site Project manager of the constructor	On site management and decision making on general environmental affairs for the contract Waihuan Road contract	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2013
103	Mr Li Xuan /Site environmental manager of the constructor/ Nanchang Road and Bridge Company	On site daily environmental management affairs for the Waihuan Road contract	Cell: +8613361667066 Tel: +86-794- Fax: +86-794- Email:Lixuan19870207@126.com	2013
104	Mr. Wu Shenrong /Site environmental manager of the supervisor/ Changda Supervision Co., Ltd.	On site daily supervision on environmental management for the Waihuan Road contract	Cell: +8613479426408 Tel: +86-794- Fax: +86-794- Email:	2013
105	/Villager Leader/	Village Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2013
106	/Officer of Township Government/ XX Town of Linchuan District	Town Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2013
201 (401, 501)	Mr. Li Yongliang/ Engineer of Engineering Department /FIDC	Site management of environmental affairs in TUCIC, including coordinating with the external parties, monitoring and improving the project performances for the contract(C1.4 Gandong Road(Anshi Road-zhanqian Road)and Jinchao Road(Anshi -Zhanqian))	Cell: +86-0-13879481979 Tel: +86 794 8257866 Fax: +86-794 Email: FZ_PMO@163.com	2014
202	Mr Liu Shujing/Site Project	On site management and decision making on general	Cell: +86-15207945309	2014

Code	Name/ Position/ Agency	Responsibility	Contact Details	Date of Environmental Assignment
	manager of the constructor/ Jiangxi Tongwei Road Construction Group Co., Ltd.	environmental affairs for the contract(C1.2 Waihuan Road (K2+580-K3+060))	Tel: +86-794- Fax: +86-794- Email:	
203	Mr. Wang Wenbang /Site environmental manager of the constructor/ Jiangxi Tongwei Road Construction Group Co., Ltd.	On site daily environmental management affairs for the contract(C1.2 Waihuan Road (K2+580-K3+060))	Cell: +86-15720909021 Tel: +86-794- Fax: +86-794- Email:	2014
204	Mr. Zhang Yigeng /Site environmental manager of the supervisor/ Changda Supervision Co., Ltd.	On site daily supervision on environmental management for the contract(C1.2 Waihuan Road (K2+580-K3+060))	Cell: +86-15697883428 Tel: +86-794- Fax: +86-794- Email:	2014
205	/Villager Leader/	Village Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2014
206	/Officer of Township Government/ XX Town of Linchuan District	Town Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2014
301 (601)	Mr. Bai Shaofeng/ Engineer, Engineering Department /FIDC	Site management of environmental affairs in TUCIC, including coordinating with the external parties, monitoring and improving the project performances for the contract (C1.3 Zhanqian Road (Yuming Road-Jinchao Road))	Cell: +86-0- 13657042874 Tel: +86 794 8257866 Fax: +86-794 Email: FZ_PMO@163.com	2014
302	Mr. Jie Yang /Site Project manager of the constructor/ Guangxi Huanan Construction Group Co., Ltd.	On site management and decision making on general environmental affairs for the contract (C1.3 Zhanqian Road (Yuming Road-Jinchao Road))	Cell: +86-13870482322 Tel: +86-794- Fax: +86-794- Email:	2014

Code	Name/ Position/ Agency	Responsibility	Contact Details	Date of Environmental Assignment
303	Miss Liu Lijuan /Site environmental manager of the constructor/ Guangxi Huanan Construction Group Co., Ltd.	On site daily environmental management affairs for the contract (C1.3 Zhanqian Road (Yuming Road-JinchaoRoad))	Cell: +86-13177661661 Tel: +86-794- Fax: +86-794- Email: 1390579627@qq.com	2014
304	Mr. Zhang Yigeng/Site environmental manager of the supervisor/ Changda Supervision Co., Ltd.	On site daily supervision on environmental management for the contract (C1.3 Zhanqian Road (Yuming Road-Jinchao Road))	Cell: +86-15697883428 Tel: +86-794- Fax: +86-794- Email: 1390579627@qq.com	2014
305	/Villager Leader/	Village Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2014
306	/Officer of Township Government/ XX Town of Linchuan District	Town Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2014
401 (201, 501)	Mr. Li Yongliang/ Engineer of Engineering Department /FIDC	Site management of environmental affairs in TUCIC, including coordinating with the external parties, monitoring and improving the project performances for the contract(C1.4 Gandong Road(Anshi Road-zhanqian Road)and Jinchao Road(Anshi -Zhanqian))	Cell: +86-0-13879481979 Tel: +86 794 8257866 Fax: +86-794 Email: FZ_PMO@163.com	2014
402	Mr. Huang Jiangao /Site Project manager of the constructor/ Kunpeng Construction Group Co., Ltd.	On site management and decision making on general environmental affairs for the contract(C1.4 Gandong Road(Anshi Road-zhanqian Road)and Jinchao Road(Anshi -Zhanqian))	Cell: +86-18907940607 Tel: +86-794- Fax: +86-794- Email:	2014
403	Mr. Du Xiaoliang /Site environmental manager of the constructor/ Kunpeng Construction Group Co., Ltd.	On site daily environmental management affairs for the contract(C1.4 Gandong Road(Anshi Road-zhanqian Road)and Jinchao Road(Anshi -Zhanqian))	Cell: +86-13807949111 Tel: +86-794- Fax: +86-794- Email:	2014
404	Mr. Zhang Hegeng /Site environmental manager of	On site daily supervision on environmental management for the Waihuan Road contract	Cell: +86-13677979595 Tel: +86-794-	2014

