
Environmental Monitoring Report

Project Number: 45022-002
Semi-Annual Report (July–December 2019)
February 2020

PRC: Jiangxi Ji'an Sustainable Urban Transport Project

Prepared by Ji'an Project Management Office (Ji'an Urban Investment and Development Company) for the People's Republic of China and the Asian Development Bank.

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CURRENCY EQUIVALENTS

(as of 31 December, 2019)

Currency unit	–	Yuan (CNY)
CNY1.00	=	\$0.146
\$1.00	=	CNY6.85

ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank	LSMI	licensed soil erosion institute
COD _{cr}	Chemical oxygen demand	NH ₃ -N	Ammonia nitrogen
CSC	Construction supervision company	NO ₂	Nitrate
dB	Decibels	O&M	Operation and maintenance
DEIA	Draft environmental impact assessment	pH	potential of hydrogen; used to specify the acidity or basicity of a solution
DO	Dissolved oxygen	PIU	Project implementation unit
EA	Executing Agency	JPMO	Ji'an Project management office
EIA	Environmental impact assessment	PPTA	Project preparatory technical assistance
EIR	Environmental impact report	PRC	People's Republic of China
EM	Environmental monitoring	RP	Resettlement plan
EMA	Environmental monitoring agency	SEMSP	Site Environmental Management and Supervision Plan
EMP	Environmental Management Plan	SPS	Safeguard Policy Statement (of ADB)
EMR	Environmental Management Report	SS	Suspended solids
EMS	Environmental monitoring station	SWM	Solid Waste Management facility
EPB	Environmental protection bureau	TN	Total Nitrogen
GRM	Grievance redress mechanism	TP	Total Phosphorus
LAeq	Equivalent continuous A-weighted sound pressure level, in decibels	TSP	Total suspended particulates
Leq	Equivalent continuous sound pressure level, in decibels	WHO	World Health Organization
LIEC	Loan implementation environment consultant		

WEIGHTS AND MEASURES

°C	—	degree Centigrade
cm	—	centimeter
dB	—	decibel
h	—	hour
ha	—	hectare
km	—	kilometer
km ²	—	square kilometer
m	—	meter
m ²	—	square meter
m ³	—	cubic meter
m ³ /s	—	cubic meter per second
mg/kg	—	milligram per kilogram
mg/L	—	milligram per liter
mg/m ³	—	milligram per cubic meter
mm	—	milliliter
t	—	metric ton
t/a	—	metric ton per annum
µg/m ³	—	microgram per cubic meter
µm	—	micrometer

NOTE

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

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SUMMARY PROJECT INFORMATION

项目信息总结

GENERAL INFORMATION 总体信息	
Project title:项目名称	Jiangxi Ji'an Sustainable Urban Transport Project 江西吉安可持续城市交通项目
Date of project loan effectiveness: 项目生效时间	September 8, 2015 2015年9月 8日 The project was to be implemented over 5 years from December 2014 to December 2019. The ADB loan and GEF grant closing dates are extended to 30 June 2020. The project has been effective for 43 months. Cumulative contract awards and disbursements for the loan are \$83.6 million and \$23.5 million. Civil works contracts have been awarded for all the expected packages for urban roads and Yudai River rehabilitation.
Executing agency:执行单位	II. Ji'an Municipal Government 吉安市政府
Implementing agency:实施单位	Ji'an Urban Investment and Development Company, Ltd. (JIDC) III. 吉安市城市投资发展公司
JPMO (name of agency):项目办单位	V. Ji'an Urban Investment and Development Company, Ltd. (JIDC) 吉安市城市投资发展公司
JPMO Environment Officer (name, email):项目办环境官员	Mr. Huang Maoping 黄茂平先生
LIEC:贷款实施环境咨询专家	Liu Huaiquan 刘怀全
Construction supervision company: 施工监理公司	Jiangxi Zhongchang Engineering Consultant and Supervision Co. Ltd. 江西中昌工程咨询监理公司
Contractor(s):施工单位	Hangzhou Municipal Construction Group Co., Ltd. 杭州市政建设集团公司
	Nanning Municipal Construction Group Co., Ltd. 南宁市政建设集团公司
	Taiyuan Municipal Construction Group Co., Ltd. 太原市政建设集团公司

	Jiangxi Luqiao Engineering Group Co., LTD 江西路桥工程集团有限公司;
	Jiangxi Zhongmei Construction Group Co., Ltd 江西中煤工程集团有限公司
	Jiangxi Yuming Construction Group Co., Ltd 江西玉茗集团
	Jiangxi Ivjuren Environment Co., Ltd 江西绿巨人环境股份有限公司
ADB web link to EMP: 亚行链接到环境管理计划的网页	https://www.adb.org/projects/45022-002/main#project-documents
Domestic web link to EMP: 国内链接到环境管理计划的网页	http://www.jasct.com/index.asp
ENVIRONMENTAL SAFEGUARD MONITORING 环境保障监测	
ADB environment safeguard category: 亚行环境保障等级	A
Environmental report prepared as per ADB requirements for this category: 亚行环境报告要求等级	Environmental Impact Assessment 环境影响评价
Domestic safeguard report: 国内环境报告等级	Environmental Impact Assessment Report 环境影响报告书
Quarterly period covered by this report: 本报告包括时间段	July 2019 to December 2019; 2019 年 7 月—12 月
# EMRs to date including this report:	5
Agency/person responsible for internal* environmental monitoring: 内部环境监测单位	Nanning Municipal Construction Group Co., Ltd. 南宁市政建设集团公司 Hangzhou Municipal Construction Group Co., Ltd. 杭州市政建设集团公司 Taiyuan Municipal Construction Group Co., Ltd. 太原市政建设集团公司 Jiangxi Luqiao Engineering Group Co., LTD 江西路桥工程集团有限公司 Jiangxi Zhongmei Construction Group Co., Ltd 江西中煤工程集团有限公司 Jiangxi Yuming Construction Group Co., Ltd 江西玉茗集团

	Jiangxi Lvjuren Environment Co., Ltd 江西绿巨人环境股份有限公司
Agency/person responsible for external* environment monitoring: 外部环境监测单位	Beijing Zhonghuanbohong Environmental Resources Science and Technology Co., Ltd 北京中环博宏环境资源科技公司
Agency/person responsible for compliance* environment monitoring: 合规环境监测	Liu Huaiquan 刘怀全 JPMO Huang Maoping 黄茂平
Agency/person responsible for compliance* monitoring: 合规监测单位	Jiangxi Zhongchang engineering consultant and supervision Co. Ltd 江西中昌工程咨询监理公司. This Agency is responsible for supervision on civil works quality and civil works management, including the management on environmental safeguards of civil works.
Overall status of environmental safeguards: 环境保障总体状况	On Track 正常进行

ADB = Asian Development Bank, EMP = environmental management plan, EMR = environment monitoring report, LIEC = loan implementation environment consultant, PMO = project management office.

*See Section III.3 for definitions of internal, external, compliance, and independent compliance monitoring.

Executive summary

Overview

1. This is the fifth report presents the status of compliance with the environment management plan (EMP) during the project implementation from July 1 to December 31, 2019. The key environment issues caused by project construction have been discussed, and corresponding improvement measures and follow-up actions have been suggested with respect to the issues found.

Progress in Implementing the EMP

2. The project has been implemented in accordance with EMP requirements, and relevant environmental provisions have been included in the bidding document and contract. Ji'an Project Management Office (JPMO) has distributed both the EMP and design documents to PIUs, contractors, and supervisors before the commencement of constructions.

3. At the project preparation stage, JPMO, PIUs, design institute, EIA Institute, and Environmental Protection Bureaus (EPB) have conducted related public consultation activities in accordance to ADB requirements. The Grievance Redress Mechanism (GRM) has been established and carried out by JPMO. No complaints have been received during this reporting period.

4. Environmental officers of JPMO and Project Implementation Units (PIUs) have been working effectively on the project with the support of Loan Implementation Environmental Consultant (LIEC). EMP training have been provided to related staffs in JPMO, PIUs, contractors and supervisors. JPMO have completed the Environmental Due Diligence Report for Ji'an Reliable Transit and Non-Motorized Transport Improvement Component with the support of LIEC.

5. The Loan Implementation Environment consultant (LIEC) has conducted a thorough review and English-Chinese environmental management plan formulated. The plan was further refined; environmental complaints response mechanism and public participation mechanism have been formulated. The contract of external environment monitoring during construction period was signed, and the environmental monitoring of construction was carried out.

Key issues

6. Water monitoring exercises have been carried out with the results showing that Yudai River water quality met the related standards. The pollution control should be strengthened in the next stage. Strengthening Soil and Water Conservation of Heavy Rainfall Events in Rainy Season at the construction sites is recommended.

Lessons learned

7. Water and soil conservation monitoring exercises have been carried out with the results showing, that efforts on soil erosion control are still a little bit deficient and should be strengthened in the next stage. The earth cutting is 624,000 m³; backfilling

at the very nearby place to need the filling soil is about 480,000 m³; disposal (including the land filling at some distance more than 1,000m to need the filling soil) is about 144,000m³ for the reporting duration. It is recommended that construction waste disposal sites be better considered and strengthened to reduce soil erosion during rainy seasons. Corresponding soil and water conservation plans should be formulated effectively. Following soil erosion control mitigations have been conducted and need to strengthen.

- Strip and store topsoil in a stockpile for reuse in restoration.
- Use spoil disposal sites approved by Ji'an EPB and manage in accordance with approved plan.
- Avoid side casting of spoil on slopes.
- Co-ordinate with water resources bureau monitoring station on effectiveness of soil erosion prevention measures and any need for remedial action.
- Rehabilitate and restore spoil disposal sites in accordance with agreed plan.
Conduct project completion audit to confirm that spoil disposal site rehabilitation meets required standard, contractor liable in case of non-compliance.

Next steps

8. The EMP's primary purpose is to ensure the environmental requirements, identified during and following the Planning/Design Phase, are implemented and effectively managed during a project's life cycle. In addition to the incorporation of environmental requirements into the project specifications in the bidding document, the environmental requirements are part of the contractual requirements for the project.

9. It is recommended that construction waste disposal sites be better considered and strengthened to reduce soil erosion during rainy seasons. Mitigation for soil erosion should be strengthened. Monitoring of the sediments for the dredging activities should be continued and strengthened.

VI. INTRODUCTION

1. Purpose of report

10. The purpose of this environmental monitoring report (EMR) is to describe the progress for implementation of the EMP for the Jiangxi Ji'an Sustainable Urban Transport Project, for the reporting period of July to December 2019. This EMR is submitted in compliance with the Safeguard Policy Statement (SPS) 2009 of the Asian Development Bank (ADB) and the loan agreement between ADB and the project executing agency.

11. This is the fifth EMR for the project. It covers part of the design, bidding, construction phase of the project. The report describes: (i) implementation of mitigation measures; (ii) monitoring activities; (iii) public consultations (including grievance redress); (iv) training and capacity building; (v) reporting; and; (vi) an overall assessment of key achievements, challenges, issues, corrective actions, and lessons learned, during the reporting period.

2. Project outcome, outputs and sub-components

12. Ji'an is located on the central part and a prefectural level city in Jiangxi province. It has a total population of 4.9 million, 41.6% of which are in urban district. Economically, Ji'an is behind the nearby provinces and remains relatively poor. In recent decades, to response the national strategy, the economic and social development in Ji'an has grown rapidly. In 2012, the GDP is 100.6 billion Yuan, per capita GDP is 20,282 with 14.6% annual growth rate. The urbanization rate has reached 41.6%, annual growth rate of 2.0%. Urban area has expanded to 63.72 square kilometres and a population of 555,300. The existing public transport system in Ji'an is inadequate to serve the needs of a developing third-tier city and will require substantial investment to enable it to improve its efficiency and expand its services to the new development area.

13. The outcome of the project is efficient multimodal access to major activity centers in Ji'an. Through the proposed project, the new high-speed railway station and surrounding new development area will be linked to the existing city with well-designed multimodal transport infrastructure, greenway development, and integrated public transport services. The existing public transport network will be improved through a prioritized bus rapid transit (BRT) system¹ and upgraded multimodal connections. This will reduce transport costs, increase the efficiency and attractiveness of the public transport system, expand travel opportunities and regional accessibility to jobs and services, promote sustainable urbanization, and encourage a shift to modes of travel with lower emissions.

¹ BRT component will be dropped and replaced by a new component (refer to para 15).

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

15. Output 1: Public Transport. The whole BRT corridor is 14.7 km long with 24 stations to be implemented in two phases. The project output of 6.94 km with 15 stations represents Phase 1 to be funded by ADB. The remaining section (7.76 km) will be implemented in Phase 2 with funding from the municipal government. Instead of BRT, the EA/IA proposed curbside bus and NMT improvement component, comprising: (i) curbside bus improvement, including dedicated bus lanes at curbside along Jingganshan Avenue (formerly proposed BRT corridor) for 19.5 km; (ii) high-quality bus service improvement along selected routes with branding tentatively called, "Ji'an Reliable Transit (JRT)" for 70 km network comprising Routes 1, 9, 12, 13, 61, and 62; and a new service connecting the high speed rail station; (iii) demonstration e-bike parking facility at the city center (Renmin Square along Jingganshan Avenue); (iv) covered e-bike lanes at intersections; (v) street safety improvements along the JRT routes; (vi) NMT network improvement; and (vii) Junshan Avenue safety improvement.

16. Output 2: Yudai River Rehabilitation. The Yudai River is a winding waterway on the west side of the Ji'an urban area. The river is now integrated into the irrigation system for rice cultivation. The river runs through the new development area where urban roads (Output 3) are to be constructed. The Yudai River Rehabilitation and Greenway component will enable flood control in the area and will provide recreation areas, parkland, and non-motorized transport (NMT) paths and facilities.

17. Output 3: Traffic Management and Urban Roads. This is to develop the transport network to connect the city center to the new development area, the Yudai River rehabilitation (Output 2), and serve the feeder bus routes that are integrated into the 6.9 km JRT corridor (Output 1). Five urban trunk roads with a total length of 19.3 km will be constructed along with utilities, streetscape improvements, pedestrian enhancements, and segregated lanes for NMT. In the view of the rapid growth of traffic demand and the implementation of the JRT system, it is necessary to upgrade the traffic signal system along the major existing and new road corridors. This will coordinate signals at 37 intersections along the proposed JRT corridor and the proposed urban roads in the new development area.

18. Output 4: Institutional Strengthening and Capacity Building. This output will build capacity for JRT operations and integrated urban and transport planning; support project implementation to ensure that project outputs are delivered on time and within budget in accordance with ADB policies and procedures; develop and maintain the project performance monitoring system; assist with procurement, financial management and disbursement; oversee detailed design and road safety audits; and ensure that safeguard measures are implemented,

19. Environmental funding. A grant from the Global Environment Facility (GEF) provided measures to maximize the energy efficiency of bus operations on the JRT and feeder services. The GEF-funded activity has three components: (i) fuel efficient

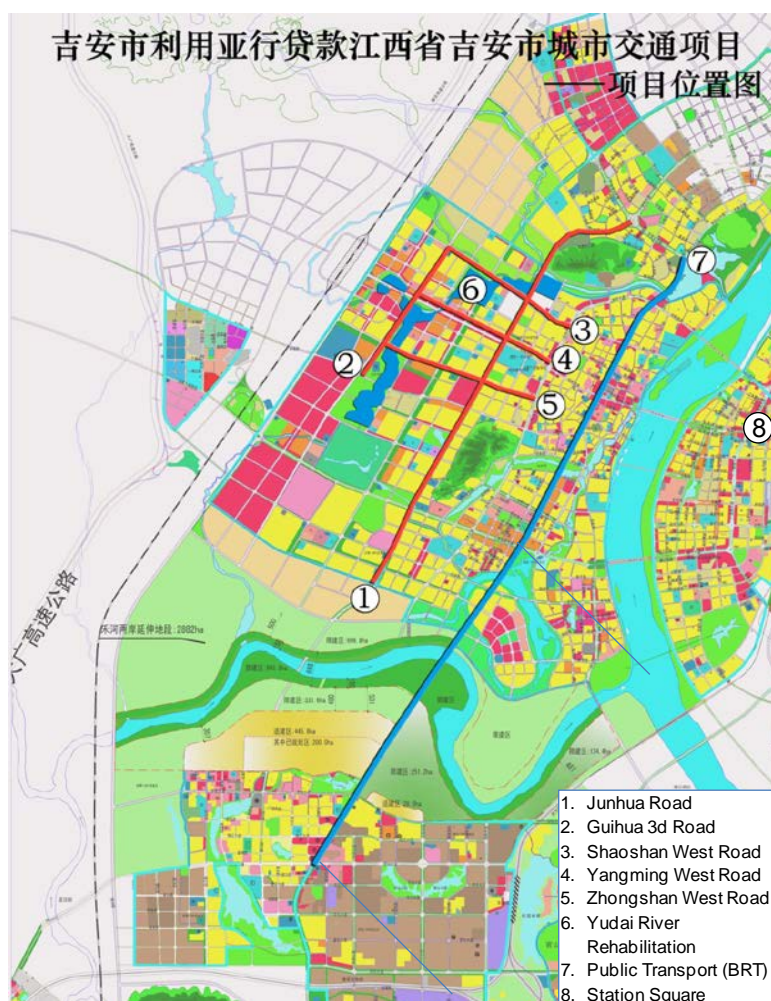
bus operations using diesel hybrid-electric buses (in Output 1); (ii) evaluation and monitoring of hybrid bus performance under BRT and normal operating conditions (in Output 4); and (iii) the development of an integrated transport/land use plan (in Output 4). The GEF-financed activities are designed to reduce the carbon intensity of the transport system in Ji'an and provide a low-carbon blueprint for future urban development.

3. Project implementation progress

20. In 2010, Ji'an Government has started the declaration for ADB loan project. The content includes mainly the BRT, urban road and transport management, Yudai River rehabilitation, environment protection and institutional strengthening and capacity building. The total estimated budget is about RMB1.63 billion, within which \$120 million for ADB loan. The project has finished both ADB and domestic administrative approval procedures accordingly. National development and Reform Commission (NDRC) approved the financing application report on October 2014. Ministry of Finance finished the loan negotiation after signing with NDRC and Jiangxi Provincial Government for the State Council's approval in late November. The ADB board of directors approved the loan in December. The project and loan agreements were officially signed on April 22, 2015 and came to effective on September 8. The project received total amount \$120 million loan for 25 years duration, including 5years grace period.

21. At the same time, the government received \$2.56 million GEF grant for purchasing new type environment protection, energy-saving buses and subject research.

22. **Road components implementation progress.** The road component includes 5 main roads on the west areas of Ji'an city (high railway new district), namely Yangming West Road, Junhua Avenue, Zhongshan and Shaoshan West Road and Bo'an Avenue. Yangming West Road has changed to counterpart funding. Junhua Avenue has divided into two lots, have started constructions and completed about more than 40% of the civil works. The constructions of Zhongshan Road and Shaoshan West Road and Bo'an road has started. During this reporting period, the preparation of Zhongshan Road construction is on-going.



Picture: Project location

23. **Institutional capacity development.** The EA/IA proposed to drop one of the GEF-funded consulting service package. Consultant selection for “CS3: procurement management and procurement expert” is under contract negotiation.

24. **Curbside bus and non-motorized transport improvement.** Instead of BRT, the EA/IA proposed curbside bus and non-motorized transport (NMT) improvement comprising: (i) curbside bus improvement including dedicated bus lanes at curbside along Jinggangshan Avenue (formerly proposed BRT corridor) for 19.5 km; (ii) high-quality bus service improvement along selected routes with branding tentatively called, “Ji'an Reliable Transit (JRT)” for 70 km network comprising Routes 1, 9, 12, 13, 61, and 62; and a new service connecting the high speed rail station; (iii) demonstration e-bike parking facility at the city center (Renmin Square along Jinggangshan Avenue); (iv) covered e-bike lanes at intersections; (v) street safety improvements along the JRT routes; (vi) NMT network improvement; and (vii) Junshan Avenue safety improvement.

II. ENVIRONMENTAL MANAGEMENT DURING THE REPORTING PERIOD

25. This section summarizes the progress made to implement the project EMP during the current reporting period of construction stage.

1. Implementation of the project mitigation measures

26. Implementation of the mitigation measures in the EMP is summarized in Table 1 for related project activities in the report period. This table is the same as Table 3 of the EMP but has additional columns, to summarize the implementation status and compliance for each listed mitigation measures within the reporting period.

Table 1 Table EMP-3: Summary of Potential Impacts and Mitigation Measures

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
Materials	Efficient use of resources	<ul style="list-style-type: none"> Specify energy efficient lighting and cooling/heating systems. Specify materials that are recycled, have recycled content or are from sustainable sources, particularly for street furniture and fixtures/fittings. Specify the use of renewable energy (such as photovoltaic panels) for stations, signs, lighting, where appropriate. Specify grey water collection and water conservation, where possible Maximize the use of natural lighting and ventilation in BRT station design 	<p>Detailed design stage By Design Institute</p> <p>The special mitigation measures on energy efficiency lighting and cooling/heating systems.; renewable energy (such as photovoltaic panels) for stations, signs, lighting, where appropriate; renewable energy (such as photovoltaic panels) for stations, signs, lighting, where appropriate were covered in the related documents.</p> <p>The special mitigation measures on materials that are recycled, were covered in the related documents.</p> <p>The special mitigation measures on grey water collection and water conservation were covered in the related documents.</p>
Extreme weather event due to climate change	Road surface cracking due to extreme hot or cold weather, landslide and flooding due to torrential rainfall	<ul style="list-style-type: none"> Consider potential impacts from extreme weather events due to climate change in designing road sub-grade, pavement, road-side slopes, drainage system, bridges and culverts. Adopt appropriate protective measures such as vegetation cover, geo-textiles, settling basins, permeable paving, infiltration ditches, stepped slopes, riprap, crib walls, retaining walls and intercepting ditches to reduce the speed of surface run-off. 	<p>Detailed design stage By Design Institute</p> <p>Measures to mitigate potential impacts from extreme weather events have been included in the detailed design.</p>
	Flood control capacity of Yudai River	<ul style="list-style-type: none"> Consider potential impacts from extreme storm events due to climate change in designing the flood control capacity of Yudai River 	<p>Detailed design stage By Design Institute</p> <p>Flood control capacity of Yudai River have been considered in the detailed design.</p>
Ecology	Loss of camphor trees (under national Class II protection) (see Figure IV.5 in the EIA report)	<ul style="list-style-type: none"> Technical design of the urban road alignments will avoid the removal of these trees as the primary objective. If avoidance is not possible, design replanting schemes for these trees. 	<p>Detailed design stage By Design Institute</p> <p>Loss of camphor trees (under national Class II protection) have considered in the detailed design.</p>
Physical cultural resource	Preservation of old camphor trees (see Table IV.19 in the EIA report)	<ul style="list-style-type: none"> Technical design of the urban road alignments <u>MUST</u> avoid all locations with old camphor trees as shown in Table IV.9 in the EIA report. 	<p>Detailed design stage By Design Institute</p> <p>Preservation of old camphor trees have been put into the technical design of the urban road.</p>
Health and safety	Promotion of non-motorized transport, protection of	<ul style="list-style-type: none"> Design must ensure public health and safety. Promote non-motorized traffic. Ensure barrier-free design for disabled people. 	<p>Detailed design stage By Design Institute</p>

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
	vulnerable road users		To ensure public health and safety have been considered in the detailed design.
Air emissions	Construction transport emissions	<ul style="list-style-type: none"> Specify local materials from licensed providers that minimize transport distance. 	Detailed design stage By Design Institute Local suppliers are used as many as possible.
Noise	Road traffic noise	<ul style="list-style-type: none"> Technical design of urban roads will include the planting of road-side woodland buffer for noise mitigation as indicated in the project Environmental Impact Report and Tables V.8 and V.11 in the EIA report 	Detailed design stage By Design Institute Road traffic noise mitigations have included in the detailed design.
Water quality	Polluted run-off into Yudai River	<ul style="list-style-type: none"> Technical design of urban road drainage to ensure that drainage design and discharge locations minimized risk of pollution of Yudai River. Need for pollution interceptors and treatment should be considered. 	Detailed design stage By Design Institute To control the pollution resources to Yudai River have been considered in the technical design of urban road drainage.
Ecology	Loss of natural habitats	<ul style="list-style-type: none"> Retain and incorporate natural habitat features where possible, where not possible, compensate through creation of new habitats. Ecologist to review and provide specialist inputs into the design of the riverside park. Adopt soft engineered bankside protection methods where possible. Specify species that are in keeping with local environment and are of local provenance. 	Detailed design stage By Design Institute To mitigate the loss of natural habitats have been considered in the detailed design.
Water quality and waste management	Dumping of waste and run-off	<ul style="list-style-type: none"> Ensure adequate provision of waste management facilities away from the river that provide options for waste segregation, recycling and reuse. Segregate green waste (vegetation waste from park maintenance) from general refuse for composting. Provide drainage for car park and other areas of hard standing and ensure that attenuation and discharge points are appropriate. 	Detailed design stage By Design Institute To manage the water quality and control dumping of waste and run-off have been considered in the detailed design.
Institutional strengthening	Lack of environmental management capacities within JPMO, JIDC and O&M units	<ul style="list-style-type: none"> Appoint qualified environment specialist on staff within the JPMO Contract loan implementation environment consultant (LIEC) within loan administration consultant services; Conduct environment management training. 	Pre-construction Stage By JPMO Appointed. LIEC have been contracted on schedule.
Institutional strengthening	Lack of environmental monitoring capability and qualification	<ul style="list-style-type: none"> Contract Ji'an Environmental Monitoring Station (JEMS) to conduct project impact monitoring during construction. 	Pre-construction Stage By JPMO The external monitoring agency have been contracted on schedule.
		<ul style="list-style-type: none"> Contract JEMS to conduct project impact monitoring during the operational stage. 	Pre-construction Stage By JPMO Not due yet.
EMP	EMP Update	<ul style="list-style-type: none"> Review mitigation measures defined in this EMP, update as required to reflect detailed design, disclose updated EMP on project website. 	Pre-construction Stage By JPMO Update is not needed in this reporting period.
Air quality	Dust (TSP) impact to sensitive receptors	Put into tender documents dust suppression measures: <ul style="list-style-type: none"> Provide dust masks to operating personnel; Spray water regularly on hauling and access roads to borrow pits (at least once a day) to suppress dust; and erect hoarding around dusty activities; Minimize the storage time of construction and demolition wastes on site by regularly removing them off site; Equip asphalt, hot mix and batching plants with fabric filters and/or wet scrubbers to reduce the level of dust emissions. Additionally, site asphalt mixing stations at least 300 meters downwind of the nearest residential household; Mount protective canvasses on all trucks which transport material that could generate dust; Build access and hauling roads at sufficient distances from residential areas, particular, from 	Pre-construction Stage By JPMO The mitigation measures to control the dust(TSP) impact to sensitive receptors have been put into tender documents and conducted readiness activities.

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		<p>local schools and hospitals;</p> <ul style="list-style-type: none"> ● Assign haulage routes and schedules to avoid transport occurring in the central areas, traffic intensive areas or residential areas. For the areas with high-demand on environmental quality, transport should be arranged at night. ● Keep construction vehicles and machinery in good working order, regularly service and turn off engines when not in use; ● Vehicles with an open load-carrying case, which transport potentially dust-producing materials, shall have proper fitting sides and tail boards. Dust-prone materials shall not be loaded to a level higher than the side and tail boards, and shall always be covered with a strong tarpaulin; ● Install wheel washing equipment or conduct wheel washing manually at each exit of the works area to prevent trucks from carrying muddy or dusty substance onto public roads; ● In periods of high wind, dust-generating operations shall not be permitted within 200 m of residential areas. Special precautions need to be applied in the vicinity of sensitive areas such as schools, kindergartens and hospitals; ● Equip material stockpiles and concrete mixing equipment with dust shrouds. For the earthwork management for backfill, measures will include surface press and periodical spraying and covering. The extra earth or dredge should be cleared from the project site in time to avoid long term stockpiling. The height of stockpiles should be less than 0.7m; ● To avoid odor impacts caused by channel cleaning, transport the removed trash quickly to the local landfill. Transport of dredged sediments will be undertaken in closed tank wagons to prevent scattering along the way and impacting the urban area; ● Site temporary dredged sediment storage locations at least 50 m downwind of the nearest residential household; ● Unauthorized burning of construction and demolition waste material and refuse shall be subject to penalties for the Contractor and withholding of payment. 	
Noise	PME noise impact to sensitive receptors	<p>Put into tender documents the following noise mitigation measures:</p> <ul style="list-style-type: none"> ● During daytime construction, the contractor will ensure that: (i) noise levels from equipment and machinery conform to the PRC standard for Noise Limits for Construction Sites (GB12523-2011) and the WBG EHS Standards, and properly maintain machinery to minimize noise; (ii) equipment with high noise and high vibration are not used near village or township areas and only low noise machinery or the equipment with sound insulation is employed; (iii) sites for asphalt-mixing plants and similar activities will be located at least 300 m away from the nearest sensitive receptor; and (iii) temporary anti-noise barriers or hoardings will be installed around the equipment to shield residences when there are residences within 50 m of the noise source; ● For all the <u>urban roads</u>, there will be no night time (between 2200 and 0600 hours) construction; ● For the <u>BRT corridor</u>, night time construction shall be avoided. Yet, recognizing that construction (e.g. BRT stations) occasionally would require some works to be conducted at night to take advantage of less road traffic or to avoid worsening day time traffic conditions. Night time construction work on the BRT corridor if needed should prevent using high sound power level equipment and nearby residents should be notified of such night time activities well beforehand ● Regularly monitor noise at sensitive areas (refer to 	<p>Pre-construction Stage By JPMO</p> <p>The mitigation measures to control the noise impact to sensitive receptors have been put into tender documents and conducted readiness activities.</p>

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		<p>the monitoring plan). If noise standards are exceeded by more than 3 dB, equipment and construction conditions shall be checked, and mitigation measures shall be implemented to rectify the situation;</p> <ul style="list-style-type: none"> ● Provide the construction workers with suitable hearing protection (ear muffs) according to the worker health protection law of the PRC; ● Control the speed of bulldozer, excavator, crusher and other transport vehicles travelling on site, adopt noise reduction measures on equipment, step up equipment repair and maintenance to keep them in good working condition; ● Limit the speed of vehicles travelling on site (less than 8 km/hr), forbid the use of horns unless absolutely necessary, minimize the use of whistles; ● Maintain continual communication with the villages and communities along the road alignments and Yudai River. 	
Water quality	Construction site wastewater, bridge construction and dredging impact on water bodies	<p>Put into tender documents the following measures to treat wastewater and runoff from construction sites and to contain suspended solids dispersion during bridge construction and dredging:</p> <ul style="list-style-type: none"> ● Portable toilets and small package wastewater treatment plants will be provided on construction sites for the workers and canteens; If there are nearby public sewers, interim storage tanks and pipelines will be installed to convey wastewater to those sewers; ● Sedimentation tanks will be installed on construction sites to treat process water (e.g. concrete batching for bridge construction) and muddy runoff with high concentrations of suspended solids. If necessary, flocculants such as polyacryl amide (PAM) will be used to facilitate sedimentation; ● Construction of road bridge foundations will avoid the rainy season from May to October to minimize potential water quality impact. Mitigation measures such as placement of sandbags or berms around foundation works to contain muddy water runoff will be adopted. Slurry from pile drilling in the river bed will be pumped to shore and properly disposed of. This will reduce the disturbance of sediments and the impact on water quality. Pier construction in Yudai River will be planned and laid out to ensure adequate opening for water flow; ● Dredging in Yudai River will be done in the dry and during the dry season from October to March to minimize potential water quality impact. Sand bags or berms placed around the dredging area will be planned and laid out to ensure adequate opening for water flow; ● Construction machinery will be repaired and washed at special repairing shops. No onsite machine repair and washing shall be allowed; ● Storage facilities for fuels, oil, and other hazardous materials will be within secured areas on impermeable surfaces, and provided with bunds and cleanup kits; ● The contractors' fuel suppliers must be properly licensed, follow proper protocol for transferring fuel, and must be in compliance with Transportation, Loading and Unloading of Dangerous or Harmful Goods (JT 3145-88); ● Material stockpiles will be protected against wind and runoff waters which might transport them to surface waters; ● Any spills are to be cleaned up according to PRC norms and codes within 24 hours of the occurrence, with contaminated soils and water treated according to PRC norms and codes. Records must be handed over without delay to the HPMO and HEPB; ● Mitigation of water quality impact during water 	<p>Pre-construction Stage By JPMO</p> <p>The mitigation measures to control the wastewater pollution in bridge construction and dredging impacts to sensitive water body receptors have been put into tender documents and conducted readiness activities.</p>

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		<p>pumping and sediment removal at each dredging location will be based on water quality monitoring results. The water quality monitoring approach for dredging works will include, at each dredging location, one control station up current of the location and one impact station down current of the location. When the monitoring result shows that the suspended solids (SS) level at the down current impact station is 130% higher than that at the up current control station, it is indicative of bottom sediment being stirred up and discharged downstream by water pumping or during sediment excavation. The contractor shall reduce the pumping or excavation rate and/or pump the slurry to a sedimentation pond first for settling of SS, until the down current SS level is less than 130% above the upstream SS level;</p> <ul style="list-style-type: none"> Similar monitoring approach will be adopted for mitigating water quality impact during road bridge construction, where up current and down current monitoring stations will be set up and SS levels monitored. When the SS levels at the down current impact station is 130% higher than the SS levels at the up current control station, the contractor shall adopt alternative construction methods or additional mitigation measures until the down current SS level is less than 130% above the upstream SS level. 	
Ecology	Impact on trees and wildlife	<p>Put into tender documents the following ecological mitigation measures:</p> <ul style="list-style-type: none"> All camphor trees at the 3 locations identified in this EIA (see Figure IV.5) must be tagged, conspicuously marked and fenced off before commencement of construction Construction workers are prohibited from capturing any wildlife anywhere in the project area and from damaging the camphor trees 	<p>Pre-construction Stage By JPMO</p> <p>The mitigation measures to control the impact on trees and wildlife have been put into tender documents and conducted readiness activities.</p>
Physical cultural resources	Preservation of old camphor trees	<p>Put into tender documents the following ecological mitigation measures:</p> <ul style="list-style-type: none"> All old camphor trees at the 3 locations identified in this EIA (see Table IV.19)) must be tagged, conspicuously marked and fenced off before commencement of construction Construction workers are prohibited from damaging the old camphor trees 	<p>Pre-construction Stage By JPMO</p> <p>The mitigation measures to control the impact on Physical cultural resources-- Preservation of old camphor trees have been put into tender documents and conducted readiness activities.</p>
Solid waste	Disposal or storage of excavated spoil and construction and demolition waste	<p>Specify in tender documents the following mitigation measures:</p> <ul style="list-style-type: none"> Locations of approved spoil disposal and storage sites, other sites cannot be used unless authorized by appropriate agency. Approved storage and disposal sites for construction and demolition waste, other sites not to be used. 	<p>Pre-construction Stage By JPMO</p> <p>The mitigation measures to control the solid waste impacts by disposal or storage of excavated spoil and construction and demolition waste impacts have been put into tender documents and conducted readiness activities.</p>
Health & safety	Occupational health & safety of workers	Specify in tender documents the provision of personal safety and protective equipment such as safety hats and shoes, eye goggles, respiratory masks, etc. to all construction workers.	<p>Pre-construction Stage By JPMO</p> <p>The required activities on occupational health and safety of workers were specified in the tender documents and conducted readiness activities.</p>
Traffic	Construction vehicles causing traffic congestion	Plan transport routes for construction vehicles and specify in tender documents to forbid vehicles from using other roads and during peak traffic hours.	<p>Pre-construction Stage</p> <p>The mitigation measures on construction vehicles causing traffic congestion have been considered in the transport route planning.</p>
Construction stage			
Soil resources	Spoil disposal	<ul style="list-style-type: none"> Strip and store topsoil in a stockpile for reuse in restoration. Use spoil disposal sites approved by YEPB and manage in accordance with approved plan. Avoid side casting of spoil on slopes. 	<p>Construction stage By Contractors</p> <p>The mitigations have been conducted for the road construction activities at Yangming West Road, Junhua Avenue</p>