Code	Name/ Position/ Agency	Responsibility	Contact Details	Date of Environmental Assignment
	the supervisor/ Jiangxi Hengshi Construction Supervision Company		Fax: +86-794- Email:	
405	/Villager Leader/	Village Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2014
406	/Officer of Township Government/ XX Town of Linchuan District	Town Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2014
501 (201, 401)	Mr. Li Yongliang/ Engineer of Engineering Department /FIDC	Site management of environmental affairs in TUCIC, including coordinating with the external parties, monitoring and improving the project performances for the contract(C1.4 Gandong Road(Anshi Road-zhanqian Road)and Jinchao Road(Anshi -Zhanqian))	Cell: +86-0-13879481979 Tel: +86 794 8257866 Fax: +86-794 Email: FZ_PMO@163.com	2014
502	Mr. Huang Zhenhua /Site Project manager of the constructor/ YichunTongda Road & Bridge Construction Co., Ltd.	On site management and decision making on general environmental affairs for the contract(C1.5 Zhanqian Road (Jinchao Road -Jinni),Jinchao Road (zhanqian – Jinni))	Cell: +86-18296499776 Tel: +86-794- Fax: +86-794- Email:	2014
503	Miss Li Rong /Site environmental manager of the constructor/ YichunTongda Road & Bridge Construction Co., Ltd.	On site daily environmental management affairs for the contract(C1.5 Zhanqian Road (Jinchao Road - Jinni),Jinchao Road (zhanqian – Jinni))	Cell: +86-15870786933 Tel: +86-794- Fax: +86-794- Email:	2014
504	Mr. Zou Guisheng /Site environmental manager of the supervisor/ Jiangxi Hengshi Construction Supervision Company	On site daily supervision on environmental management for the contract(C1.5 Zhanqian Road (Jinchao Road - Jinni),Jinchao Road (zhanqian – Jinni))	Cell: +86-18970475156 Tel: +86-794- Fax: +86-794- Email:	2014
505	/Villager Leader/	Village Level Communication	Cell: +86- Tel: +86-794-	2014

Code	Name/ Position/ Agency	Responsibility	Contact Details	Date of Environmental Assignment
			Fax: +86-794- Email:	
506	/Officer of Township Government/ XX Town of Linchuan District	Town Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2014
601 (301)	Mr. Bai Shaofeng/ Engineer, Engineering Department /FIDC	Site management of environmental affairs in TUCIC, including coordinating with the external parties, monitoring and improving the project performances for the contract (C1.3 Zhanqian Road (Yuming Road-Jinchao Road))	Cell: +86-0- 13657042874 Tel: +86 794 8257866 Fax: +86-794 Email: FZ_PMO@163.com	2015
602	Mr. Wan Hui /Miss /Site Project manager of the constructor	On site management and decision making on general environmental affairs for the contract(C1.6 Gandong Road (zhanqian—Jinni))	Cell: +86-15179404939 Tel: +86-794- Fax: +86-794- Email:	2015
603	Mr. Huang Chungeng /Site environmental manager of the constructor/ Zhushan Construction Group Co., Ltd.	On site daily environmental management affairs for the contract(C1.6 Gandong Road (zhanqian—Jinni))	Cell: +86-18379464247 Tel: +86-794- Fax: +86-794- Email: 1390579627@qq.com	2015
604	Mr. Zhang Huiming /Site environmental manager of the supervisor/ Changda Supervision Co., Ltd.	On site daily supervision on environmental management for the contract(C1.6 Gandong Road (zhanqian—Jinni))	Cell: +86-13879493605 Tel: +86-794- Fax: +86-794- Email:	2015
605	/Villager Leader/	Village Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2015
606	/Officer of Township Government/ XX Town of Linchuan District	Town Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2015
701	Mr. Zhu Zhiwu/ Engineer,Engineering	Site management of environmental affairs in TUCIC, including coordinating with the external parties,	Cell: +86-0- 15179454937 Tel: +86 794 8257866	2015

Code	Name/ Position/ Agency	Responsibility	Contact Details	Date of Environmental Assignment
	Department /FIDC	monitoring and improving the project performances for the contract(C4.1 Fenggang River Rehabilitation)	Fax: +86-794 Email: FZ_PMO@163.com	
702	Mr Yang Qizhu/Site Project manager of the constructor/	On site management and decision making on general environmental affairs for the contract(C4.1 Fenggang River Rehabilitation)	Cell: +86-13647900929 Tel: +86-794- Fax: +86-794- Email:	2015
703	Mr XX /Site environmental manager of the constructor/ Zhushan Construction Group Co., Ltd.	On site daily environmental management affairs for the contract(C4.1 Fenggang River Rehabilitation)	Cell: +86 Tel: +86-794- Fax: +86-794- Email: 126.com	2015
704	Mr. Li Haihong, hydraulic engineer/Site environmental manager of the supervisor/ Guangdong Hehai Construction Engineering Company	On site daily supervision on environmental management for the contract(C4.1 Fenggang River Rehabilitation)	Cell: +86-15070425431 Tel: +86-794- Fax: +86-794- Email:	2015
705	Mr. Li Xingming, landscaping engineer /Site environmental manager of the supervisor/ Jiangxi Zhongxiang Construction Supervision Company	On site daily supervision on environmental management for the contract(C4.1 Fenggang River Rehabilitation)	Cell: +86-13970429412 Tel: +86-794- Fax: +86-794- Email:	2015
706	/Villager Leader/	Village Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2015
707	/Officer of Township Government/ XX Town of Linchuan District	Town Level Communication	Cell: +86- Tel: +86-794- Fax: +86-794- Email:	2015

40. The public consultation plan in the next reporting period sees the below Table 6-2.

Table 6- 2 Public Consultation Plan in the Next Reporting Period

Organizer	Approach	Times	Subject	Participants	Implementation status
A. Project Preparation, Pre-construction					
IAs, contractors, PCC	Information disclosure on construction site information boards	Throughout project implementation	Project information, planned interventions including timeframe, responsibilities, GRM structure and entry points, contact information	All residents within project's are of influence	Implemented during the Project preparation stage.
B. Construction					
IAs, Fuzhou PMO, LIEC	Questionnaire survey, or interview	At least once a year	Actual construction impacts, complaints, comments and suggestions from affected public and stakeholders; adjusting mitigation measures if necessary; comments to the GRM.	Residents within construction area, and affected stakeholder enterprises and agencies	FIDC and LIEC conducted a public consultation on 8 Jul. 2015. . The details see the para. 27. Ongoing public consultation with affected persons will be enhanced throughout implementation in future. The external monitor and FIDC will undertake ongoing public consultation with affected persons throughout implementation.

Organizer	Approach	Times	Subject	Participants	Implementation status
	Public workshop	At least once a year	Adjustment of mitigation measures if necessary, construction impacts, comments and suggestions	Representatives of residents and other stakeholders	To be strengthened in the next reporting period, if required.

VII. INSTITUTIONAL STRENGTHENING AND TRAINING

41. The implementation status of institutional strengthening and training program is shown as Table 7-1.

Table 7- 1 Implementation status of Institutional Strengthening and Training Program

Activities	Targeted Agencies/Attendees	Contents	Implementation status
Institutional Strengthening (Newly added in comparison with the EMP)			
Institutional Strengthening	Fuzhou PMO, IAs(FIDC, Fuzhou Transport Bureau), Fuzhou EPB	<p>Defining institutional arrangements for environmental management, monitoring, and supervision; defining positions and responsibilities; appointing and recruiting personnel;</p> <p>Recruiting and contracting EMC for external environmental monitoring;</p> <p>Recruiting and contracting a LIEC for the overall Project, for environmental management consultancy</p> <p>Environmental Management System Strengthening and Improvement.</p>	<p>Fulfilled. See Chapter II.</p> <p>An independent external environmental monitoring consultant was contracted in March 2014.</p> <p>Environmental specialist is hired for FDIC and included in the loan implementation international consulting firm.</p> <p>Established.</p>
Environmental Management Clauses and Protocols	Fuzhou PMO, IAs(FIDC, Fuzhou Transport Bureau), Contractors ;CSCs	<p>Developing environmental management clauses and incorporating them into construction and operational contracts</p> <p>Developing/refining environmental monitoring protocols</p> <p>Developing environmental emergency response procedures</p>	<p>Environmental protection clauses were developed and incorporated into construction contracts.</p> <p>Environmental monitoring program was prepared. See Chapter III.</p> <p>The environmental emergency response procedures for construction activities are at place.</p>
Training			
ADB's and PRC's environmental laws, regulations and policies	Fuzhou PMO, IAs(FIDC, Fuzhou Transport Bureau), contractors	ADB's SPS and other environmental regulations; Project applicable PRC's environmental laws, policies, standards and regulations; International environmental management practice in civil constructions;	Training session was organized by the independent external environmental monitoring consultant in November, 2014.

Activities	Targeted Agencies/Attendees	Contents	Implementation status
Grievance Redress Mechanism	Fuzhou PMO, IAs(FIDC, Fuzhou Transport Bureau), PCC, IAs, GRM entry points, Fuzhou EPB	GRM structure, responsibilities, timeframe Types of grievances, eligibility assessment Gender responsive GRM Reporting procedures.	Training session was organized by the independent external environmental monitoring consultant in November, 2014.
EMP implementation	Fuzhou PMO, IAs(FIDC, Fuzhou Transport Bureau), contractors, CSCs	Responsibility and duties during construction, management and environmental protection; Task of environmental protection during construction; Key environmental protection contents during construction; Various environmental forms and reporting EMP improvement and corrective actions; Based on the actual case, adjustment and improvement of EMP.	Training session was organized by the independent external environmental monitoring consultant in November, 2014.
Emergency response	FMG, FWRB, Fuzhou PMO, IAs(FIDC, Fuzhou Transport Bureau), contractors, CSCs	Environmental accident, crisis and mitigation measures; Emergency response team, procedure and actions. Flood and mudslide emergency planning Flood early warning system	Not yet. (ideally in Oct/Nov 2015).
Environmental technologies	Fuzhou PMO, IAs(FIDC, Fuzhou Transport Bureau), contractors	Relevant technologies and good construction practice for environmental protection.	Not yet. (ideally in Oct/Nov 2015).
Theories and practices on soil erosion protection	Fuzhou PMO, IAs(FIDC, Fuzhou Transport Bureau), FWRB, and contractors	Risks for soil erosion and other geologic hazards; Mitigation measures for soil erosion protection.	Not yet. (ideally in Mar/Apr 2016 because rainy season usually lasts from Apr to Jun 2016).
Environmental monitoring, inspection, and reporting	Fuzhou PMO, IAs(FIDC, Fuzhou Transport Bureau), Fuzhou EPB, Fuzhou EMS and contractors	Monitoring and inspection methods, data collection and processing, interpretation of data, reporting system.	Training session was organized by the independent external environmental monitoring consultant in November, 2014.

42. On Nov 14 of 2014, a tailor-made half-day's training &workshop on EMP implementation was conducted by the external environmental monitoring expert who was recruited in March of 2014. About 15 persons, from all the IAs/constructors/SEs, attended the training seminar/workshop which was organized by Fuzhou PMO. The attendees showed their strong interests and enthusiasms during the training. In the future, various hand-on trainings still were provided to the FIDC, constructor and SE. There are six civil works contracts currently under construction. To enhance site

environment management, it is suggested that the theme training on environmental technologies be conducted in the future reporting period (ideally in Oct/Nov 2015).

Picture First Environmental Training



VIII. KEY ENVIRONMENTAL ISSUES AND NEXT-STEP ACTION PLAN

A. Key Issues Identified

43. Based on the results of above mentioned monitoring and inspection, there are no significant environmental issues raised during the reporting period. No matters of breach or non-compliance have aroused too.