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		<ul style="list-style-type: none"> Co-ordinate with water resources bureau monitoring station on effectiveness of soil erosion prevention measures and any need for remedial action. Rehabilitate and restore spoil disposal sites in accordance with agreed plan. Conduct project completion audit to confirm that spoil disposal site rehabilitation meets required standard, contractor liable in case of non-compliance. 	<p>construction sites, Zhongshan and Shaoshan West Road and Bo'an Avenue construction sites as following: Topsoil has been stored as needed. Spoil disposal sites have been agreed by local authorities.</p> <p><input type="checkbox"/> No borrow area for this project.</p> <p><input type="checkbox"/> Slope protection for road construction</p> <p><input type="checkbox"/> Local water resources bureau is involved in implementation of soil erosion prevention measures.</p> <p><input type="checkbox"/> Slope stability has been fully considered contractors reasonably to minimize the open area.</p> <p><input type="checkbox"/> Restoration has been included in detailed design of the disposal sites, and is/will be included in the contract.</p> <p><input type="checkbox"/> Closing program has been included in the design and is/will be included in the contracted and drainage system is designed for each spoil disposal site.</p>
	Soil erosion	<ul style="list-style-type: none"> Ensure contractors aware of all soil erosion requirements as set out in the approved plan in the Soil and Water Conservation Report and have developed appropriate method statements and management proposals. Avoid rainy season. If necessary, construct berms to direct rainwater runoff away from exposed surface. Install drainage ditches and sedimentation tanks in temporary construction areas to prevent soil erosion and to manage run-off. Stabilize all cut slopes, embankments and other erosion-prone working areas while works are ongoing. Implement permanent stabilization measures as soon as possible, at least within 30 days. Pay close attention to drainage provision and establishment of vegetation cover on backfilled areas to prevent soil erosion. If restoration is carried out during periods of hot or extreme weather, ensure adequate aftercare to maximize survival. 	<p>Construction stage</p> <p>By Contractor</p> <p>The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites, Zhongshan and Shaoshan West Road and Bo'an Avenue construction sites as following: Soil erosion prevention requirement have been reflected in the design and made to the contractors.</p> <p><input type="checkbox"/> No construction activities in rainy days, and mitigation facilities have been built to divert rainwater.</p> <p><input type="checkbox"/> Drainage ditches and sedimentation sites have been built on bridge construction sites.</p> <p><input type="checkbox"/> Slope protection for road constructions should be carefully reviewed and design improvement should be considered..</p> <p><input type="checkbox"/> Drainage provision is fully considered.</p>
	Soil contamination	<ul style="list-style-type: none"> Properly store petroleum products, hazardous materials and wastes on impervious. Develop spill response plan. Keep a stock of absorbent materials (e.g. sand, earth or commercial products) on site to deal with spillages and train staff in their use. If there is a spill take immediate action to prevent entering drains, watercourses, unmade ground or porous surfaces. Do not hose the spillage down or use any detergents use oil absorbents and dispose of used absorbents at a waste management facility. Record any spill events and actions taken in environmental monitoring logs and report to LIEC. Properly store petroleum products, hazardous materials and waste in clearly labeled containers on an impermeable surface in secure and covered areas, preferably with a containment tray for any leaks. Remove all construction waste from the site to approved waste disposal sites. 	<p>Construction stage</p> <p>By Contractor</p> <p>The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites, Zhongshan and Shaoshan West Road and Bo'an Avenue construction sites as following: Spill response measures have been taken on site.</p> <p><input type="checkbox"/> Strict requirements for spill response have been made to the contractors by the IAs .</p> <p><input type="checkbox"/> No spill accidents occurred.</p> <p><input type="checkbox"/> No petroleum or hazardous materials are stored on site.</p>
Air quality	Dust (TSP) during construction	<ul style="list-style-type: none"> Provide dust masks to operating personnel; Spray water regularly on hauling and access roads to borrow pits (at least once a day) to suppress dust; and erect hoarding around dusty activities; Minimize the storage time of construction and demolition wastes on site by regularly removing them off site; Equip concrete batching plants with fabric filters and/or wet scrubbers to reduce the level of dust emissions. Additionally, concrete mixing stations at least 300 meters downwind of the nearest residential household; 	<p>Construction stage</p> <p>By Contractor</p> <p>The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites, Zhongshan and Shaoshan West Road and Bo'an Avenue construction sites as following: Dust masks were provided.</p>

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		<ul style="list-style-type: none"> ● Mount protective canvasses on all trucks which transport material that could generate dust; ● Build access and hauling roads at sufficient distances from residential areas, particular, from local schools and hospitals; ● Assign haulage routes and schedules to avoid transport occurring in the central areas, traffic intensive areas or residential areas. For the areas with high-demand on environmental quality, transport should be arranged at night. ● Keep construction vehicles and machinery in good working order, regularly service and turn off engines when not in use; ● Vehicles with an open load-carrying case, which transport potentially dust-producing materials, shall have proper fitting sides and tail boards. Dust-prone materials shall not be loaded to a level higher than the side and tail boards, and shall always be covered with a strong tarpaulin; ● Install wheel washing equipment or conduct wheel washing manually at each exit of the works area to prevent trucks from carrying muddy or dusty substance onto public roads; ● Immediately cleanup all muddy or dusty materials on public roads outside the exits of the works areas. ● In periods of high wind, dust-generating operations shall not be permitted within 100 m of residential areas. Special precautions need to be applied in the vicinity of sensitive areas such as schools and hospitals; ● Equip material stockpiles and concrete mixing equipment with dust shrouds. For the earthwork management for backfill, measures will include surface press and periodical spraying and covering. The extra earth or dredge should be cleared from the project site in time to avoid long term stockpiling. The height of stockpiles should be less than 0.7m; ● Plan the transport routes and time to avoid busy traffic and heavily populated areas when transporting earthy materials; ● Immediately plant vegetation in all temporary land-take areas upon completion of construction to prevent dust and soil erosion; ● Unauthorized burning of construction and demolition waste material and refuse shall be subject to penalties for the Contractor, and withholding of payment. 	<p>Water was sprayed as needed. Additional watering vehicles were added and watering frequency was increased in this reporting period as needed to mitigate dust impact.</p> <p>As disposal sites were put in use, spoil previously stored has been cleaned up in this reporting period.</p> <p>Covered transportation. Access to schools and hospitals were fully ensured.</p> <p>Proper maintenance was done regularly for vehicles and machinery. Trucks were washed regularly and as needed.</p> <p>Operation in high windy days is strictly managed.</p> <p>Such information is posted at construction camps and public media.</p>
	Fumes and particulate matter from asphalt mixing plant, concrete batching plant and other equipment and machinery	<ul style="list-style-type: none"> ● downwind from residential areas and other sensitive receptors. ● Enclose these plants and equip them with bag house filter or similar air pollution control equipment. ● Regularly inspect and certify vehicle and equipment emissions and maintain to a high standard. Locate asphalt plants and mixers at least 200m 	<p>Construction stage</p> <p>By Contractor</p> <p>The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites, Zhongshan and Shaoshan West Road and Bo'an Avenue construction sites as following</p> <p>No asphalt mixing station in this reporting period.</p> <p>Proper vehicle and equipment maintenance is made regularly.</p>

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
Noise and vibration	Noise from PME and vehicles	<ul style="list-style-type: none"> During daytime construction, the contractor will ensure that: (i) noise levels from equipment and machinery conform to the PRC standard for Noise Limits for Construction Sites (GB12523-2011) and the WBG EHS Standards, and properly maintain machinery to minimize noise; (ii) equipment with high noise and high vibration are not used near village or township areas and only low noise machinery or the equipment with sound insulation is employed; (iii) sites for asphalt-mixing plants and similar activities will be located at least 300 m away from the nearest sensitive receptor; and (iii) temporary anti-noise barriers or hoardings will be installed around the equipment to shield residences when there are residences within 50 m of the noise source; For all the <u>urban roads</u>, there will be no night time (between 2200 and 0600 hours) construction; For the <u>BRT corridor</u>, night time construction shall be avoided. Yet, recognizing that construction (e.g. BRT stations) occasionally would require some works to be conducted at night to take advantage of less road traffic or to avoid worsening day time traffic conditions. Night time construction work on the BRT corridor if needed should prevent using high sound power level equipment and nearby residents should be notified of such night time activities well beforehand Regularly monitor noise at sensitive areas (refer to the monitoring plan). If noise standards are exceeded by more than 3 dB, equipment and construction conditions shall be checked, and mitigation measures shall be implemented to rectify the situation; Provide the construction workers with suitable hearing protection (ear muffs) according to the worker health protection law of the PRC; Control the speed of bulldozer, excavator, crusher and other transport vehicles travelling on site, adopt noise reduction measures on equipment, step up equipment repair and maintenance to keep them in good working condition; Limit the speed of vehicles travelling on site (less than 8 km/hr), forbid the use of horns unless absolutely necessary, minimize the use of whistles; Maintain continual communication with the villages and communities along the road alignments and Yudai River. 	<p>Construction stage</p> <p>By Contractor</p> <p>The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites, Zhongshan and Shaoshan West Road and Bo'an Avenue construction sites as following: Noise control measures are well implemented. No night construction for all the new constructions. No night construction for existing road sections. Noise monitoring at sensitive areas were conducted regularly Personal protection equipment for the construction workers has been improved and safety training has been enhanced by the construction supervisor.</p>
Water quality	Construction site runoff and wastewater discharge; dredging impact	<ul style="list-style-type: none"> Portable toilets and small package wastewater treatment plants will be provided on construction sites for the workers and canteens; If there are nearby public sewers, interim storage tanks and pipelines will be installed to convey wastewater to those sewers; Sedimentation tanks will be installed on construction sites to treat process water (e.g. concrete batching for bridge construction) and muddy runoff with high concentrations of suspended solids. If necessary, flocculants such as polyacryl amide (PAM) will be used to facilitate sedimentation; Construction of road bridge foundations will avoid the rainy season from May to October to minimize potential water quality impact. Mitigation measures such as placement of sandbags or berms around foundation works to contain muddy water runoff will be adopted. Slurry from pile drilling in the river bed will be pumped to shore and properly disposed of. This will reduce the disturbance of sediments and the impact on water quality. Pier construction in Yudai River will be planned and laid out to ensure adequate opening for water flow; Dredging in Yudai River will be done in the dry and during the dry season from October to March to minimize potential water quality impact. Sand bags 	<p>Construction stage</p> <p>By Contractor</p> <p>The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites, Zhongshan and Shaoshan West Road and Bo'an Avenue construction sites as following:</p> <p>Simple toilets were built on construction sites. Sewage management on construction site, sedimentation tanks were built on construction sites. No onsite machine repair or washing. No fuel storage on site. Public fuel suppliers are used. Material stockpiles are well sheltered/covered and retained. Spill management has been improved in this reporting period. Water quality monitoring results in this reporting period indicate that mitigation measures have been well implemented.</p>

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		<p>or berms placed around the dredging area will be planned and laid out to ensure adequate opening for water flow;</p> <ul style="list-style-type: none"> ● Construction machinery will be repaired and washed at special repairing shops. No onsite machine repair and washing shall be allowed; ● Storage facilities for fuels, oil, and other hazardous materials will be within secured areas on impermeable surfaces, and provided with bunds and cleanup kits; ● The contractors' fuel suppliers must be properly licensed, follow proper protocol for transferring fuel, and must be in compliance with Transportation, Loading and Unloading of Dangerous or Harmful Goods (JT 3145-88); ● Material stockpiles will be protected against wind and runoff waters which might transport them to surface waters; ● Any spills are to be cleaned up according to PRC norms and codes within 24 hours of the occurrence, with contaminated soils and water treated according to PRC norms and codes. Records must be handed over without delay to the JPMO and JEPB; ● Mitigation of water quality impact during water pumping and sediment removal at each dredging location will be based on water quality monitoring results. The water quality monitoring approach for dredging works will include, at each dredging location, one control station up current of the location and one impact station down current of the location. When the monitoring result shows that the suspended solids (SS) level at the down current impact station is 130% higher than that at the up current control station, it is indicative of bottom sediment being stirred up and discharged downstream by water pumping or during sediment excavation. The contractor shall reduce the pumping or excavation rate and/or pump the slurry to a sedimentation pond first for settling of SS, until the down current SS level is less than 130% above the upstream SS level; ● Similar monitoring approach will be adopted for mitigating water quality impact during road bridge construction, where up current and down current monitoring stations will be set up and SS levels monitored. When the SS levels at the down current impact station is 130% higher than the SS levels at the up current control station, the contractor shall adopt alternative construction methods or additional mitigation measures until the down current SS level is less than 130% above the upstream SS level. 	
Solid waste	Construction site refuse and spoil disposal	<ul style="list-style-type: none"> ● Temporary storage and permanent disposal of spoil and construction and demolition waste at designated sites only. These sites shall be at least 500 m from any water body. ● Transport construction waste in enclosed containers; ● Establish enclosed waste collection points on site, with separation of domestic waste and construction waste; ● Set up centralized domestic waste collection point and transport offsite for disposal regularly by sanitation department; ● Spoil disposal site management and restoration plans will be developed, to be approved by responsible authority; a protocol will be established between the contractors and Ji'an Cityscape Management Department to clarify the spoil quantity and a permit for the clearance of excavated earthwork shall be obtained; ● Site restoration will follow the completion of works in full compliance with all applicable standards and specifications, and will be required before final acceptance and payment under the terms of 	<p>Construction stage</p> <p>By Contractor</p> <p>The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites, Zhongshan and Shaoshan West Road and Bo'an Avenue construction sites as following:</p> <p>The designated disposal sites meet River Course Regulation and shall be/have been approved by local water resources authority. Local EPB has been consulted for disposal approach of waste asphalt. Covered transportation. Solid wastes on site are collected separately. Domestic waste is collected and sent to public solid waste facility regularly.</p>

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		contracts.	
Ecology	Destruction of vegetation	<ul style="list-style-type: none"> Construction workers are prohibited from capturing any wildlife during construction; Construction workers are prohibited from damaging camphor trees Preserve existing vegetation where no construction activity is planned; Protect existing trees and grassland during construction; where a tree has to be removed or an area of grassland disturbed, replant trees and re-vegetate the area after construction; Remove trees or shrubs only as the last resort if they impinge directly on the permanent works or necessary temporary works. 	Construction stage By Contractor The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites, Zhongshan and Shaoshan West Road and Bo'an Avenue construction sites as following: No capturing of any wildlife by construction workers. Existing vegetation is reserved as much as possible. Mitigation measures have been required to protect the trees.
Physical cultural resources	Destruction of cultural relics in stream bed and soil	<ul style="list-style-type: none"> Construction workers are prohibited from damaging the old camphor trees Contractor must comply with PRC's <i>Cultural Relics Protection Law</i> and <i>Cultural Relics Protection Law Implementation Regulations</i> if such relics are discovered, stop work immediately and notify the relevant authorities, adopt protection measures and notify the Security Bureau to protect the site. 	Construction stage By Contractor The mitigations have been conducted well.
Overall disturbance to communities	Excessive disturbance to communities due to prolonged construction times	<ul style="list-style-type: none"> Contractors to identify and adhere to strict schedule for completion of each pipeline section and to avoid prolonged construction, disturbance 	Construction stage By Contractor The mitigations have been conducted well.
Occupational health and safety	Construction site sanitation	<ul style="list-style-type: none"> Effectively clean and disinfect the site. During site formation, spray with phenolated water for disinfection. Disinfect toilets and refuse piles and timely remove solid waste; Exterminate rodents on site at least once every 3 months, and exterminate mosquitoes and flies at least twice each year; Minimize the risk of fly- or mosquito-borne diseases by maintaining well-drained and hygienic project sites; Remove standing water bodies and cover drums and other containers to avoid formation of stagnant water; Ensure personnel are aware of potential disease risks; Enforce on-site hygiene regulations to prevent litter; Provide public toilets in accordance with the requirements of labor management and sanitation departments in the living areas on construction site, and appoint designated staff responsible for cleaning and disinfection. Work camp wastewater shall be discharged into the municipal sewer system or treated on-site with portable system. 	Construction stage By Contractor The mitigations have been conducted as following: Disinfection of the camp was done regularly. Extermination has been done regularly. Sites were maintained clean. Residential house are rented as construction camp with very good sanitation condition. Construction workers have been given health training. There is strict hygiene management on site. Residential houses with municipal sewers are rented. Public facilities are used for worker camp.
	Occupational safety	<ul style="list-style-type: none"> Provide safety hats and shoes to all construction workers and enforce their use by the workers; Provide ear plugs to workers working near noisy PME; Clearly demarcate all open-cut pipeline trenches and erect barriers on either side of them to prevent injury to workers / the public 	Construction stage By Contractor The mitigations have been conducted as following: Personal protective equipment has been provided to the workers.
	Food safety	<ul style="list-style-type: none"> Inspect and supervise food hygiene in cafeteria on site regularly. Cafeteria workers must have valid health permits. Once food poisoning is discovered, implement effective control measures immediately to prevent 	Construction stage By Contractor The mitigations have been conducted

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		it from spreading.	as following: Food hygiene in cafeteria was inspected regularly. Food poisoning shall be reported to local health authority and effective control measures should be done immediately as required.
	Disease prevention and safety awareness	<ul style="list-style-type: none"> Construction workers must have physical examination before start working on site. If infectious disease is found, the patient must be isolated for treatment to prevent the disease from spreading. From the 2nd year onwards, conduct physical examination on 20% of the workers every year. Establish health clinic at location where workers are concentrated, which should be equipped with common medical supplies and medication for simple treatment and emergency treatment for accidents. Specify the persons responsible for health and epidemic prevention, education on food hygiene, and disease prevention, to raise the awareness of workers. 	Construction stage By Contractor The mitigations have been conducted as following; Physical examination has been done for the workers. Infectious disease shall be reported to local health authority and measures should be taken as required. Public health facilities are used as very near to worker camp.
Community health and safety	Temporary traffic management	<ul style="list-style-type: none"> A traffic control and operation plan will be prepared together with the local traffic management authority prior to any construction. The plan shall include provisions for diverting or scheduling construction traffic to avoid morning and afternoon peak traffic hours, regulating traffic at road crossings with an emphasis on ensuring public safety through clear signs, controls and planning in advance. 	Construction stage By Contractor, local traffic police Traffic control plan has been fully coordinated with local traffic management authority before and during construction.
	Information disclosure	<ul style="list-style-type: none"> Residents and businesses will be informed in advance through media of the construction activities, given the dates and duration of expected disruption. 	Construction stage By Contractor Information of construction activities and traffic control has been posed on site and through media.
	Access to construction sites	<ul style="list-style-type: none"> Clear signs will be placed at construction sites in view of the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc and raising awareness on safety issues. All sites will be made secure, discouraging access by members of the public through appropriate fencing whenever appropriate. 	Construction stage By Contractor Signs are placed at construction site entrance and on site. Safety measures have been taken such as appropriate covering, and warning signs are placed.
	Utility services interruptions	<ul style="list-style-type: none"> Assess construction locations in advance for potential disruption to services and identify risks before starting construction. If temporary disruption is unavoidable, develop a plan to minimize disruption with relevant authorities e.g. power company, water supply company, communication company, and communicate dates and duration in advance to all affected people. 	Construction stage By Contractor, local service providers Close coordination has been made with the concerned utilities and authorities as required. Relocation shall be done by professional utilities or approved prior to construction by concerned utilities.
Social & environmental	Handling and resolving complaints on contractors	<ul style="list-style-type: none"> Establish a GRM, appoint a GRM coordinator within JPMO. Brief and provide training to GRM access points (JPMO, JMUCIDC, contractors). Disclose GRM to affected people before construction begins at the main entrance to each construction site. Maintain and update a Complaint Register to document all complaints. 	Construction stage By Contractor, JPMO, LIEC A GRM has been established for the project. Training on GRM has been provided. GRM has been disclosed to the affected people before construction.
Operational stage			
Traffic	Road and drainage condition	Regularly inspect and maintain the road surface and drainage system.	Operational stage By O&M units Not applicable in the reporting period
	Road safety and traffic accidents	Strictly enforce traffic law to improve road safety and reduce traffic accidents.	Operational stage By O&M units

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
			Not applicable in the reporting period
Social, environmental health	Noise mitigation on BRT corridor	To be implemented according to Table V.8 of this EIA	Operational stage By O&M units Not applicable in the reporting period
	Noise mitigation on five urban roads	Installation of ventilated double glazed windows at the 28 existing sensitive receptors in Table V.10 of this EIA that show noise level increases of >3dB(A) compared to the existing noise levels, if these receptors are not resettled in or before year 2020.	Operational stage By O&M units Not applicable in the reporting period
Social, health and safety	Flood protection	Regularly inspect and maintain river embankment and clean up refuse in the river	Operational stage By O&M units Not applicable in the reporting period
Water quality	Accident or spillage	O&M Manual to include accident and spill management measures for clean-up and to minimize the spread of pollutants in the event of an incident.	Operational stage By O&M units Not applicable in the reporting period
Water quality	Waste management and minimization	Park staff to regularly empty waste management receptacles and ensure transfer to appropriate licensed facility. Options for composting of green waste and reuse of recycled water for irrigation to be maximized.	Operational stage By O&M units Not applicable in the reporting period

27. Predominant environmental impacts observed resulting from these works include: solid waste production (demolition spoil and construction solids), noise, wastewater, dust from earth excavation, exhaust from vehicles and equipment, and land clearance for construction site establishment. In general, impacts were of similar scale at each site and adherence to EMP requirements.