B. Action Plan of Environmental Monitoring & Evaluation (M&E) In the 2nd Half Of 2015

44. It is expected that most of civil contracts of the Project excluding the BRT component will be under construction in the second half of 2015 because the rainy season has almost gone. The focus of environmental M&E will shift to the following three aspects. a) Enhance the implementation of environmental management plan and mitigation measures to minimize the negative environmental impact of the projects under construction; b) Strengthen water, air and acoustic quality analysis. Pay a close attention to the causes of incompliance and remediation measures to secure safe water supply, air quality and acoustic environment. c) Emphasize soil erosion protection of construction site, including road components in the Project. An action plan is set up in Table 8-1.

Table 8- 1 Action Plan for Environmental M&E In The Second Half Of 2015

Action	Time frame	Implementation Agency	Supervision Agency	Notes
Enhance the implementation of environmental management plan and mitigation measures to minimize the negative environmental impact of the components under construction	Continuous in the second half of 2015	Contractors	FZPMO(FIDC);Fuzhou EPB; SEs; LIEC	Focus on feedback and adjustment.
Strengthen water, air and acoustic quality analysis. Pay a close attention to the causes of incompliance and remediation measures to secure safe water supply, air quality and acoustic environment	Continuous in the second half of 2015	Contractors	FZPMO(FIDC);Fuzhou EPB; SEs; LIEC	Focus on causes of incompliance and remediation measures
Emphasize soil erosion protection of construction site, including road components in the Project	Continuous in the second half of 2015	Contractors	FZPMO(FIDC);Fuzhou EPB; SEs; LIEC	Focus on feedback and adjustment.
Finish monthly internal monitoring reports	Continuous in the second half of 2015	Contractors and/or SEs,	FZPMO(FIDC);Fuzhou EPB; LIEC	Focus on feedback and adjustment.

Action	Time frame	Implementation Agency	Supervision Agency	Notes
Finish 4 th Environmental Monitoring Report (2 nd half of 2015)	Jan of 2016	LIEC	FZPMO(FIDC);Fuzhou EPB	Focus on causes of noncompliance and remediation measures
Environmental Training	Continuous in the second half of 2015	LIEC	FZPMO(FIDC);Fuzhou EPB	As practical as possible, workshop involving if required

IX. CONCLUSION

A. Overall Progress of Implementation of Environmental Management Measures

45. Based on the external environmental monitoring of Jiangxi Fuzhou Urban Integrated Infrastructure Improvement Project, it is found that the contractors of the contract under construction have undertaken relevant environmental mitigation measures specified in the project EIA reports, and shown enough concern on the possible negative environmental impact due to the project implementation.
46. The potential adverse impacts of noise, dust and wastewater generated during construction have been minimized by relevant mitigation measures and there was no significant impact on nearby sensitive points.

B. Problems Identified and Actions Recommended

47. Based on the site survey and monitoring, the relevant recommendations are listed as below:

Table 9-1 Suggestions and Recommendations

No.	Suggestions and recommendations	Time Framework	Implementati on Agencies	Supervision Agencies
a)	The contractors should strengthen site management, and minimize the negative impact on the environment.	Every civil works contract implementation period(from starting to ending)	Contractors	FZPMO(FDIC); CSCs; Fuzhou EPB; LIEC
b)	It is necessary to strengthen the internal monitoring and supervision, along with good practices of environment, healthy, and safety (EHS) for training.	Mobilization stage of every civil works contract package. Every civil works contract implementation period(from starting to ending)	Contractors; CSCs	FZPMO(FDIC); Fuzhou EPB; LIEC
c)	More tailor-made training should be provided for all relevant environmental management agencies to improve the environmental management, monitoring and reporting during construction period.	Mobilization stage of every civil works contract package. Every civil works contract implementation period(from starting to ending)	Contractors; CSCs; FDIC; LIEC	Fuzhou EPB
d)	More efforts are required on water and soil conservation to prevent soil erosion efforts in the next stage. It is recommended that water and soil conservation at borrow areas and construction waste disposal sites be better considered and strengthened to	Every civil works contract implementation period (from starting to ending).	Contractors	FZPMO(FDIC); CSCs; Fuzhou Water Resource Management Bureau; LIEC

No.	Suggestions and recommendations	Time Framework	Implementati on Agencies	Supervision Agencies
	reduce soil erosion during rainy seasons.			

X. APPENDICES

1. Applicable Environmental Standards
2. Site Photographs
3. Implementation Status On The Impacts and Mitigation Measures during Construction of All Components
4. Attendance List from The Training
5. Responses To ADB's Comments On 7 August Of 2015

APPENDIX 1 APPLICABLE ENVIRONMENTAL STANDARDS

(1) Water Environment

Table A1- 1 Environmental Functional Zoning for Surface Water along the Proposed Project

No.	Water Body	Scope	Functional Category	Environmental Quality Standard for Surface Water (GB3838-2002)
1	Fenggang River		Class III	Class III

Table A1- 2 Quality Standard Limit for Surface Water Environment (Class III)

Unit: mg/L (exclusive of PH value, Coli-form)

No.	Item	Standard Limit	No.	Item	Standard Limit
1	pH	6~9	14	Lead	0.05
2	Dissolved Oxygen (DO)	5	15	Cadmium	0.005
3	Index of Permanganate	6	16	Copper	1.0
4	Chemical Oxygen Demand	20	17	Zinc	1.0
5	Biochemical Oxygen Demand	4	18	Oil	0.05
6	Total Nitrogen	1.0	19	Fluoride	1.0
7	SS	30	20	Sulphate	250
8	Sulphide	0.2	21	Chloride	250
9	Volatile Phenol	0.005	22	Total Phosphorus	0.2
10	Cyanide	0.2	23	Anionic Surfactant	0.2
11	Arsenic	0.05	24	Coli-form	10000/L
12	Mercury	0.0001	25	Ammonia Nitrogen	1.0
13	Hexavalent chrome	0.05	XI.	XII.	XIII.

(2) Ambient Air

Table A1- 3 Ambient Air Quality Standard (Class II)

Unit: mg/m³

Standard	No.	Item	Daily Average
GB3095-1996; and its revising list issued in 2000 by Minister of Environmental Protection	1	TSP	0.30

(3) Acoustic Environment

Table A1- 4 Acoustic Environment Quality Standard
(GB3096-2008) Unit: Leq[dB(A)]

Category	Range of Usage	Noise Limit	
		Daytime	Nighttime
Class I	Regions dominated by residence, cultural and educational organizations	55	45
Class II	Residential, commercial and industrial confounding area	60	50
Class 4a	On both sides of the urban trunk road	70	55

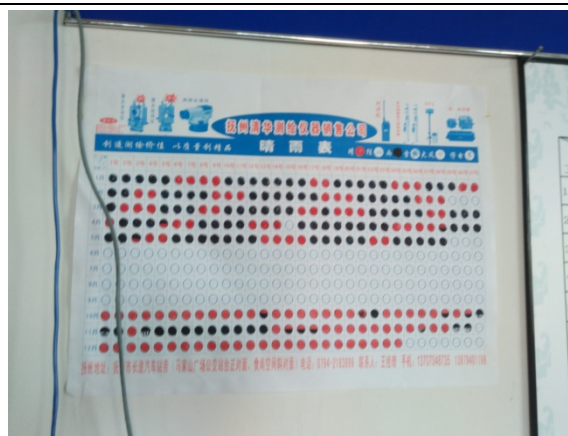
(4) Water Erosion Intensity Classification

Level	Erosion modulus (t/km ² per year)
I	very slight erosion < 500
II	slight erosion 500–2,500
III	moderate erosion 2,500–5,000
IV	intense erosion 5,000–8,000
V	very intense erosion 8,000–15,000

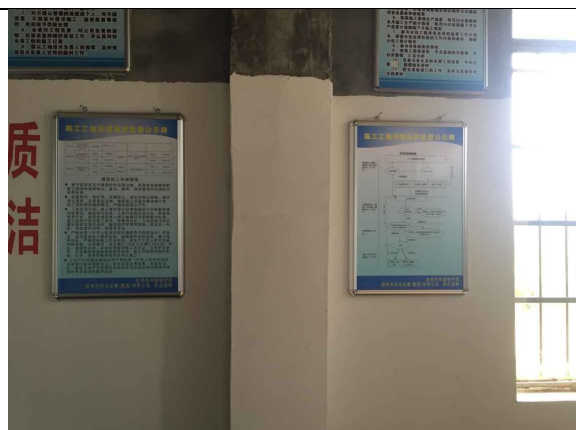
APPENDIX 2 PHOTOGRAPHS

C1.3 Zhanqian Road (Yuming Road-Jinchao Road)

Site office shared by C1.3 and C1.6 constructors



Barometer of C1.3



Signboards on environmental supervision and GRM

C1.4 Gandong Road(Anshi Road-zhanqian Road)and Jinchao Road(Anshi -Zhanqian)

Site office of C1.4 constructor



C1.4-section of Jinchao Ave.



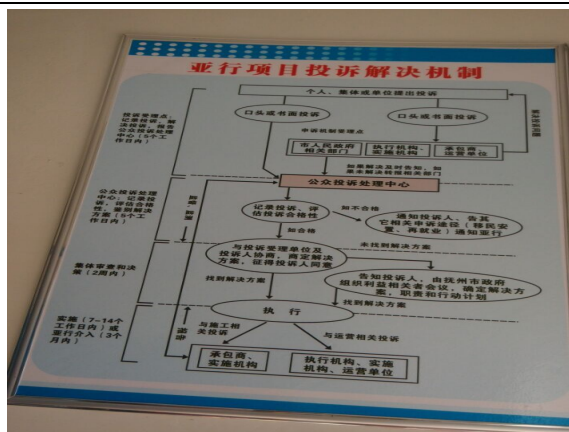
C1.4-section of Jingchao Ave.(2)



Ground foundation of resettlement houses



Signboards on environmental supervision



Signboards on environmental GRM

C1.5 (Zhanqian Road (Jinchao Rd – Jinni Rd) and JinchaoRoad(Zhanqian Rd – Jinni Rd))



Signboards on environmental supervision and GRM

C1.6 (Gandong Road (Zhanqian Rd – Jinni Rd))

	
<p>Signboards on environmental supervision and GRM</p>	
<p>C4.1 Fenggang River Improvement (Phase II)</p>	
	
<p>Entrance of C4.1</p>	<p>Spoiled soil at the entrance of C4.1</p>
	
<p>Janitor room of C4.1</p>	<p>Spoiled soil of C4.1</p>

The image shows two blue signboards at a construction site. The left signboard is titled "亚行项目投诉解决机制" (Asian Development Bank Project Complaint Resolution Mechanism) and contains a flowchart. The right signboard is titled "施工工地环境保护监督公示牌" (Construction Site Environmental Protection Supervision Publicity Board) and lists various environmental protection measures and contact information. A red flag is visible in the background.

Signboards on environmental supervision and GRM

The image shows a blue signboard titled "施工工地环境保护" (Construction Site Environmental Protection). It contains a table with project details and a list of environmental protection measures. The table includes columns for project name, construction unit, construction unit, and supervision unit, along with contact information for each.