2. Implementation of the project monitoring program

28. The following environment safeguard monitoring was conducted in the reporting period including internal monitoring, External monitoring, Compliance monitoring and Independent compliance monitoring. Summary data on the monitoring are presented in Table 3. Raw data are in Appendix 2. A summary of the monitoring activities is presented here.

External monitoring

29. The project office has appointed Beijing Zhonghuanbohong Environment Resources Tech Co., Ltd, which was hired in February 2017, to conduct external monitoring. In 2019, some subprojects have been carried out civil engineering, and the external monitoring of the site for civil engineering construction has been conducted. Summary of External Environmental Monitoring Activities and Results for July to December 2019 are provide in the following Table 2. The monitoring data sets are provided in Appendix 2.

Table 2. Summary of External Environmental Monitoring Activities and Results

Sub-project of Road Construction			
Subject and Parameters	Frequency and Activities	Monitoring compliant with EMP? Y/N	Results meet the required standards Y/N
<p>Surface water:</p> <p>At Junhua road construction mainly across the water to Yudai River; At Shaoshan west Road construction site mainly across the water to Yudai River; Bo'an Road construction Site mainly across the water to Yudai River;</p> <p>Water quality; PH, SS, CODcr, Ammonia nitrogen, Petro Oil,</p>	<p>Four times per year, once/day during construction</p> <p>3 activities at 18 sampling points</p>	Y	Y, Met the required standards
<p>Ambient air quality;</p> <p>At Junhua road construction site; Yangming West Road site; Zhongshan west Road construction site; Shaoshan west Road construction site; Bo'an Road construction Site</p> <p>Air quality: PM10</p>	<p>Four times per year, once/day during construction</p> <p>4 activities at 8 sampling points</p>	<p>Y at partly</p> <p>Air quality monitoring frequency(is) are less the than per month when there is construction occurring.</p>	Y, Met the required standards
<p>Environment Noise;</p> <p>at Junhua road construction; Yangming West Road construction, Zhongshan west Road construction site; Shaoshan west Road construction site; Bo'an Road construction Site</p> <p>noise limitation [LAeq dB(A)]</p>	<p>Four times per year, once/day during construction</p> <p>18 activities at 36 sampling points</p>	Y	Y, Met the required standards
<p>Soil and sediment for the dredging position mainly across the water to Yudai River; fish pond at Qingyuan Bus Station construction site.</p> <p>From July to December 2019, the monitoring set two monitoring points for the Yudai River and the fish pond. The monitoring points changed with the dredging position.</p> <p>Monitoring items: pH, zinc, chromium, arsenic, cadmium, chromium (hexavalent), copper, lead, mercury, nickel, carbon tetrachloride, chloroform, methyl chloride, 1,1-dichloroethane, 1,2-dichloroethyl Alkane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, dichloromethane, 1,2-dichloropropane, 1,1,1,2-Tetrachloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, 1, 2,3-trichloropropane, vinyl chloride, benzene, chlorobenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, ethylbenzene, styrene, toluene, m-xylene + p-xylene, o-xylene Toluene, nitrobenzene, aniline, 2-chlorophenol, benzo [a] anthracene, benzo [a] pyrene, benzo [b] fluoranthene, benzo [k] fluoranthene, pyrene, dibenzo [a , h] anthracene, indeno [1,2,3-cd] fluorene, naphthalene.</p>	<p>Two times per year, once/day during construction</p> <p>2 activities at 6 sampling points</p>	Y	Y, Met the required standards

Internal monitoring

30. Internal monitoring. Internal environmental monitoring including routine or periodic inspection of construction waste treatment and implementation of mitigation measures include ensuring adequate environmental supervision. The LIEC provides training to ensure that contractors and construction supervision company may conduct internal environmental monitoring and preparation of related reports. The LIEC provides detailed internal environmental monitoring program and various reports formats and Data. Environmental Site Inspection Checklists were used to conduct the Internal environmental Monitoring and Independent compliance monitoring. The internal monitoring and Independent compliance monitoring were conducted at the Junhua road construction sites and Yangming West Road construction sites, Zhongshan and Shaoshan West Road and Bo'an Avenue construction site for this reporting period. One of the results, as the example, of the Environmental Site Inspection Checklist are provided in the appendix 3. The LIEC assist JPMO compiled and submit semi-annual environmental reports to the Asian Development Bank.

31. The monitoring results are used to evaluate the: (i) extent and severity of environmental impacts; (ii) compliance with related rules and regulations; and (iii) overall effectiveness of the EMP. Required actions will be taken based on the monitoring results.

Compliance monitoring

32. The LIEC was recruited in Feb 2017. During the reporting period the LIEC: (i) conducted 4 visits to the project sites; (ii) held discussions with the JPMO Environment Officer and PIUs; and (iii) assisted the JPMO Environment Officer in preparing the EMR. The LIEC also provide a short narrative summary of the results of the monitoring, including: (i) the site inspections performed by JPMO Environment Officer and LIEC; (ii) number and timeliness of compliance reports; (iv) any instances of non-performance observed by the LIEC; (v) corrective actions for any non-compliance.

Independent compliance monitoring

33. The independent monitor agency is Jiangxi Zhongchang engineering consultant and supervision Co. Ltd., which was recruited in April 2017 by the JPMO. The lead monitor is Qu Anan. During the reporting period the company: (i) conducted 4 visits to the project sites; (ii) held discussions with the JPMO Environment Officer, PIUs, environment monitoring agency, and LIEC; (iii) reviewed the internal, external, and compliance reports.

Conclusions and next steps

34. The conclusions and Performance on the conducted 4 types of monitoring are provided as following table 3.

**Table 3: Summary of environmental monitoring activities and results
Between July and December 2019**

Type of monitoring	Subject and Parameter	Monitoring form and Frequency	Monitoring compliant with EMP program? Y/N	Corrective actions
Internal Environmental Monitoring	Site EMP, GRM information disclosure Soil erosion and contamination and the mitigation Air quality control and mitigation Noise control and mitigation Surface water pollution control and mitigation Solid waste management and mitigation Health and safety and management Eco-environment and vegetation management Physical cultural resources management	Construction site Inspection Environmental site Inspection check list Monthly at construction stage	Y	Not applicable
External Environmental Monitoring	Surface water quality meet the standard limitation Air emission and air quality and meet the standard limitation Noise emission and Sound environment quality and meet the standard limitation Soil and dredging sediment quality meet the standard limitation	Construction site Environmental sampling and monitoring and chemical analysis Quarter	Most of them are compliant with EMP Program.	To conduct the air quality monitoring according to the EMP requirement
Compliance monitoring.	Environmental procedure review Environment Institution and responsibility Environmental safeguard performance Environmental compliance	Construction site Inspection Document Review Workshop discussion Quarter	Y	Not applicable
Independent compliance monitoring.	Soil erosion and contamination and the mitigation Air quality control and	Construction site Inspection; Environmental site Inspection	Y	Not applicable

	mitigation	check list		
	Noise control and mitigation	Monthly at construction stage		
	Surface water pollution control and mitigation			
	Solid waste management and mitigation			
	Health and safety and management			
	Eco-environment and vegetation management			
	Physical cultural resources management			

35. The internal monitoring implemented by contractors and the Independent compliance monitoring assigned to the construction supervision Agency and soil and water conservation monitoring agency showed that most constructors have taken proper mitigation measures to alleviate the potential impacts of construction activities on air, noise, solid waste, soil erosion and surface water.

36. External Environmental Monitoring on environmental quality (appendix 2) showed that the water environment quality, air quality and sound environment quality can meet the related national standards. The construction activity impacts to the local environmental qualities are at slight level and are very un-significant. In the next stage, the 4 types of monitoring will be continued. Monitoring of the sediment contents of dredging activities should be conducted, especially for the Yudai River Subproject. The monitoring on the soil erosion and soil and water conservation should be also enforced.

3. Public consultations and grievance redress mechanism

37. This section describes the public consultations undertaken during the reporting period and implementation of the project GRM. Documentation for the consultations and/or GRM is in Appendix 4.

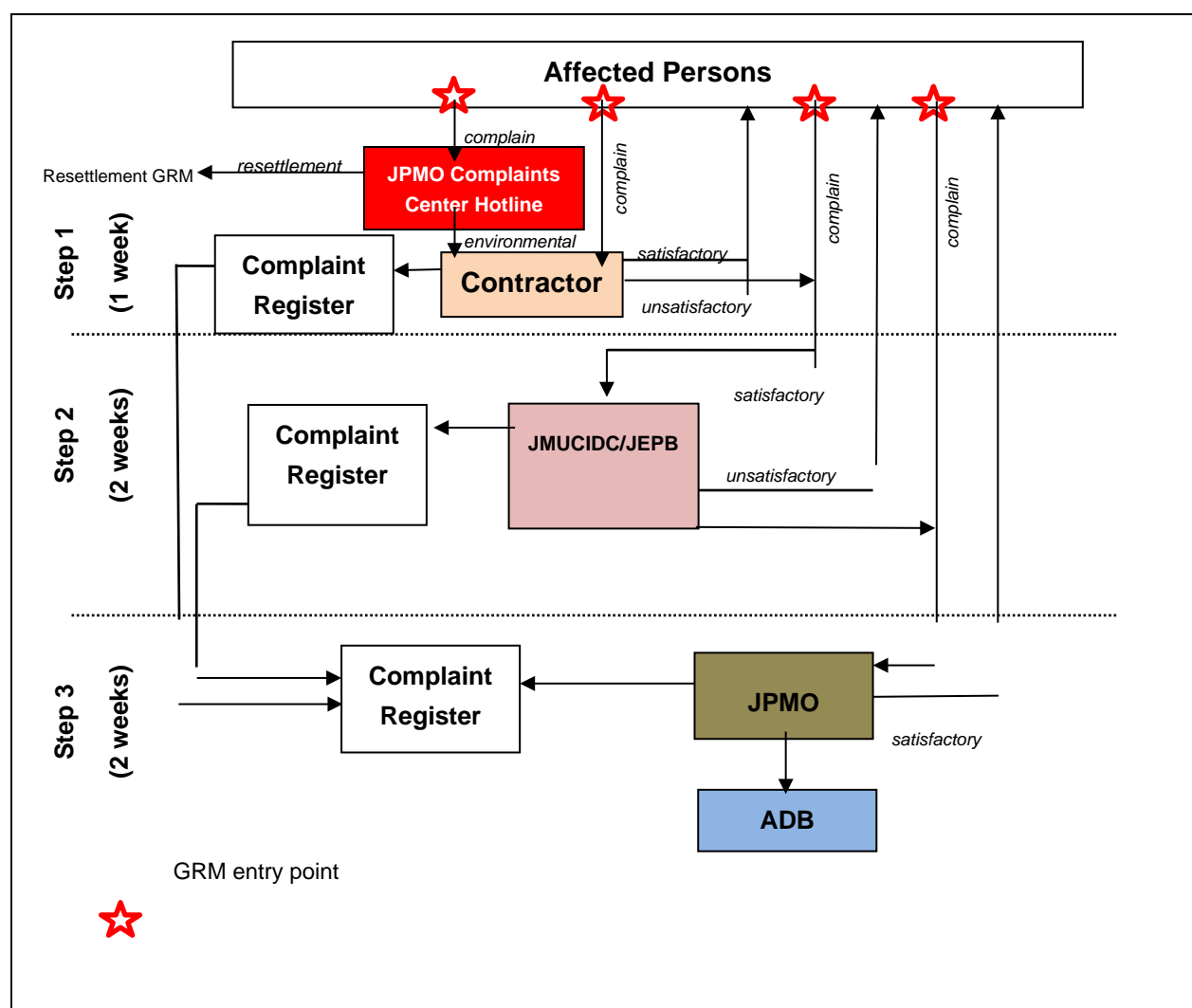
38. **Public Consultation:** There are some informal public consultation activities during the project implementation period. Between July and December 2019, two public consultation meetings were conducted, with a total of 30 people from 1 towns and villages and 3 agencies. The consulted people are local residents, and the receivers of the potential impact from the project civil activities. The aim of these meetings was to get the public comments on the project construction activity impacts on local environment and the conducting the related mitigation measures and improve the efficiency. The meetings provided residents and other stakeholders within and near the project sites the opportunity to learn more about the project, including the schedule of works and activities in the coming months. The project GRM was again presented to stakeholders, including key contact details.

39. The following key issues were consulted with participants: (i) the negative impacts on water resources, atmosphere, sound environment, construction waste treatment, and Eco-environment such as vegetation; (ii) the mitigation efficiency and environmental quality; (iii) the positive impact on the infrastructure facilities and environmental benefits and the macro social benefits of environmental improvement arising from the implementation of this project. There were 30 persons participated in the consultations. Most of them believed that the impacts on water environment were slight and the mitigations on wastewater pollution controls were effective. For the emission of fuel gas and noise from construction machinery, about 80% of them believe that the impacts were at slight or less level, and no one of them believe that the impacts were significant. For the construction waste treatment and solid waste pollution, about 60% of them believed that impacts were at slight or less level and the mitigations and managements were efficient, and about 5% of them believed that the impacts were significant. For the impacts on ecological system(vegetation) by the construction activities, about 65% of them believed that the impacts were at slight or less level and about 20% of them believed that the impacts on ecological system were existing or significant. Most of them believed that the implementation of this project provided the benefits on local environmental improvement and local infrastructure facilities. The public consultation meetings Questionnaire results are provided at appendix 4.

Grievance redress mechanism

40. The indicative GRM proposed in the EIA is displayed as below. Currently the project is under implementation stage. Each PIU's GRM system, including the focal point, procedures, timelines for different institutions involved, and so on, have been established as below. Following project GRM mechanism was informed to potential affected persons (APs) nearby the construction sites.

Figure 2. Grievance Redress Mechanism established for the project



41. The JPMO and the PIUs which sub-projects under construction or operation follow the procedures as presented above. Under the project, any APs eligible to file the complaints or claims are entitles to complain to the PIUs and Contractors which should take every case in serous and cordial manner to make every effort toward the solution according to the above indicative GRM system. In case the problem is not solved, the complaints or claims may be further filed to the environmental protection bureau and/or the relevant government department. The department staffs are responsible for making satisfactory reply and taking necessary actions toward solution.

42. The following table provides contact details of designed staff at each PIUs to be responsible for operating and managing GRM Entrance Points.

Table 4 Environmental Responsible Officers(ERO) and GRM Entrance Points

项目 subproject	施 工 单 位 Construction Contractor	负 责 人 ERO Person and Phone or Email	联 系 电 话 Phone or Email
君华大道一标 Urban Roads–Junhua Road (Ji'an South Road–Yangming West Road)	杭 州 市 政 Hangzhou Municipal Construction Group Co., Ltd.	曾晓梅 Zheng Xiaomei	15079611764
君华大道二标 Urban Roads–Junhua Road (Yangming West Road–Ji'an North Road)	南宁市政 Nanning Municipal Construction Group Co., Ltd.	莫丹 Mu Dang	18376732106
中 山 西 路 Urban Roads–Zhongshan Road (Jizhou Road–Bo'an Road), 3.34 km	江西省路桥工程集团有限公司 Jiangxi Luqiao Engineering Group Co., Ltd.	王玺龙 Wang Xilong	18370098171
韶 山 西 路 Urban Roads–Shaoshan Road (Jizhou Road–Bo'an Road)	太原市政建设集团有限公司 Taiyuan Municipal Construction Group Co., Ltd.	林凯玲 Lin Kaining	18105032005
伯 安 大 道 Urban Roads–Bo'an Road (Jifu Road–Shaoshan West Road), 3.15 km	江西中煤 Jiangxi Zhongmei Construction Group Co., Ltd.	曾工 Zeng Gong	13576895071
阳 明 西 路 Yangming Road (Jizhou Road–Bo'an Road), 2.05 km	江 西 玉 茗 集 团 Yuming Construction Group Co., Ltd.	步青 Bu Qing	15070158595
玉带河治理项目 Yudai River Rehabilitation	江西绿巨人环境股份有限公司 Jiangxi Lvjure Environment Group Co., Ltd.	刘泉 liu quan	18179630023

43. During this reporting period, there is no grievance received by the PMO. The prepared Record Form of Petitions and/or Complaints (GRM) provided at the appendix 3.