项目名称	建设单位	施工单位	监理单位
江西省抚州市凤岗河疏浚工程	抚州市投资发展(集团)有限公司	江西洪洲园林工程有限公司 远海建工(集团)有限公司	广东河南工程咨询有限公司 江西中祥建设监理有限公司
联系人	联系人	联系人	联系人
联系电话	联系电话	联系电话	联系电话
15179454937	13647900029	13803548801	13970429412
			13079483998

Signboard on environmental supervision

APPENDIX 3 IMPLEMENTATION STATUS ON THE IMPACTS AND MITIGATION MEASURES DURING CONSTRUCTION OF ALL COMPONENTS (As of 30 June 2015)

Aspect	Potential impact and source	Significance ²	Mitigation	Residual impact ^b comments	Component	Implementation Status And Compliance with EMP
Air quality	Emissions from construction vehicles and machinery	- Medium	All vehicles, equipment and machinery used for construction will be regularly maintained in accordance with manufacturers specifications to ensure that the pollution emission levels conform to the standards prescribed; All equipment and machinery to be operated in accordance with manufacturer's specifications; All construction camps, depots, and storage areas be located at least 200 m from sensitive areas; Regular monitoring to define areas of significant air pollution.	Negligible	All components; BRT most sensitive	Complied With. BRT component is under design stage.

²(Low, Medium, High) + = positive, 0 =neutral, - = negative

Aspect	Potential impact and source	Significance ²	Mitigation	Residual impact ^b comments	Component	Implementation Status And Compliance with EMP
	Construction related dust from the movement of vehicles to/from site	- Medium	Dust suppression through regular watering and cleaning will be used on unsealed road surfaces, asphalt mixing sites and temporary service areas. Setting of speed limits on dirt roads. Reducing unnecessary movement of construction vehicles on unpaved roads and sites;	Negligible	All components	Complied with. No asphalt mixing plant is required. Instead, there is a concrete mixing plant on site shared by all the contractors.
	Vehicles hauling materials will generate dust nuisance.	- Medium	Vehicles delivering material will be covered.	Negligible	All components	Complied with
	Emission of odor from excavated spoil	-Medium	Monitor odor during excavation and dredging activities. Ensure any odorous material is quickly covered with non-odorous material, to minimize emissions. If it is not possible to cover material the same working day, inform residents that may be potentially affected of temporary nature and the grievance redress mechanism. Avoid works with odorous material during wind conditions that are likely to result in widespread odor dispersion.	Negligible	All components, most risk from Fenggang River works	Complied with. Fenggang River works just started in Mar 2015, but terminated due to long rainy season, and will continue construction in Jul 2015.
Noise	High noise levels from construction vehicles and machinery	-Medium	Impose speed limits on all construction vehicles; No night time working, to reduce the potential impacts on sensitive uses Sound proofing of all vehicles and equipment; Stationary units to be located in sound absorbing areas; All construction camps, depots and storage areas to be located at least 200 m from sensitive areas; Regular monitoring to define areas of noise sensitivity	Negligible	All components: BRT most sensitive	Complied with. BRT component is under design stage.

Aspect	Potential impact and source	Significance ²	Mitigation	Residual impact ^b comments	Component	Implementation Status And Compliance with EMP
	Protection of workers Health and Safety	- Low	Noise standards for industrial enterprises will be strictly enforced to protect construction workers from noise impacts, in accordance with international health, safety and environment procedures.	Low	All components	Complied with
Surface water	Pollution of Fenggang river and canals by fuels and oils	- Medium	Fuel storage and refueling sites located away from Fenggang river. Extraction of water for construction only to occur in accordance with local and national regulations	Negligible	Fenggang River	Complied with. Fenggang River works just started in Mar 2015, but terminated due to long rainy season, and will continue construction in Jul 2015.
	Construction materials blocking drainage and producing contaminated run-off.	- Medium	All water channels and drainage channels must be kept clear of debris and immediately rebuilt if needed. Drainage from all sites to be channeled to discharge via percolation area and for sensitive sites through a settling pond with an appropriate retention period. Ensure no short term flooding occurs.	Negligible	All components	Complied with
Ground water	Pollution of groundwater by fuels and oils spillage.	- Low	Construction vehicles and equipment will be maintained and refueled at protected refueling stations.	Negligible	All components	Complied with.

Aspect	Potential impact and source	Significance ²	Mitigation	Residual impact ^b comments	Component	Implementation Status And Compliance with EMP
	Exposure and contamination of groundwater during construction	-Low	All construction activities to ensure no spillage of materials. Regular monitoring to take place to ensure no contamination takes place.	Negligible	All components but specifically Urban Transport Hub.	Complied with. Urban Transport Hub component is still under design stage.
Soil	Soil erosion due to inadequate and immediate application of stabilization techniques.	- Medium	Re-vegetate barren cuts and work areas as soon after the work has been completed as is practical. Apply topsoil on all vacant sites as soon as practical	Negligible	All components except BRT	Basically complied with. The constructors submitted CEMPs including soil erosion prevention measures. The details see para. 27 and para. 36.
	Damage to soil through compaction at temporary work areas such as storage areas and transport routes.	- Medium	Strip off topsoil initially and then de-compact and reinstate topsoil for effective reinstatement in accordance with Government requirements.	Negligible	All components except BRT	
	Contamination of soil from fuel and lubricants.	- Medium	All fuels and oils stored in accordance with international practice; bunded and impervious flooring.	Negligible	All components except BRT	
Flora	Loss or damage to vegetation	- Medium	Replanting of trees and restoration of impacted areas by de-compaction and reinstatement of topsoil.	Negligible	All components	Complied with.
	Failure to properly manage/store topsoil, leading to degraded and substandard site reclamation and re-vegetation.	- Medium	Clearly defined topsoil storage and handling in contract specifications, and follow up with regular inspection, monitoring and reporting.	Negligible	All components	Complied with.
Fauna	Loss, damage or disruption to fauna due to unnecessary and un-approved expansion in construction working areas, soil compaction.	- Low	Contractor will be directed not to disrupt or damage the fauna and their habitats.	Negligible	All components except BRT	Complied with.

Aspect	Potential impact and source	Significance ²	Mitigation	Residual impact ^b comments	Component	Implementation Status And Compliance with EMP
Social: Community economic activity	Community loses access to homes and businesses, affecting income generating activities.	- Medium	Consult with local officials to establish an adequate detour plan and sufficient access to areas cut off or constrained by the construction work	Medium and will depend of effectiveness of the plans implemented.	All components	To be reflected in the resettlement monitoring report.
Social: Construction camps	Community tension and disruption.	- Medium	Community members and contractors to meet and discuss issues. Evaluate locations for camps. Develop camp management rules. Develop and implement a Project Induction training course that is mandatory for all workers; this will contain health and safety, environmental and social context components.	Minor	All components	Complied with.
Archaeology and cultural heritage	Potential loss and damage to cultural resources not defined in EIA	- Low	Develop and implement a Chance Finds Protocol, including maintaining a watching brief during works, with clear procedures for protection and documentation. The EIA indicated that there were no cultural or archaeological remains, but some evidence may be found during construction activities and should be recorded.	Medium	All components except BRT	Not applicable so far
Land: Agriculture	Damage to agricultural crops and lands, including drainage and irrigation infrastructure.	- Medium	Liaise effectively with affected persons before start of construction, maintain dialogue, develop a grievance procedure, strictly control machinery and vehicle access and reinstate all affected areas.	Minor	All components except BRT	Complied with.
Land: Livestock	Livestock resources damaged by machinery and vehicles.	- Medium	Liaise effectively with affected persons before start of construction, maintain dialogue, develop a grievance procedure, strictly control machinery and vehicle access, consider fencing for protection, and discuss livestock crossing points.	Minor	All components except BRT	Complied with.
Land: Property loss	Damaged properties and those required to be demolished to facilitate the construction works.	- High	Develop and implement a compensation scheme that is compliant with ADB procedures (Resettlement Action Plan). Provide for compensation and emergency management for any accidental damage due to close proximity of works to properties. See Resettlement Plan.	Potential medium or low adverse effect, depending on the success of the compensation arrangements.	All components	To be reflected in the resettlement monitoring report.

Aspect	Potential impact and source	Significance ²	Mitigation	Residual impact ^b comments	Component	Implementation Status And Compliance with EMP
Traffic	Traffic disruption and diversion	- High	Develop and implement effective traffic management plans and make them publically available. Give advance notice of any diversions and closures. Install warning signs.	Negligible	All components	Complied with.
Traffic: Community safety	Residents injured or disturbed by construction activities in proximity to residences and businesses.	- High	Conduct safety awareness campaigns, focusing on schools and children. Develop an effective method statement for construction, in consultation with residents.	Residual impacts will depend on the effectiveness of the campaigns.	All components	Complied with.
Traffic management	Both through traffic and local traffic disrupted due to road closures and restrictions during lifting and overhead works	- Medium	Develop an effective traffic management plan for through traffic that also minimizes disruption to residents.	Potential medium or low adverse effect, depending on the success of the traffic arrangements.	All components	Complied with.
Waste	Contamination of soil or water resources.	- Medium	Contaminated or hazardous waste such as bitumen waste to be disposed of in selected areas & approved by supervision consultants. All waste disposal to comply with a Waste Management Plan to be developed at the start of construction.	Minor.	All components	Complied with.
	Construction waste not being disposed of appropriately	-Medium	Where reuse and recycling not possible all construction waste to be taken off site in accordance with local requirements and national regulations		All components	Complied with.
Hazardous material use and storage	Soil and water pollution.	- Medium	Construction vehicles and equipment will be maintained and refueled at protected refueling stations. All storage and handling sites located away from Fenggang river and sensitive uses.	Negligible		Complied with.
Worker HSE	Workers injured during construction	- Medium	Implement international HSE standards in all contracts.	Minor	All components	Complied with.

Aspect	Potential impact and source	Significance ²	Mitigation	Residual impact ^b comments	Component	Implementation Status And Compliance with EMP
Workers camps	Spread of disease (including STIs)	- Low	Conduct awareness campaigns for camp workers, and if relevant, nearby communities.	Minor	All components	Complied with.
	Water and soil pollution from sewage.	- Medium	The sewage system for such camps will be properly designed and built so that no water pollution takes place. Such facilities will be decommissioned at end of the construction period. All waste to be disposed off site at approved and managed landfills.	Minor		Complied with.
Encroachment by contractor	Land resources damaged by contractor using additional land illegally.	- Medium	Identify work areas with contractor(s) and describe system of approvals for extensions and fines for violations.	Negligible	All components	Complied with.
Service and utilities disruption.	Services disrupted by large scale construction works.	- Low	Develop an effective method statement for construction, in consultation with the residents, local administration and owner companies.	Potential adverse effect low	All components	Complied with.

^a Significance is assessed assuming no implementation of mitigation measures.

^b Residual impact is the remaining impact assuming that mitigation measures have been successfully implemented.

APPENDIX 4 ATTENDANCE LIST FROM THE TRAINING

Table A4: Attendance List From The Training (English translation)
(On 14 Nov 2014)