4. Training and capacity building

44. Between April and September 2019, a total of 2 training events were conducted (Table 5). The LIEC provided the trainings to the related trainees agencies. The training covered following topics: Environmental regulatory framework for ADB Loan project and ADB SPS, EMP and 3 type monitoring implementations, Environmental monitoring, inspection, reporting, Theories and practices on soil erosion protection, and solid waste management and control. A total of 42 people from more than 5 agencies participated in the training.

Table 5: Training for environmental safeguards conducted during the reporting period

Topic	Trainees Agency	Content	Trainees	Date	Feedback
Environmental monitoring, inspection, reporting	PIUs, contractors Internal, External Monitoring Agencies	Monitoring and inspection methods, data collection and processing, interpretation of data, reporting systems	12	April 2019	Contractors expressed appreciation for training, requested further guidance concerning monitoring procedures
The theories and practices on soil erosion protection, and solid waste management and control	PIUs, contractors, soil erosion Monitoring agencies, construction supervision Agencies	Risks for soil erosion and mitigation measures	11	September 2019	Contractors expressed appreciation for training, requested further guidance
To conduct the mitigation measures Soil erosion protection, and solid waste management and control	JPMO, PIUs, contractors, Construction Supervision , External , independent Monitoring Agencies	Environmental management responsibilities during construction; reporting format for EMP compliance; issues and corrective actions; opportunities for improvement of EMP Soil erosion and mitigation measures	19	April 2019 September 2019	Contractors expressed appreciation for training, requested further guidance
Total trainees			42		

45. Conclusions and next steps. In general the training activities are successful. Trainees gained good understanding of regulatory frameworks on ADB Loan Project

environmental Management. Contractors expressed appreciation for training, requested further guidance especially regarding how to implement corrective actions. Further guidance concerning monitoring procedures and practise should be trained in the next steps.

5. Compliance with loan and project assurances

46. The loan agreement and project agreement between the government and ADB includes 15 assurances (or “covenants”) for environmental safeguards and/or related to environmental issues. These relate to the timely and effective implementation of the EMP, as well as project-specific assurances tailored to the current project. Compliance with these assurances is a condition of the loan and project agreements. For the current reporting period: (i) 14 of the assurances are being complied with; (ii) 1 are not yet applicable; and (iii) for 14 assurances, compliance should already be initiated or achieved. Following table provide the environmental safeguard assurances for the project and the status of compliance with these assurances during the reporting period.

Table 6 Environment Related Project Agreement and Implementation Status of Environment Contract Clauses

Assurance	Status of Compliance
LOAN AGREEMENT	
Procurement of Goods, Works and Consulting Services	
<u>Conditions for Award of Contract</u>	
The Borrower shall through JPG cause JMG not to award any Works contracts that involves environmental impacts until: <ul style="list-style-type: none"> (a) Ji'an Municipal Environmental Protection Bureau has granted the final approval of the EIA; and (b) JMG and the Implementing Agency have caused the relevant provisions to be incorporated from the EMP into the Works contract. 	To be complied with the related Works contracts and relevant provisions.
PROJECT AGREEMENT-- <u>Implementation Arrangements</u>	
1. JPG and JMG shall ensure that the Project is implemented in accordance with the detailed arrangements set forth in the PAM. Any subsequent change to the PAM shall become effective only after approval of such change by JPG, JMG and ADB. In the event of any discrepancy between the PAM and this Project Agreement, the provisions of this Project Agreement shall prevail.	To be complied with the detailed arrangements in the PAM.
2. JMG shall cause the Project Implementing Agency and the PMO to ensure that all the Project implementation procedures agreed upon with ADB are followed, including all environmental and social safeguard requirements.	To be complied with the Project implementation procedures agreed upon with ADB.
<u>Specific Assurances</u> - Environment	

Assurance	Status of Compliance
<p>3. JMG shall ensure, and shall cause the Project Implementing Agency to ensure, that the detailed design of all urban road alignments: (a) will strictly avoid all locations of camphor trees that are 100 or more years old, and that all camphor trees that are 100 or more years old shall be tagged, conspicuously marked and fenced off before the commencement of construction; and (b) will avoid all locations of camphor trees that are less than 100 years old to the maximum extent possible and, where full avoidance of camphor trees less than 100 years old is not possible, that transplant schemes for the affected camphor trees shall be developed during detailed design, inserted into tender documents and implemented.</p>	<p>Being complied with the detailed design of all urban road alignments.</p>
<p>4. JMG shall ensure that disposal sites for excess soil and construction waste generated during Project implementation will be identified in the detailed design stage of the Project and provided at locations at least 500 meters from any water body, that the sites will be selected and operated so as to minimize social and environmental impacts to a level acceptable to ADB, and that all soil and other construction waste from the Project is properly disposed of at the identified sites.</p>	<p>Being complied with disposal sites for excess soil and construction waste generated during Project implementation will be identified in the detailed design stage of the Project and provided at locations at least 500 meters from any water body.</p>
<p>5. JMG shall implement measures for traffic noise mitigation described in the approved domestic Environmental Impact Report for the Project, the EIA and the EMP at such time as noise from Project roads results in a 3 decibel increase in noise levels compared to baseline measures, as described in the EMP. Measures proposed include planting a woodland buffer at one location along the Bus Rapid Transit corridor where land has to be made available, relocation of, or installing double-glazed windows for, affected households, and establishing adequate buffer distances or providing noise insulation for future developments along Project roads.</p>	<p>Not Yet Will To be complied with during operational stage.</p>
<p><u>Safeguards- Environment</u></p>	
<p>6. JPG and JMG shall ensure, and 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 Borrower relating to environment, health and safety; (b) the Environmental Safeguards; and (c) all measures and requirements set forth in the approved domestic Environmental Impact Report for the Project, the EIA, the EMP, and any corrective or preventative actions (i) set forth in a Safeguards Monitoring Report, or (ii) subsequently agreed between ADB and JMG. JMG shall cause the Project Implementing Agency to prepare, at the outset of Project implementation, detailed internal monitoring programs to be implemented by the contractors during construction and operation phases for each Output of the Project, and to incorporate such mitigation and monitoring measures into the design of Project components, relevant bidding documents and construction contracts. Throughout Project implementation, JMG and the Project Implementing Agency</p>	<p>Being complied with the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities.</p>

Assurance	Status of Compliance
shall review any changes to the Project design that may potentially cause negative environmental impacts and, in consultation with ADB, update the EIA and the EMP by revising mitigation measures as necessary to assure full compliance with environmental laws and regulations and with the SPS.	
7. JMG shall ensure that the Project Implementing Agency and any other agency do not, award any Works contract that involves environmental impacts until: (a) the Ji'an Municipal Environment Protection Bureau has granted the final approval of a domestic Environmental Impact Report for the Project that is consistent with the EIA; and(b) the Project Implementing Agency has incorporated the relevant provisions from the EMP into the Works contract.	Being complied with.
8. JMG shall and shall cause the Project Implementing Agency to ensure that sufficient resources and full time personnel are provided for monitoring EMP implementation, and will appoint Ji'an Environmental Monitoring Station or another independent organization acceptable to ADB to monitor air, noise and water during construction and operation of the Project facilities in accordance with the EMP and shall appoint a loan implementation environmental consultant acceptable to ADB for external evaluation of implementation of the EMP.	Being complied with the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities.
9. JMG will, and will cause the Project Implementing Agency to, provide semi-annual environmental monitoring reports from the loan implementation environmental consultant to the PMO throughout the Project construction period, reporting on the Project's and all contractors' compliance with the EMP, and shall ensure that the PMO submits such semi-annual environmental monitoring reports to ADB in a format acceptable to ADB. Where significant environmental impacts occur in the period between the semi-annual reports, JMG shall notify ADB of such occurrences in the Project's quarterly progress reports.	Being complied with the provide semi-annual environmental monitoring reports from the loan implementation environmental consultant to the PMO throughout the Project construction period, reporting on the Project's and all contractors' compliance with the EMP.
10. JMG shall ensure that (a) an emergency preparedness and response mechanism is developed for the Project in accordance with the EMP and all applicable laws and regulations of the Borrower relating to environment, health, labor, and occupational safety; and (b) the emergency preparedness and response mechanism is incorporated in the emergency preparedness and response systems of JMG and relevant JMG agencies.	Being complied with emergency preparedness and response mechanism.
11. During the pre-construction phase of the Project, JMG shall, and shall ensure that the PMO, the Project Implementing Agency ,Ji'an Municipal Environmental Protection Bureau and any other relevant agencies shall, review the final engineering designs for the Project and JMG shall, in consultation with ADB, adjust environmental mitigation and monitoring measures in the Project EMP accordingly.	Being complied with reviewing the final engineering designs for the Project

Assurance	Status of Compliance
12. Before and during the construction phases of the Project, JMG, through the PMO, shall organize and conduct training on implementation and supervision of the EMP and require the participation of responsible persons from the PMO, the Project Implementing Agency, any other relevant agencies and all contractors.	Being complied with to organize and to conduct training on implementation and supervision of the EMP and require the participation of responsible persons from the PMO.
19, Safety and Protection of Environment	
19.1 The Contractor shall be responsible for the safety of all activities on the Site.	Being complied with
19.2 The Contractor shall take all reasonable measures according to applicable environmental protection laws and regulations to protect the environment on and in vicinity of the Site and avoid damage or nuisance to personnel or to property of the public and others resulting from pollution, noise or other causes arising as a consequence of the Contractor's acts and/or operation.	Being complied with

6. Reporting

47. EMP implementation monitoring and progress reporting. During this reporting period, the LIEC has reviewed project progress reports, and carried out site visits to check compliance with the EMP, and the review of the environmental monitoring conducted by the external monitoring agency. The findings of the LIEC are described in this semi-annual EMP monitoring report. The project reporting requirements for environmental safeguards are summarized in Table 7.

Table 7 Project reporting requirements for environmental safeguards

Reports	From	To	Frequency	Progress this reporting period	Comments
Construction phase					
Progress report – internal monitoring of EMP implementation	Contractors,	PIUs	Monthly	July 2019 to December 2019	Completed
As above	PIUs CSC	JPMO	Quarterly	2019Q3,4report submitted	reports to be completed at the end of December. 2018.
Progress report – external monitoring of environmental variables	External monitoring agencies	JPMO	Quarterly	2019Q3, 4 report submitted	Report completed and submitted
EMR (overall progress of EMP implementation)	JPMO	ADB	Semi-annual	This is the fifth semi-annual report	The Fourth annual EMR have been submitted at the mid of July 2019.

Acceptance report / audit report – completion of facilities	Licensed institute	EPBs JPMO PIUs	Once per sub-component (Within three months after component completion)	Not applicable during this reporting period	Not applicable during this reporting period Not applicable
Operation phase					
Progress report – internal monitoring of EMP implementation	LIEC	PIUs, JPMO	Quarterly	Not applicable during this reporting period	Not applicable during this reporting period
EMR (overall progress of EMP implementation)	JPMO	ADB	Semi-annual	Not applicable during this reporting period	Not applicable during this reporting period
Project completion report – include ssafeguards	JPMO	ADB	Once (project completion)	Not applicable during this reporting period	Not applicable during this reporting period 本

ADB = Asian Development Bank, CSC = construction supervision company, EMP = environmental management plan, EMR = environment monitoring report, EPB = environment protection bureau, LIEC = loan implementation environment consultant, PIU = project implementation unit, PMO = project management office.

48. Conclusions and next steps. Progress reporting from the PMO to ADB complies with the EMP reporting schedule. The next EMR will be the period of January to June 2020 and will be submitted to ADB at end of July 2020.

III. LESSONS LEARNED

49. In the future, it is necessary to strengthen the public participation on project impact (positive and negative effects). The project beneficial information should be direct publicity to the potential impact population. The project beneficial information include (i) to improve public transport services by introducing a JRT system along the main corridor of the city; and (2) Yudai River rehabilitation component will improved river is expected to create a more attractive environment for the city, improving quality of life while maintaining natural ecological systems and functions. The project will benefit the population in Jizhou and Qingyuan Districts by Urban road construction.

IV. GENERAL CONCLUSION AND NEXT STEPS

50. During this reporting duration, there has been no any environmental complaint from the local communities, local EPBs and from potentially affected persons. No environmental incidents have been reported during the report period.

51. Predominant environmental impacts observed to be resulting from these works include: solid waste production (demolition spoil and construction solids), noise, wastewater, dust from earth excavation, exhaust from vehicles and equipment, and land clearance for construction site establishment. Most of the measures defined in the EMP have been implemented. In general, most of them are compliance with EMP.

52. Based on observations from site inspections, It can be found that the construction activities have fulfilled the environmental protection and management obligations required by both PRC and ADB. The internal monitoring implemented by construction contractors, and the Independent compliance monitoring was assigned to the construction supervision agency and soil and water conservation monitoring agency showed that constructors have taken proper mitigation measures to alleviate the potential impacts of construction activities on air, noise, solid waste, soil erosion and surface water.

53, External Environmental Monitoring on environmental quality (appendix 2) showed that monitoring results met the water environment quality standard, air quality standard and sound environment quality standard respectively, and no exceeding the standards were found. The construction activities impacts to the local environmental quality are at slight level and at short of construction time, and can be neglected.

54, Water and soil conservation monitoring exercises have been carried out with the results showing that efforts on soil erosion control should to be strengthened in the next stage. It is recommended that construction waste disposal sites be better considered and strengthened to reduce soil erosion during rainy seasons. Mitigation for soil erosion should be strengthened. Although there are no noise emissions exceeded the related noise standard, it is need to strengthen the management on construction machinery.

55, To continue implement the 4 types of monitoring. To ensure the project's sustainability, it is recommended that JPMO and/or local governments continue to monitor the related water resources programs or wetland over the long term. Monitoring should ensure that facilities financed by the project are properly maintained and remain operational. It is also suggested JPMO and/or local governments assess the project's effect on water resources utilization and wetland protection.

APPENDIX 1.

SUMMARY OF THE PROJECT ENVIRONMENTAL MANAGEMENT PLAN

The project environmental management plan (EMP) is the primary reference document for the government and ADB for all environment-related mitigation, monitoring, reporting, and training activities for the project. Timely and effective implementation of the EMP is a key condition of the loan agreement between the government and ADB. The EMP was prepared as part of the Environmental Impact Assessment in April 2014. The EMP is being implemented over 6 years, comprising 4 years of construction and 2 year of operation. The content of the EMP includes: institutional roles and responsibilities for EMP implementation; mitigation measures for environmental safeguard risks; environmental monitoring and reporting; training and capacity building; grievance redress mechanism (GRM); public consultation; cost estimates; and, other information e.g. terms of reference for key position.

Project institutional arrangements (Section B of the EMP) This section of the EMP describes the roles and responsibilities of relevant agencies for EMP implementation. For this project, the principal person responsible for EMP coordination is the JPMO Environment Officer (Mr. Huang Maoping), acting on behalf of the JPMO. On-site implementation of the EMP is by the implementing agencies, contractors, and construction supervision companies (CSCs). Guidance and support to the JPMO Environment Officer is provided by the Loan Implementation Environment Consultant (LIEC)(Mr. Liu Huaquan, Research Fellow of Eco-Environmental Science and Registered EIA Engineer).

Project readiness assessment (Section D of the EMP). This is the first key step prior to the start of project civil works, to ensure that preparations for EMP implementation have been completed.

Potential impacts and mitigation (Section C of the EMP). This section of the EMP summarizes the potential environmental impacts and mitigation measures for the different phases of the project: detailed design and pre-construction phase; construction phase; and operations phase. Overall environmental responsibilities are outlined in EMP-Table 1: Environmental responsibilities in the EMP summarizes the environmental risks and mitigation measures, and agencies responsible for implementation and supervision of these measures. For this project, the key potential impacts and/or issues of concern are: Detailed Design Stage-- Loss of land and topsoil and increased risk of erosion; Flood control capacity of Yudai River; Preservation of old camphor trees (see Table IV.19 in the EIA report; Preservation of old camphor trees (see Table IV.19 in the EIA report), at Pre-construction Stage---Lack of environmental management capacities within JPMO, JIDC and O&M units; Construction site wastewater, bridge construction and dredging impact on water bodies, at Construction stage --- Spoil disposal; Soil contamination and erosion,

Construction site runoff and wastewater discharge; dredging impact, Construction site refuse and spoil disposal, Destruction of vegetation; at Operational Stage-- Road and drainage condition, Waste management.

Training (Section E of the EMP). This section of the EMP describes the training program for environmental safeguards, including the recipients and frequency of training.

Consultation and participation plan (Section F of the EMP). This section of the EMP identifies the mechanisms by which consultations will be accomplished (e.g., through workshops, questionnaires, etc.), the frequency of consultations, topics, and target audiences.

Environmental monitoring program (Section D of the EMP). The program comprises four types of monitoring: (i) internal monitoring; (ii) external monitoring; (iii) EMP compliance monitoring; and (iv) independent compliance monitoring. Internal monitoring is assessment by the project implementation units (PIUs) and/or CSCs to ensure the contractors are implementing mitigation measures as described in their contractual arrangements and EMP. External monitoring is the measurement of specific environmental variables (e.g. air quality, dust levels, noise emissions) to ensure that the construction activities do not exceed the legal parameters and standards specified for the project. This is being conducted by a certified monitoring agency, Beijing Zhonghuanbohong Environmental Resources Science and Technology Co., Ltd. EMP compliance monitoring is the overall assessment of whether all EMP measures are being complied with, and is conducted by the JPMO Environment Officer, supported by the LIEC. This EMP monitoring does not involve quantitative measurement of environmental variables, but is based on visual inspection, site visits, and review of the progress reports for internal and external monitoring. Independent compliance monitoring is the same as compliance monitoring, but which is being conducted by an entirely independent agency, the Jiangxi Zhongchang engineering consultant and supervision Co. Ltd,. This additional monitoring is being conducted due to the project's status as safeguard category "A" for the environment under ADB's Safeguard Policy. The independent compliance monitoring comprises a combination of quantitative measurement of selected variables (to verify the results of the external monitoring) and visual inspections, site visits, and review of available reports (to verify the results of the internal, external, and compliance monitoring).

Costs (Section H of the EMP). This section of the EMP describes the estimated costs for EMP implementation over 6 years. The cost estimates in the EMP include the costs for the mitigation measures, training, and monitoring.

Reporting (Section D of the EMP). This section of the EMP describes the reporting requirements for the project, including the responsible agencies and reporting frequency.

APPENDIX 2 External Monitoring Results

**Semi-annual Report on Environmental Protection Monitoring of
ADB Financed Ji'an Urban Transport Project in Jiangxi
Province**

□ July – December 2019 □

**Beijing Zhonghuan Bohong Environmental
Resources Technology Co., Ltd.
February 2020**

1. Preface

The ADB-financed Jiangxi Ji'an Urban Transport Project is divided into five subprojects: road construction, public transportation, traffic management and security, environmental protection, and institutional capacity building. At present, five subprojects have started construction. According to the requirements of the "Asian Bank Loan Jiangxi Ji'an Urban Transport Project Environmental Management Plan", The project office commissioned Beijing Zhonghuan Bohong Environmental Resources Technology Co., Ltd. to carry out site investigation and environmental monitoring during the construction of the ADB-financed Ji'an urban transportation project.

The total length of Junhua Avenue is 8795m, which is divided into two bidding sections. The construction scope of the Jiuahuan Road is from Ji'an South Avenue to Yangming West Road. The construction time is June 19, 2017. At present, the earthwork and drainage engineering of the Junhuahuan Road, Bridge and culvert engineering, roadside stone, asphalt concrete, middle-level laying, greening land leveling, sprinkler irrigation pipelines have all been completed, street lamp bases, sign bases have been installed. The construction scope of the II bid section is from Yangming West Road to Ji'an North Avenue. The construction time is June 5, 2017. At present, Junhua II Biao Shi has completed the entire line of water stable layer, the asphalt bottom of the main lane, the middle layer construction, road curb stone installation, Installation and backfill of rainwater pipes, installation and backfill of irrigation water pipes, installation of reinforced cages and foundation construction. Yangming West Road has a total length of 1800m, and the construction time was July 1, 2017. It has been basically completed. The total length of Shaoshan West Road is 2986m. The construction time is July 2018. At present, earthwork, rainwater and sewage engineering, pipe culverts and box culverts have been completed. The total length of Zhongshan West Road is 3338m, and the start time is July 2018. At present, the subgrade earth and stone works have completed 3.1Km; the rainwater main pipeline and inspection well have been completed 5800 meters; the sewage main pipeline and inspection well have been completed 4400m. Graded crushed stone base course has been paved 2.5Km, cement stabilized crushed stone base course has been paved 2.5Km; stone road masonry has been completed 830m. The total length of Bo'an Avenue is 3147m, and the construction time is September 2018. At present, the foundation stone works have completed 1.88Km, the rainwater main pipeline and inspection wells have been completed 7661 meters; the road works have been completed 1.28Km; completed.

According to the construction conditions of each road, the monitoring content is surface water quality monitoring across the water body at the Yudai River (Junhua Avenue, Shaoshan West Road, and Bo'an Avenue), and air quality and environmental monitoring at sensitive points during the construction period (Junhua Avenue, Yangming West Road). , Zhongshan West Road, Shaoshan West Road and Bo'an Avenue), noise monitoring of sensitive points during construction (Junhua Avenue, Yangming West Road, Zhongshan West Road, Shaoshan West Road and Bo'an Avenue), Yudai River and Yutang silt monitoring . Water, air, soil and other samples were collected and sent to the central analysis room. The samples were analyzed and tested in time during the sample storage period, and the noise was monitored on-site.

2. Methodological standards adopted

2.1 Monitoring method standard

Each monitoring project monitoring method adopts the national standard method, Standard code for monitoring items and monitoring methods is shown in Table 1.

Table 1 Standard code for monitoring projects and analytical methods

Serial numbe	Parameter name	Standards, procedures and code names
1	pH value	Portable pH meter method "Water and Wastewater Monitoring and Analysis Methods" Fourth Edition (2002) State Environmental Protection Administration 3.1.6.2
2	Suspended matter	Water quality determination of suspended solids (GB 11901-1989)
3	COD	Water quality - Determination of chemical oxygen demand - Dichromate method HJ828-2017
4	Ammonia nitrogen	Water quality ammonia nitrogen determination Nessler Spectrophotometry HJ535-2009
5	Petro	Water quality - Determination of petroleum - Ultraviolet spectrophotometric method HJ970-2018
6	Fecal coliform	Determination of water-based fecal coliforms HJ/T347-2007 Determination of water-based fecal coliforms HJ 347.1-2018
7	PM ₁₀	Determination of atmospheric articles PM ₁₀ and PM _{2.5} in ambient air by gravimetric method HJ 618-2011
8	Equivalent continuous A sound level	Environmental Noise Monitoring Technical Specifications Urban acoustic environment routine monitoring HJ 640-2012
9	Zinc, chromium	Determination of copper, zinc, lead, nickel and chromium in soils and sediments, Flame atomic absorption spectrophotometry HJ 491-2019
10	arsenic	Determination of mercury, arsenic, selenium, bismuth and antimony in soils and sediments Microwave Digestion / Atomic Fluorescence HJ680-2013
11	Lead ,cadmium	Soil quality Determination of lead and cadmium Graphite furnace atomic absorption spectrophotometry GB/T17141-1997
12	Chromium (hexavalent)	Determination of hexavalent chromium in solid waste Alkali digestion / flame atomic absorption spectrophotometry HJ687-2014
13	Copper, nickel	Determination of copper, zinc, lead, nickel and chromium in soils and sediments, Flame atomic absorption spectrophotometry HJ 491-2019
14	Hg	Determination of mercury, arsenic, selenium, bismuth and antimony in soils and sediments, Microwave Digestion / Atomic Fluorescence HJ680-2013

2.2 Evaluation standard

(1) Construction period sensitive point air quality environmental monitoring implementation of "ambient air quality standard two level standard" (GB3095-1996);

(2) Sensitivity point noise during construction period Implementation of Category 2 District Standards for Acoustic Environmental Quality Standards (GB3096-2008); Construction site noise implementation "Construction site boundary environmental noise emission standards" (GB12523-2011);

(3) Evaluation of water quality during construction period and implementation of class III standards in surface water environmental quality standard (GB3838-2002);

(4) The soil environment of the construction land implements the "Soil Environmental Quality Standards for Soil Pollution Risk Management and Control Standards for Construction Land (Trial)" (GB36600-2018) Table 1 Risk screening value Category 2 land use standards; The soil environment of agricultural land implements the "Standard for Soil Environmental Quality Standards for Risk Control of Agricultural Land Soil Pollution (Trial)" (GB15618-2018) Table 1 Risk screening value standards.

3. Monitoring content

3.1 Junhua Road Environmental Monitoring during Construction Period

3.1.1 Ambient air monitoring

From July to December 2019, the construction of the standard section of Junhua Avenue was mainly concentrated in the attachment of Jiaogangling. The construction of the section II of Junhua Road was concentrated in Shihuling, and there were more sensitive points in the two places. The monitoring point is set here. During this period, the construction of the standard and the section II along the Junhua Avenue were carried out, and the construction section was scattered.

Monitoring point:A1Jiaogangling Village、 A2 Detention center



Jiaogangling A1



Detention center A2

Monitoring project:PM₁₀

Monitoring results and evaluation:

Table 2 Air Quality Environmental Monitoring Results and Evaluation

Standards During Construction Period

Monitoring time	Monitoring point	Monitoring project
		PM ₁₀ (mg/m ³)
2019.07.03	A1	0.036
	A2	0.017
2019.08.19	A1	0.030
	A2	0.020
2019.10.17	A1	0.086
	A2	0.084
Ambient Air Quality Standard (GB3095-2012) (secondary standard)		0.15

ADB loans Jiangxi Ji'an Urban Transport Project Junhua Avenue

During the construction period from July to December 2019, the PM₁₀ concentrations measured at all sensitive points met the secondary standard limits of the Ambient Air Quality Standard (GB3095-2012), indicating the construction The surrounding environment has less impact

3.2.2 Environmental noise monitoring

From July to December 2019, the external environmental monitoring conducted a monthly on-site monitoring of sensitive points along Junhua Avenue and construction sites.

Monitoring point: N1 Laoyangjia Village、N2 Jiaogangling Village、N3Baitang Village、N4 Ji'an Occupational Health School、N5Ji'an Special Education School、N6 Dujia fang Village、N7 Wuli Village、N8 Shihuling Village、N9 Detention center 、N10 First bid section construction department、N11 Second bid section construction department.

Monitoring project: Equivalent continuous A sound level.



Laoyangjia Village N1



Jiaogangling Village N2



Baitang Village N3



Ji'an Occupational Health SchoolN4



Ji'an Special Education SchoolN5



Dujia fang Village**N6**



Wuli Village**N7**



Shihuling Village **N8**



Detention center**N9**



First bid section construction
department **N10**



Second bid section construction
department **N11**

Monitoring results and evaluation:

Table 3 Noise monitoring results and evaluation standards during construction period Unit (dB)

Date	N1		N2		N3		N4		N5		N6		N7		N8		N9		N10		N11	
	Day	Nig ht	Day	Nig ht	Day	Nig ht	Day	Nig ht	Day	Nig ht	Day	Nig ht	Day	Nig ht	Day	Nig ht	Day	Nig ht	Day	Nig ht	Day	Nig ht
2019.07.03	48.1	41.5	46.6	42.7	49.0	43.5	47.9	42.7	49.3	43.3	46.9	42.8	48.7	43.2	48.1	43.4	46.6	43.9	58.4	46.9	58.1	47.8
2019.08.19	57.1	43.3	53.6	44.0	53.0	41.7	45.4	43.1	50.0	43.9	54.3	39.4	53.4	43.2	55.4	45.7	52.4	44.3	53.9	44.1	52.9	47.0
2019.09.02	46.4	44.0	46.8	44.3	46.9	44.0	48.2	43.4	48.5	43.4	48.2	44.3	47.1	45.2	46.9	43.4	46.7	43.2	49.8	47.0	49.7	46.1
2019.10.15	57.7	41.0	55.2	38.9	56.6	47.0	57.6	47.9	56.7	47.1	55.8	45.1	54.0	42.3	53.5	40.2	58.6	45.6	58.7	47.6	56.9	37.6
2019.11.04	54.7	42.9	54.1	43.5	48.7	44.6	55.0	45.3	50.6	42.8	51.8	44.0	50.1	44.5	51.6	44.5	51.2	44.4	59.4	44.5	59.3	44.1
2019.12.11	48.4	47.4	51.1	46.5	57.2	46.5	55.2	40.2	52.9	46.1	56.7	39.0	56.9	45.0	52.9	44.0	55.4	46.5	57.0	48.1	56.9	45.6
Evaluation standard	Day:60 Night:50																		Day:70 Night:55			

ADB loans Jiangxi Ji'an Urban Transport Project, Junhua Avenue

During the construction period from July to December 2019, the construction of Junhua Avenue was in line with the "Standards for Environmental Noise Emissions from Construction Sites" (GB12523-2011). The indicators measured by all sensitive points are in line with the Class 2 standard of the Acoustic Environmental Quality Standard (GB3096-2008), indicating that the construction of Junhua Avenue has less impact on the surrounding environment.

3.2.3 Surface water monitoring

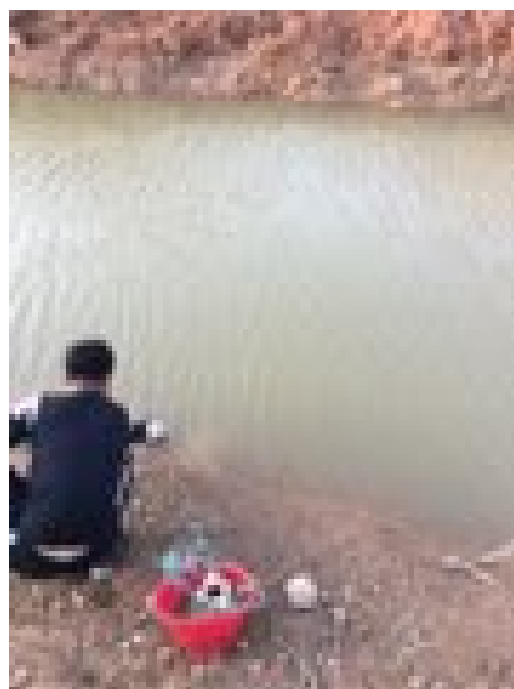
The construction section of Junhua Road mainly spans the water body for the Yudai River. From July to December 2019, this external environmental monitoring will monitor the water quality of the Yudai River on a monthly basis.

Monitoring point :SW1 50m above water body、SW2 100m downstream of the water body

Monitoring project : pH value、Suspendedmatter、COD、Ammonianitrogen、Petro、Fecal coliforms



50m above water bodySW1



100m downstream of the water bodySW2

Monitoring results and evaluation:

Table 4 Surface Water Quality Monitoring and Evaluation Standards in Yudai River
Unit: mg/L(pH value without dimension)

监测时间 date	监测点位 points	Monitoring project					
		pH Value	SS	COD	Ammonia nitrogen	Petro	Fecal coliforms (units/L)
2019.07.04	50m above water body SW1	7.10	10	20	0.727	0.03	140
	100m downstream of the water body SW2	7.15	14	12	0.755	0.05	470

2019.08.20	50m above water body SW1	7.1	8	12	0.472	0.03	1600
	100m downstream of the water body SW2	7.2	8	15	0.969	0.02	790
2019.09.03	50m above water body SW1	7.17	11	9	0.680	0.02	860
	100m downstream of the water body SW2	7.30	13	11	0.524	0.01	160
2019.10.17	50m above water body SW1	7.2	9	13	0.159	0.02	2800
	100m downstream of the water body SW2	7.3	9	11	0.159	0.02	2600
2019.11.05	50m above water body SW1	7.7	8	10	0.318	0.02	30
	100m downstream of the water body SW2	7.6	7	17	0.914	0.02	40
2019.12.11	50m above water body SW1	7.48	11	12	0.838	0.01 _L	80
	100m downstream of the water body SW2	7.58	8	14	0.800	0.01 _L	320
Evaluation Standard (Class III)		6-9	≤80	≤20	≤1.0	≤0.05	≤10000

ADB loans Jiangxi Ji'an Urban Transport Project, Junhua Avenue

During the construction period from July to December 2019 the surface water quality of the Yudai River remained stable, and the measured indicators met the Class III water standards of "Surface Water Environmental Quality" (GB3838-2002). It shows that the construction activities have little impact on the water quality of the Yudai River.

3.2 Yangming West Road Environmental Monitoring During Construction Period

3.2.1 Ambient air monitoring

From July to December 2019, due to the short construction scope of Yangming West Road, this external environmental monitoring set the environmental air monitoring point in Nan'an Village. Monitoring point: A1 Nan'an Village.

Monitoring project: PM₁₀



A1 Nan'an Village

Monitoring results and evaluation:

Table 5 Air Quality Environmental Monitoring Results and Evaluation

Standards During Construction Period

Monitoring time	Monitoring point	Monitoring project
		PM ₁₀ (mg/m ³)
2019.07.03	A1	0.028
2019.08.19	A1	0.025
2019.10.17	A1	0.090
Ambient Air Quality Standard (GB3095-2012) (secondary standard)		0.15

ADB loans during the construction period from July to December 2019 in Yangming West Road, Ji'an Urban Transport Project, Jiangxi Province, the PM₁₀ concentration measured at the sensitive points of Nan'an Village met the secondary standard limit of Ambient Air Quality Standard (GB3095-2012). The construction of Yangming West Road has less impact on the surrounding environment.

3.2.2 Environmental noise monitoring

From July to December 2019, this external environmental monitoring conducted an on-site monitoring of sensitive points along the Yangming West Road and the construction site.

Monitoring point: N1 Nan'an Village、N2 Dongtou village、N3 Yangming West Road construction point.

Monitoring project: Equivalent continuous A sound level.



Nan'an Village **N1**



Dongtou village **N2**



Yangming West Road construction pointN3

Monitoring results and evaluation:

Table 6 Noise monitoring results and evaluation standards during construction period

监测时间 date	监测点位 points	连续等效 A 声级 (dB)	
		昼间 day	夜间 night
2019.07.04	N1Nan'an village	50.4	42.5
	N2Dongtou Village	49.7	42.8
2019.08.19	N1Nan'an village	52.7	44.7
	N2Dongtou Village	54.7	44.3
2019.09.02	N1Nan'an village	47.8	45.2
	N2Dongtou Village	48.5	39.3
2019.10.15	N1Nan'an village	57.9	47.0
	N2Dongtou Village	59.8	45.0
2019.11.04	N1Nan'an village	52.4	48.8
	N2Dongtou Village	50.7	45.0
2019.12.11	N1Nan'an village	53.3	46.6
	N2Dongtou Village	52.7	42.8
Evaluation standard (Class 2 area standard)		60	50
2019.07.04	N3Yangming West Road Construction Site	59.8	49.2
2019.08.19	N3Yangming West Road Construction Site	52.6	42.8
2019.09.03	N3Yangming West Road Construction Site	50.8	43.0

监测时间 date	监测点位 points	连续等效 A 声级 (dB)	
		昼间 day	夜间 night
2019.10.15	N3Yangming West Road Construction Site	57.2	38.0
2019.11.04	N3Yangming West Road Construction Site	60.2	45.4
2019.12.11	N3Yangming West Road Construction Site	59.9	49.9
Evaluation standard (Environmental Noise Emission Standards for Construction Sites)		70	55

ADB loans during the construction period from July to December 2019, in Yangming West Road, Ji'an Urban Transport Project, Jiangxi Province, all construction sites are in compliance with the "Environmental Noise Emission Standards for Construction Site Boundaries" (GB12523-2011). The indicators are in line with the Class 2 standard of the Acoustic Environmental Quality Standard (GB3096-2008), indicating that the construction of Yangming West Road has less impact on the surrounding environment.

3.3 Zhongshan west Road Environmental Monitoring during Construction Period

3.3.1 Ambient air monitoring

From July to December 2019, the construction of Zhongshan West Road was mainly concentrated in the vicinity of Shili Village. Construction was carried out in other places, but the construction section was scattered. Therefore, the atmospheric environment monitoring point was set up in Shili Village.