Component	Contract	Contractor \$CSC	Name and contacts
FIDC			Yang Chen
FIDC: other three staffs from engineering department and financial department			
(i) Four station access roads	C1.1	Contractor: Nanchang Road and Bridge Company ¹	
	C1.2	Contractor Jiangxi Tongwei Road Construction Group Co., Ltd.	Wu Xiaoding 18707944229
		CSC: Jiangxi Changda	Jiang Quansheng 15870754415
	C1.3	Contractor Guangxi Huanan Construction Group Co., Ltd.	Liu Lijuan 13177661661
		CSC: Jiangxi Changda	Liao Jinglong 13970488961
	C1.4	Contractor Kunpeng Construction Group Co., Ltd.	Wu Yuanhui 13970474775
		CSC: Jiangxi Hengshi	Xiong Guisheng 18970475156
	C1.5	Contractor Yichun Tongda Road & Bridge Construction Co., Ltd.	Yu Hongxiang 15720909021
		CSC: Jiangxi Hengshi	Rao Yingsheng 18379668812
	C1.6	Contractor Zhushan Construction Group Co., Ltd.	
		CSC: Jiangxi Changda	Zhang Yigeng 15679883428
(iv) A Fenggang river improvement and park development	C4.1	Contractor: Jiangxi Hongzhou Landscape Engineering Co., Ltd.	
		CSC: Guangdong Hehai (Hydraulic)	Liu Gang 15070425431
		CSC: Jiangxi Zhongxiang(Landscaping)	Zhang Yurong 13870481781
<p>The environmental management training mainly covered the subjects as following:</p> <ul style="list-style-type: none"> ● Introduction for ADB's environmental policies and measures; ● Content and requirements of environmental management to be included in bidding documents and engineering contracts; ● Establishment of Environmental Management System; ● EMP implementation and its updating; ● GRM and public consultation; ● Internal Monitoring; and ● Environmental monitoring plan and reports required by ADB. 			

Note 1: C1.1 contract was completed.

Attendance List From The Training (Chinese copy)

亚行贷款抚州项目安全环境培训会议
签到表

2014.11

序号	单位	姓名	联系电话
	江西中祥建设管理有限公司	张金荣	13870481781
	广东河源市源城区源安公司	刘明	15070425423
	赣州五洲水泥有限公司	刘丁	1870944215
	宜春通达	余仁香	15120909021
	江西恒兴建材有限公司	纪贵生	18920425156
	江西恒兴建材有限公司	纪贵生	18379668812
	赣州建设集团南河	吴晓光	1397047975
	江西昌大建材有限公司	姜金生	15870754415
	" " "	章义振	15679883428
	" " " "	廖志东	13970488961
	华南	刘丽娟	13177661661

APPENDIX 5

RESPONSES TO ADB'S COMMENTS ON 7 August of 2015

No.	ADB's Comments	Page No.	Para. No.	Response
1	Para 2 should state the EMR monitoring period, January to June 2014.	2	7	Revised. The monitoring period lasted from Jan to Jun 2015.
2	Table 1-1 Project Implementation Progress, what does the category 'Good' refer to?	5	8	Revised. Sorry for misleading. The 'Good' is replaced with 'Goods'.
3	Para 6 The text indicates that the domestic EIA is still under preparation. Is it still planned to submit to Fuzhou EPB by 15 July?	6	9	Revised. Yes, FIDC hired a qualified EIA institute who is preparing the updated domestic EIA report. But the submission schedule is still to be determined.
4	Para 12 what is the timescale for the appointment and mobilisation of the wetland specialist? Is Jiang Hongxing being considered as recommended? This is the candidate that has done very similar work for Jiangxi Ji'an project.	12	12	Revised. The loan implementation consultant submitted the proposed candidate's CV. Yes. Mr. Jiang Hongxing is considered as recommended candidate for the assignment. The proposal was submitted to the ADB, and is under ADB review.
5	Table 3-2 Thanks for including this helpful table, it is good to see follow-up on the issues highlighted during the mission.	15	19 to 20	Thanks for attention and will report the follow-up in a timely basis.
6	Para 27 The complaints about provision of utilities to resettlement houses are not reflected in Para 38 on Grievance Redress Mechanism.	27	27	Revised. This is outside the scope of resettlement compensation agreement, as mentioned in the para. 27 of the report, so it is not regarded as eligible complaint for this Project. However, FIDC helped those affected people (APs) apply for the relevant agencies (such as water supply, power supply and municipal drainage companies), and those associated facilities have been installed by August 2015 through local counterpart funds for

				improving infrastructure and those APs' living standards.
7	Para 27 The Contractor should not be stockpiling spoil on the banks of the river, especially during the rainy season, please ensure this is addressed urgently.	27	27	Revised. In the middle of August 2015, the FIDC informed that those temporarily spoils were stockpiled by nearby villagers and will be reused to refill embankment later. The rainy season (May to July every year) had gone so serious flooding or soil erosion risk is expected to low, and the constructor has corresponding emergency preparedness plan and trained its staff as well as construction workers to address emergent risks. It is suggested that the stockpiling spoil be properly dealt with at the earliest possibility.
8	Para 27 there is no mention of the solid waste storage issue associated with the Tunnel Contractor that was highlighted during the mission site visit?	27	26	Yes, it was mentioned. (pls. kindly refer to the third bullet sub-paragraph: 'The tunnel of Waihuan road has been open for traffic. Some spoiled construction materials, dumped on the open drainage ditches along both sides of the access road, were removed prior to operation')
9	Para 38 does not reflect what you say in Para 27 about complaints received about utility supply?	38	33	This is outside the scope of resettlement compensation agreement, as mentioned in the para. 27 of the report, so it is not regarded as eligible complaint for this Project. However, FIDC helped those affected people (APs) apply for the relevant agencies (such as water supply, power supply and municipal drainage companies), and those associated facilities have been installed by August 2015 through local counterpart funds.
10	Table 6-1 and Table 6-2 thanks for this detailed information on GRM entry points and public consultation	39 and 40	35 to 44	Thanks for attention and will improve in the later EMRs.
11	Table 8-1 Action Plan for Environmental Monitoring and Evaluation - Environmental training for the Fenggang River Improvement Contractors is critical, please ensure this is prioritised and carried out prior to any site works.	44	49	Pls. kindly refer to the above response No. 7. It is suggested that the relevant training be conducted in this October/November (ideally) for all the constructors, especially for the Fenggang River Improvement Contractor.
12	Appendix 2 Photographs Do you have photos of the soil been piled along the banks of Fenggang River for review?	Appendix 2	59	Revised. A better picture is added to replace. During site visit, the road condition was not so well ,so the pictures were able to be taken only at some distance away.