Monitoring point:A1 Shili Village

Monitoring project:PM₁₀



A1 Shili Village

Monitoring results and evaluation:

Table 7 Air Quality Environmental Monitoring Results and Evaluation

Standards During Construction Period

Monitoring time	Monitoring point	Monitoring project
		PM ₁₀ (mg/m ³)
2019.07.03	A1Shili Village	0.027
2019.08.19	A1Shili Village	0.026
2019.10.17	A1Shili Village	0.056
Ambient Air Quality Standard (GB3095-2012) (secondary standard)		0.15

ADB loans Jiangxi Ji'an Urban Transport Project, Zhongshan West Road

During the construction period from July to December 2019, the PM10 concentration measured at the sensitive points of Shili Village met the secondary standard limit of the Ambient Air Quality Standard (GB3095-2012). The construction of Shanxi Road has less impact on the surrounding environment.

3.3.2, Environmental noise monitoring

From July to December 2019, this external environmental monitoring conducted an on-site monitoring of the sensitive points along the Zhongshan West Road and the construction site. During the monitoring period, the construction activities were mainly concentrated in the vicinity of the Henglong shed, so this noise monitoring set a noise monitoring point at the construction point near Shili Village.

Monitoring point: N1 Henglongpengxia Village、N2 Shili Village、N3 Naoziling Village、N4 Zhongshan West Road construction point

Monitoring project: Equivalent continuous A sound level



Henglongpengxia VillageN1



Shili VillageN2



Naoziling VillageN3



Zhongshan West Road construction pointN4

Monitoring results and evaluation:

Table 8 Noise monitoring results and evaluation standards during construction period

Monitoring time	Monitoring point	Equivalent continuous A sound level (dB)	
		Day	Night
2019.07.04	N1Henglongpengxia Village	49.3	42.9
	N2Shili Village	48.4	42.4
	N3Naoziling Village	49.0	42.8
2019.08.19	N1Henglongpengxia Village	57.3	45.4
	N2Shili Village	54.4	44.6
	N3 Naoziling Village	53.6	43.1
2019.09.03	N1Henglongpengxia Village	47.9	41.8
	N2Shili Village	51.7	41.9
	N3 Naoziling Village	47.7	40.1
2019.10.16	N1Henglongpengxia Village	53.6	43.8
	N2Shili Village	51.7	45.4
	N3 Naoziling Village	53.3	42.7
2019.11.04	N1Henglongpengxia Village	51.6	45.2
	N2Shili Village	52.5	41.7
	N3 Naoziling Village	49.2	46.3
2019.12.11	N1Henglongpengxia Village	55.6	45.3
	N2Shili Village	55.2	38.4
	N3 Naoziling Village	63.4	46.8
Evaluation standard (Class 2 area standard)		60	50

Monitoring time	Monitoring point	Equivalent continuous A sound level (dB)	
		Day	Night
2019.07.04	N4Zhongshan West Road construction point	58.4	47.4
2019.08.19	N4Zhongshan West Road construction point	54.1	48.0
2019.09.03	N4Zhongshan West Road construction point	51.3	38.9
2019.10.16	N4Zhongshan West Road construction point	56.3	44.1
2019.11.04	N4Zhongshan West Road construction point	60.2	43.2
2019.12.11	N4Zhongshan West Road construction point	59.0	48.5
Evaluation standard (Environmental Noise Emission Standards for Construction Sites)		70	55

ADB loan Jiangxi Ji'an Urban Transport Project, Zhongshan West Road

During the construction period from July to December 2019, all construction sites are in line with the "Environmental Noise Emission Standard for Construction Site Boundary" (GB12523-2011), and the indicators measured by various sensitive points. All of them meet the Class 2 standard of the Acoustic Environmental Quality Standard (GB3096-2008), indicating that the construction of Zhongshan West Road has less impact on the surrounding environment.

3.4.1 Ambient air monitoring

From July to December 2019, the construction area of Lushan West Road was short, so this environmental air monitoring point was set up in Xiazhou Village.

Monitoring point:A1 Xiazhou Village

Monitoring project:PM₁₀



A1 Xiazhou Village

Monitoring results and evaluation:

Table 9 Air Quality Environmental Monitoring Results and Evaluation

Standards During Construction Period

Monitoring time	Monitoring point	Monitoring project
		PM ₁₀ (mg/m ³)
2019.07.03	A1Xiazhou Village	0.027
2019.08.19	A1Xiazhou Village	0.049
2019.10.17	A1Xiazhou Village	0.080
Ambient Air Quality Standard (GB3095-2012) (secondary standard)		0.15

During the construction period from July to December 2019 in the west of Jiaoshan Road, Ji'an Urban Transport Project of Jiangxi Ji'an City, the concentration of PM₁₀ measured in the sensitive points of Xiazhou Village met the Class 2 standard limit of Ambient Air Quality Standard (GB3095-2012). The construction of Shaoshan West Road has less impact on the surrounding environment.

3.4 Shaoshan west Road Environmental Monitoring during Construction Period

3.4.1 Ambient air monitoring

From July to December 2019, the construction area of Lushan West Road was short, so this environmental air monitoring point was set up in Xiazhou Village.

Monitoring point: A1 Xiazhou Village

Monitoring project: PM₁₀



A1 Xiazhou Village

Monitoring results and evaluation:

Table 9 Air Quality Environmental Monitoring Results and Evaluation

Standards During Construction Period

Monitoring time	Monitoring point	Monitoring project
		PM ₁₀ (mg/m ³)

2019.07.03	A1Xiazhou Village	0.027
2019.08.19	A1Xiazhou Village	0.049
2019.10.17	A1Xiazhou Village	0.080
Ambient Air Quality Standard (GB3095-2012) (secondary standard)		0.15

During the construction period from July to December 2019 in the west of Jiaoshan Road, Ji'an Urban Transport Project of Jiangxi Ji'an City, the concentration of PM10 measured in the sensitive points of Xiazhou Village met the Class 2 standard limit of Ambient Air Quality Standard (GB3095-2012). The construction of Shaoshan West Road has less impact on the surrounding environment.

3.4.2 Environmental noise monitoring

From July to December 2019, this external environmental monitoring conducted an on-site monitoring of sensitive points along the Xishan Road and the construction site.

During the monitoring period, the construction activities were mainly concentrated near the front of the village. Therefore, this noise monitoring set a noise monitoring point at the construction site near the sensitive point village.

Monitoring point: N1 Xiazhou Village、N2 Chunqian Village、N3 Shaoshan West Road construction point

Monitoring project: Equivalent continuous A sound level.



Xiazhou VillageN1



Chunqian VillageN2



Shaoshan West Road construction pointN3

Monitoring results and evaluation:

Table 10Noise monitoring results and evaluation standards during construction period

Monitoring time	Monitoring point				Equivalent continuous A	
					Day	Night
2019.07.04	N1Xiazhou Village				48.9	41.2
	N2Chunqian Village				48.0	41.7
2019.08.19	N1Xiazhou Village				54.0	44.2
	N2Chunqian Village				53.4	43.0
2019.09.03	N1Xiazhou Village				48.1	38.3
	N2Chunqian Village				48.5	39.3
2019.10.15	N1Xiazhou Village				57.5	43.2
	N2Chunqian Village				58.1	43.6
2019.11.04	N1Xiazhou Village				50.0	45.4
	N2Chunqian Village				50.1	45.7
2019.12.11	N1Xiazhou Village				57.5	38.7
	N2Chunqian Village				55.2	42.4
Evaluation standard（Class 2 area standard）					60	50
2019.07.04	N3	Shaoshan	West	Road	56.3	48.2
2019.08.19	N3	Shaoshan	West	Road	51.7	46.6
2019.09.03	N3	Shaoshan	West	Road	50.8	43.0
2019.10.15	N3	Shaoshan	West	Road	56.8	42.7

Monitoring time	Monitoring point				Equivalent continuous A	
					Day	Night
2019.11.04	N3	Shaoshan	West	Road	60.7	45.9
2019.12.11	N3	Shaoshan	West	Road	62.3	47.5
Evaluation standard (Environmental Noise Emission Standards for Construction Sites)					70	55

ADB loan Jiangxi Ji'an Urban Transport Project Shaoshan West Road During the construction period from July to December 2019, all construction sites are in line with the "Environmental Noise Emission Standard for Construction Site Boundary" (GB12523-2011), and the indicators measured by various sensitive points. All of them meet the Class 2 standard of the Acoustic Environmental Quality Standard (GB3096-2008), indicating that the construction of Shaoshan West Road has less impact on the surrounding environment.

3.2.3 Surface water monitoring

The construction section of the Lushan West Road mainly spans the water body as the Yudai River. During the period from July to December 2019 the water quality of the Yudai River is monitored once a month. Monitoring point :SW1 50m above water body、SW2 100m downstream of the water body

Monitoring project : pH value、Suspendedmatter、COD、Ammonianitrogen、Petro、Fecal coliforms



50m above water bodySW1



100m downstream of the water bodySW2

Monitoring results and evaluation:

Table 11 Surface Water Quality Monitoring and Evaluation Standards in Yudai River
Unit: mg/L(pH value without dimension)

Monitoring time	Monitoring point	Monitoring project					
		pH Value	SS	CO D	Ammonia nitrogen	Petro	Fecal coliforms (units/L)
2019.01.08	50m above water body SW1	7.04	11	13	1.5	0.03	150
	100m downstream of the water body SW2	7.09	14	12	1.51	0.03	480
2019.8.20	50m above water body SW1	7.1	6	13	0.580	0.03	110
	100m downstream of the water body SW2	7.2	67	14	0.860	0.02	30
2019.09.03	50m above water body SW1	7.50	10	10	0.216	0.01	2200
	100m downstream of the water body SW2	7.24	11	10	0.199	0.01	2200
2019.10.17	50m above water body SW1	7.4	8	11	0.318	0.01	130
	100m downstream of the water body SW2	7.4	9	11	0.365	0.01	120
2019.11.05	50m above water body SW1	7.4	10	12	0.369	0.02	170
	100m downstream of the water body SW2	7.8	9	12	0.369	0.02	70
2019.12.11	50m above water body SW1	7.79	8	12	0.330	0.01	40
	100m downstream of the water body SW2	7.78	10	12	0.229	0.01	50
Evaluation Standard (Class III)		6-9	≤80	≤20	≤1.0	≤0.05	≤10000

During the construction period of Yanshan West Road from July to December 2019, the surface water quality of the Yudai River remained stable, and the measured indicators all met the Class III water standard of “Surface Water Environmental Quality” (GB3838-2002). It shows that the construction activities of the West Shanxi Road have little impact on the water quality of the Yudai River.

3.5 Bo'an Road Environmental Monitoring During Construction Period

3.4.1 Ambient air monitoring

From July to December 2019, due to the long construction scope of Bo'an Road, the construction was mainly concentrated near Jiangbian Village and Luotangtou. Therefore, two environmental quality monitoring points were set up for environmental monitoring.

Monitoring point: A1 Jiangbian Village、A2 Dongjietang

Monitoring project: PM₁₀



Jiangbian Village A1



Dongjietang A2

Monitoring results and evaluation:

Table 12 Air Quality Environmental Monitoring Results and Evaluation

Standards During Construction Period

Monitoring time	Monitoring point	Monitoring project
		PM ₁₀ (mg/m ³)
2019.07.03	A1 Jiangbian Village	0.040
	A2 Dongjietang	0.045
2019.08.19	A1 Jiangbian Village	0.047
	A2 Dongjietang	0.017
2019.10.17	A1 Jiangbian Village	0.064
	A2 Dongjietang	0.068

Ambient Air Quality Standard (GB3095-2012) (secondary standard)	0.15
--------------------------------------------------------------------	------

During the construction period from July to December 2019, Bo'an Road, Ji'an Urban Transport Project, Jiangxi Province, the PM10 concentration measured by Jiangbian Village and Luotangtou sensitive points met the Class II standard of Ambient Air Quality Standard (GB3095-2012). This indicates that the construction of Bo'an Road has less impact on the surrounding environment.

3.4.2 Environmental noise monitoring

From July to December 2019, this external environmental monitoring conducted an on-site monitoring of sensitive points and construction sites along the Bo'an Road every month. During the monitoring period, this noise monitoring set a noise monitoring point at the construction point near Jiangbian Village.

Monitoring point: N1 Luogang Village 、 N2 Jiangbian village 、 N3 Chengshangvillage 、 N4 Maobeivillage 、 N5 Dongjietangvillage 、 N6 Luotangtouvillage 、 N7 Bo'an Road construction point.

Monitoring project: Equivalent continuous A sound level.



Luogang Village N1



Jiangbian village N2



ChengshangvillageN3



MaobeivillageN4



DongjietangN5



LuotangtouvillageN6



Bo'an Road construction pointN7

Monitoring results and evaluation:

Table 13 Noise monitoring results and evaluation standards during construction period

Monitoring time	Monitoring point	Equivalent continuous A sound level (dB)	
		Day	Night
2019.07.04	N1Luogang Village	47.9	43.3
	N2Jiangbian village	49.6	43.3
	N3 Chengshangvillage	47.3	42.8
	N4 Maobeivillage	47.8	41.6
	N5 Dongjietangvillage	48.4	42.3
	N6 Luotangtouvillage	49.2	42.1
2019.08.19	N1Luogang Village	53.0	47.1
	N2Jiangbian village	52.7	43.6
	N3 Chengshangvillage	52.6	46.8
	N4 Maobeivillage	55.8	47.3
	N5 Dongjietangvillage	55.0	43.5
	N6 Luotangtouvillage	56.0	44.8
2019.09.02	N1Luogang Village	51.1	44.3
	N2Jiangbian village	47.4	43.6
	N3 Chengshangvillage	48.2	46.1
	N4 Maobeivillage	48.4	38.3
	N5 Dongjietangvillage	48.1	41.7
	N6 Luotangtouvillage	55.3	43.6
2019.10.16	N1Luogang Village	55.6	46.7
	N2Jiangbian village	57.5	44.0
	N3 Chengshangvillage	58.8	45.0
	N4 Maobeivillage	51.4	46.2
	N5 Dongjietangvillage	51.9	47.8
	N6 Luotangtouvillage	51.1	44.3
2019.11.04	N1Luogang Village	49.0	46.3
	N2Jiangbian village	51.0	42.5
	N3 Chengshangvillage	52.1	44.9
	N4 Maobeivillage	52.3	45.0
	N5 Dongjietangvillage	52.9	43.7
	N6 Luotangtouvillage	51.7	44.6
2019.12.11	N1Luogang Village	56.7	39.9
	N2Jiangbian village	59.3	43.4
	N3 Chengshangvillage	57.8	48.1
	N4 Maobeivillage	57.0	39.4
	N5 Dongjietangvillage	53.9	41.6
	N6 Luotangtouvillage	56.5	40.9
Evaluation standard (Class 2 area standard)		60	50
2019.07.04	N7 Bo'an Road construction point	57.4	46.8
2019.08.19	N7 Bo'an Road construction point	56.2	44.0
2019.09.02	N7 Bo'an Road construction point	49.7	46.7
2019.10.16	N7 Bo'an Road construction point	57.4	44.4
2019.11.04	N7 Bo'an Road construction point	58.2	44.1

2019.12.11	N7 Bo'an Road construction point	59.1	46.9
Evaluation standard (Environmental Noise Emission Standards for Construction Sites)		70	55

ADB loan Jiangxi Ji'an Urban Transport Project, Bo'an Road

During the construction period from July to December 2019, all construction sites are in line with the "Environmental Noise Emission Standard for Construction Site Boundary" (GB12523-2011), and the indicators measured by various sensitive points. All of them meet the Class 2 standard of the Acoustic Environmental Quality Standard (GB3096-2008), indicating that the construction of Bo'an Road has less impact on the surrounding environment.

3.2.3 Surface water monitoring

The construction section of Bo'an Road mainly spans the water body as the Yudai River. From July to December 2019, this external environmental monitoring conducts a monthly monitoring of the water quality of the Yudai River.

Monitoring point :SW1 50m above water body、SW2 100m downstream of the water body

Monitoring project : pH value、Suspendedmatter、COD、Ammonianitrogen、Petro、Fecal coliforms



50m above water body **SW1**

100m downstream of the water body **SW2**

Monitoring results and evaluation:

Table 14 Surface Water Quality Monitoring and Evaluation Standards in Yudai River
Unit: mg/L (pH value without dimension)

Monitoring time	Monitoring point	Monitoring project					
		pH Value	SS	COD	Ammonia nitrogen	Petro	Fecal coliforms (units/L)
2019.07.04	50m above water body SW1	7.12	12	10		0.02	240
	100m downstream of the water body SW2	7.18	13	12		0.03	1500
2019.8.20	50m above water body SW1	7.2	6	12	0.433	0.02	3400
	100m downstream of the water body SW2	7.3	14	13	0.874	0.02	920
2019.09.03	50m above water body SW1	7.37	12	12	0.121	0.01	260
	100m downstream of the water body SW2	7.40	10	13	0.174	0.01	510
2019.10.17	50m above water body SW1	7.0	11	11	0.327	0.01	2800
	100m downstream of the water body SW2	8.0	24	16	0.767	0.01	1600
2019.11.05	50m above water body SW1	8.5	11	10	0.339	0.01	50
	100m downstream of the water body SW2	8.2	10	14	0.365	0.02	60
2019.12.11	50m above water body SW1	7.83	8	13	0.336	0.01L	70
	100m downstream of the water body SW2	7.83	8	12	0.388	0.01L	100
Evaluation Standard (Class III)		6-9	≤80	≤20	≤1.0	≤0.05	≤10000

During the construction period of Bo'an Avenue from July to December 2019, the surface water quality of the Yudai River remained stable, and the measured indicators all met the Class III water of Surface Water Environmental Quality (GB3838-2002) standard. It shows that the construction activities of Bo'an Avenue have little impact on the water quality of Yudai River.

3.5 Monitoring of dredged soil environment during construction

During the reconstruction of the Yudai River, it is necessary to monitor the sludge generated during the dredging of the Yudai River. The fish ponds near the road may need to monitor their silt. Silt is monitored.

From July to December 2019, the monitoring set two monitoring points for the Yudai River and the fish pond. The monitoring points changed with the dredging position.

Monitoring items: pH, zinc, chromium, arsenic, cadmium, chromium (hexavalent), copper, lead, mercury, nickel, carbon tetrachloride, chloroform, methyl chloride, 1,1-dichloroethane, 1,2-dichloroethyl Alkane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, dichloromethane, 1,2-dichloropropane, 1,1,1,2-Tetrachloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, 1, 2,3-trichloropropane, vinyl chloride, benzene, chlorobenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, ethylbenzene, styrene, toluene, m-xylene + p-xylene, o-xylene Toluene, nitrobenzene, aniline, 2-chlorophenol, benzo [a] anthracene, benzo [a] pyrene, benzo [b] fluoranthene, benzo [k] fluoranthene, pyrene, dibenzo [a , h] anthracene, indeno [1,2,3-cd] fluorene, naphthalene.

Table 15 Monitoring results and evaluation standards of sludge Unit: mg / kg (pH dimensionless)

Monitoring project / time / place	2019.09.03		2019.10.17		2019.11.05		2019.12.11		Evaluation standard
	S1 Dredging of Yudaihe	S2 Fish pond of Qingyuan Bus Station	S1 Dredging of Yudaihe	S2 Fish pond of Qingyuan Bus Station	S1 Dredging of Yudaihe	S2Fish pond	S1 Dredging of Yudaihe	S2 Fish pond of Qingyuan Bus Station	
pH	7.7	6.6	8.2	7.6	8.2	6.5	8.2	6.7	/
Zinc	54	79	70	123	50	124	40	64	250
Chromium	9	4	40	42	81	100	95	41	150
Arsenic	12.5	19.2	8.91	11.9	8.30	16.9	13.4	7.96	25
Cadmium	0.04	0.06	0.08	0.06	0.33	0.34	0.18	0.11	1.0
Copper	20	23	19	24	16	30	34	27	50
Lead	22.4	43.4	29.6	39.7	19.2	40.6	20.6	43.8	90
Hg	0.092	0.167	0.148	0.122	0.074	0.107	0.024	0.068	1.8
Nickel	14	18	28	36	17	22	36	16	70

Note: The evaluation criteria are based on the strictest standards in each pH range.

Table16 Monitoring results and evaluation standards of sludge Unit: mg / kg (pH dimensionless)

Monitoring project/time / place	2019-09-03		2019-10-17		2019-11-05		2019.12.11		Evaluation standard
	S1 Dredging of Yudaihe	S2 Fish pond of Qingyuan Bus Station	S1 Dredging of Yudaihe	S2 Fish pond of Qingyuan Bus Station	S1 Dredging of Yudaihe	S2 Fish pond of Qingyuan Bus Station	S1 Dredging of Yudaihe	S2 Fish pond of Qingyuan Bus Station	
Arsenic	12.5	19.2	8.91	11.9	8.30	16.9	13.4	7.96	60
Cadmium	0.04	0.06	0.08	0.06	0.33	0.34	0.18	0.11	65
Chromium (hexavalent)	2 _L	2 _L	2 _L	2 _L	2 _L	2 _L	2 _L	2 _L	5.7
Copper	20	23	19	24	16	30	34	27	18000
Lead	22.4	43.4	29.6	39.7	19.2	40.6	20.6	43.8	800
Hg	0.092	0.167	0.148	0.122	0.074	0.107	0.024	0.068	38
Nickel	14	18	28	36	17	22	36	16	90
Carbon tetrachloride	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	2.8
Chloroform	1.1 _L	1.6	1.1 _L	1.1 _L	1.1 _L	1.1 _L	1.1 _L	1.1 _L	0.9
Methyl chloride	1.0 _L	1.0 _L	1.0 _L	1.0 _L	1.0 _L	1.0 _L	1.0 _L	1.0 _L	37
1,1-dichloroethane	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	9
1,2-dichloroethane	1.2 _L	1.2 _L	1.3 _L	1.3 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	5
1,1-dichloroethylene	1.0 _L	1.0 _L	1.0 _L	1.0 _L	1.0 _L	1.0 _L	1.0 _L	1.0 _L	66

Cis-1,2-dichloroethylene	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	596
Trans-1,2-dichloroethylene	1.4 _L	1.4 _L	1.4 _L	1.4 _L	1.4 _L	1.4 _L	1.4 _L	1.4 _L	54
Dichloromethane	1.5 _L	1.5 _L	1.5 _L	1.5 _L	1.5 _L	1.5 _L	1.5 _L	1.5 _L	616
1,2-dichloropropane	1.1 _L	1.1 _L	1.1 _L	1.1 _L	1.1 _L	1.1 _L	1.1 _L	1.1 _L	5
1,1,1,2-tetrachloroethane	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	10
1,1,2,2-tetrachloroethane	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	6.8
Tetrachloroethylene	1.4 _L	1.4 _L	1.4 _L	1.4 _L	1.4 _L	1.4 _L	1.4 _L	1.4 _L	53
1,1,1-trichloroethane	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	840
1,1,2-trichloroethane	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	2.8
Trichloroethylene	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	2.8
1,2,3-trichloropropane	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	0.5
Vinyl chloride	1.0 _L	1.0 _L	1.0 _L	1.0 _L	1.0 _L	1.0 _L	1.0 _L	1.0 _L	0.43
Benzene	1.9 _L	1.9 _L	1.9 _L	1.9 _L	1.9 _L	1.9 _L	1.9 _L	1.9 _L	4
Chlorobenzene	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	270
1,2-dichlorobenzene	1.5 _L	1.5 _L	1.5 _L	1.5 _L	1.5 _L	1.5 _L	1.5 _L	1.5 _L	560
1,4-dichlorobenzene	1.5 _L	1.5 _L	1.5 _L	1.5 _L	1.5 _L	1.5 _L	1.5 _L	1.5 _L	20
Ethylbenzene	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	28
Styrene	1.1 _L	1.1 _L	1.1 _L	1.1 _L	1.1 _L	1.1 _L	1.1 _L	1.1 _L	1290
Toluene	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1.3 _L	1200
M-xylene + p-xylene	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	570

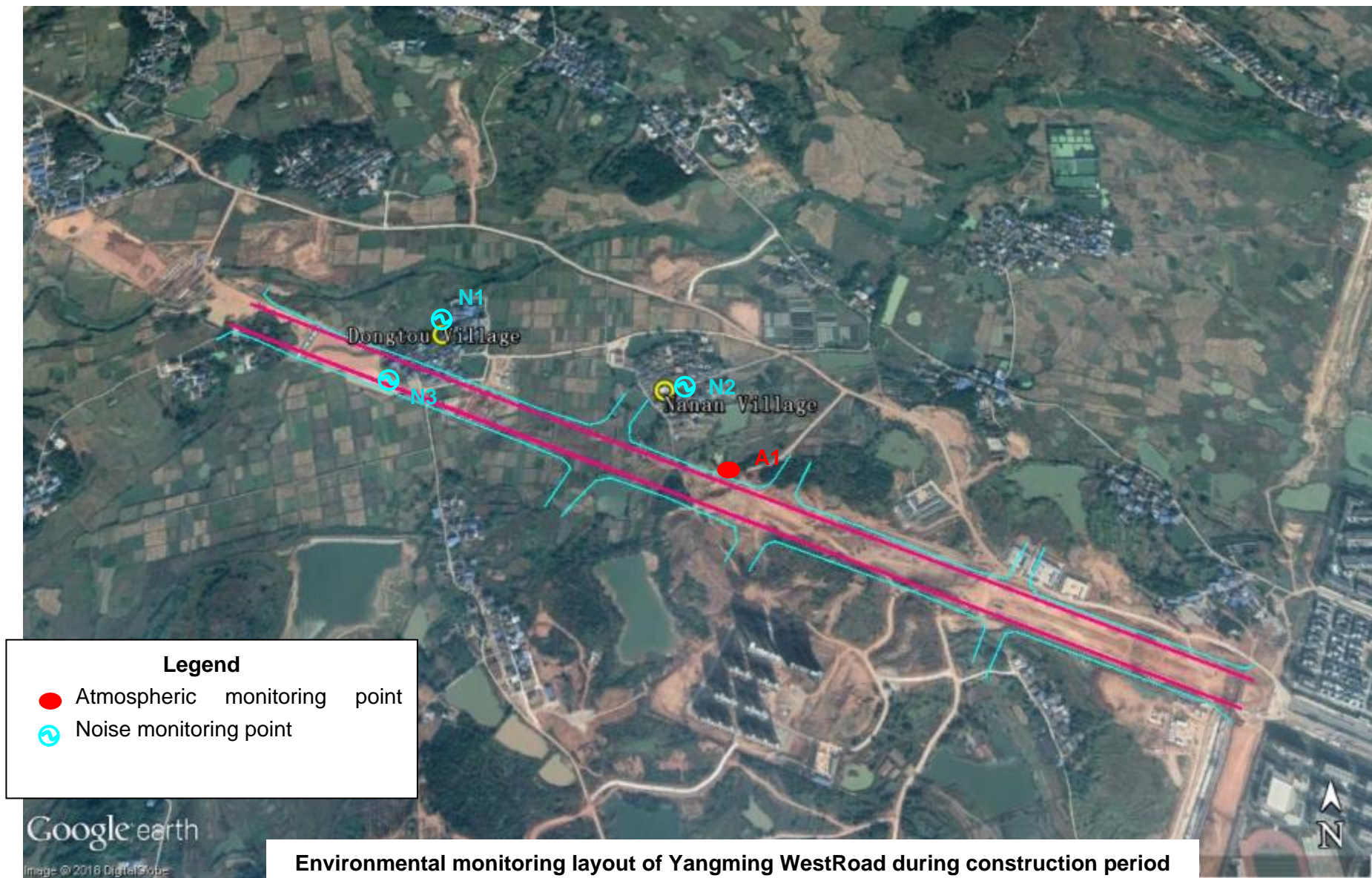
O-xylene	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	1.2 _L	640
Nitrobenzene	0.09 _L	0.09 _L	0.09 _L	0.09 _L	0.09 _L	0.09 _L	0.09 _L	0.09 _L	76
Aniline	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	260
2-chlorophenol	0.06 _L	0.06 _L	0.06 _L	0.06 _L	0.06 _L	0.06 _L	0.06 _L	0.06 _L	2256
Benzo [a] anthracene	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	15
Benzo [a] pyrene	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	1.5
Benzo [b] fluoranthene	0.2 _L	0.2 _L	0.2 _L	0.2 _L	0.2 _L	0.2 _L	0.2 _L	0.2 _L	15
Benzo [k] fluoranthene	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	151
Chrysene	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	1293
Dibenzo [a, h] anthracene	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	1.5
Indeno [1,2,3-cd] pyrene	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	0.1 _L	15
Naphthalene	0.09 _L	0.09 _L	0.09 _L	0.09 _L	0.09 _L	0.09 _L	0.09 _L	0.09 _L	70

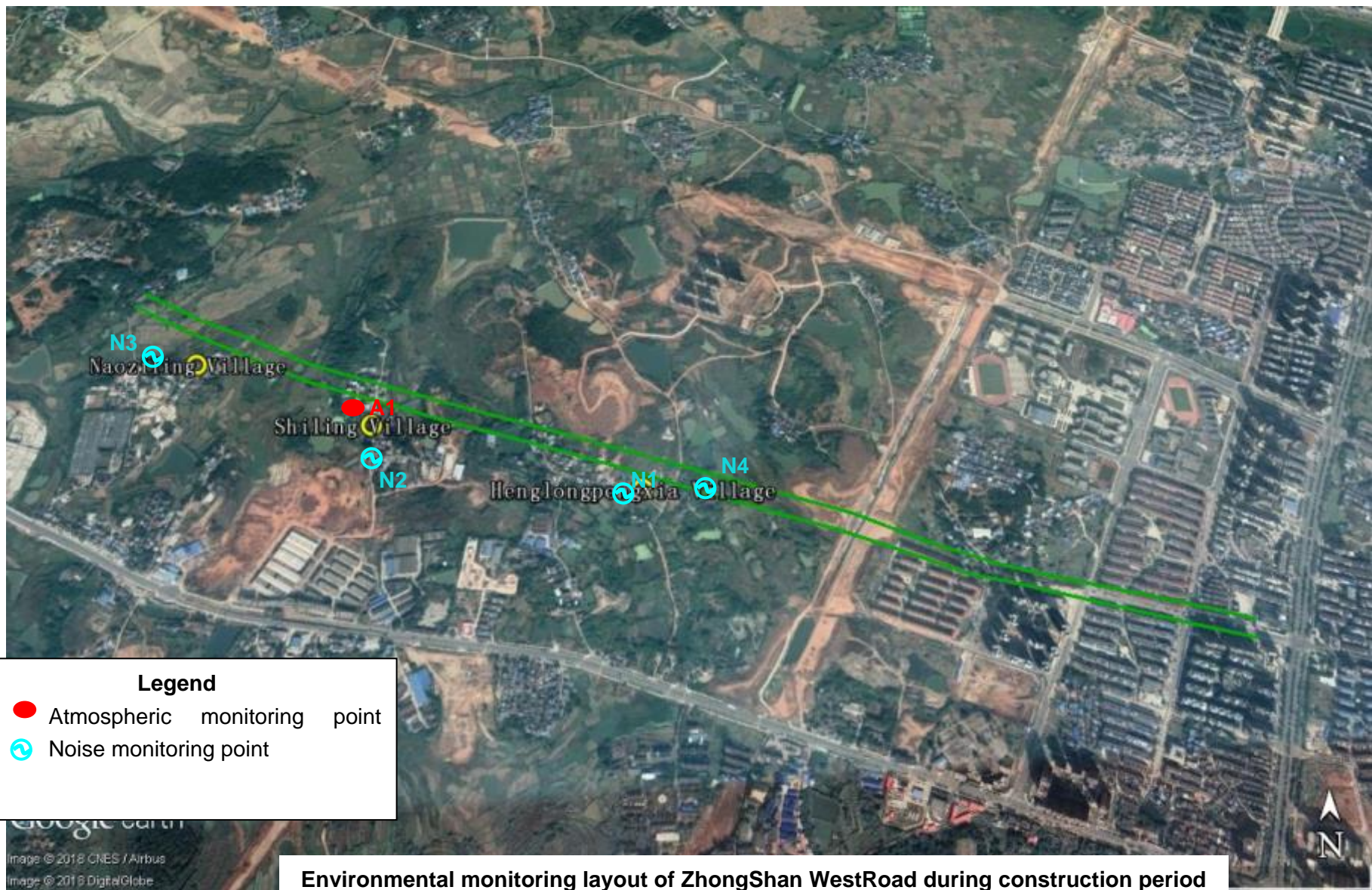
Note: L means not detected

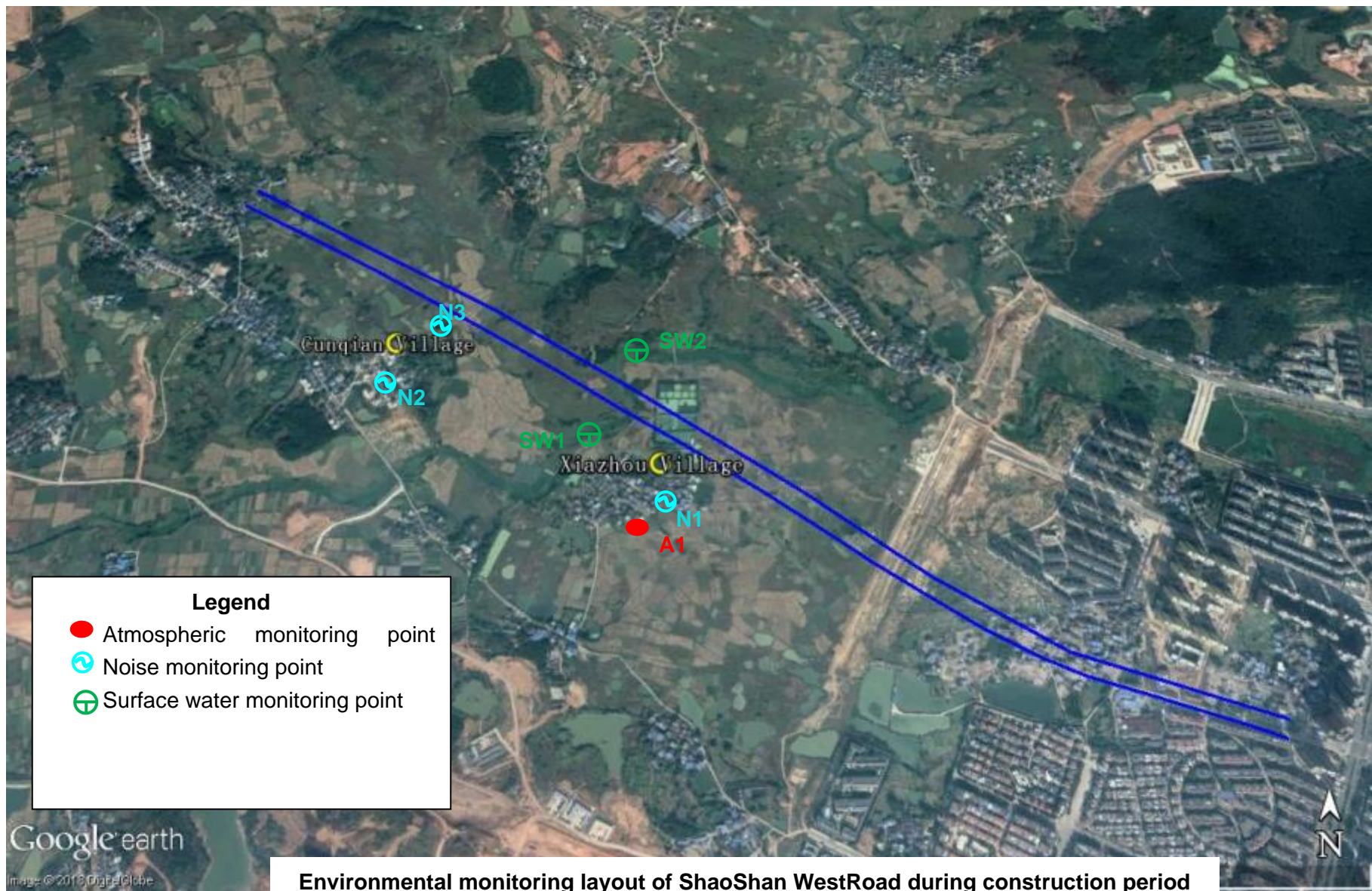
During the construction period from July to December 2019, the dredging sludge of the Yudai River and the fish pond can meet the Soil Environmental Quality Standards for Agricultural Land Soil Pollution Risk Control (Trial) (GB15618- 2018) Table 1 Risk screening value standards and "Soil Environmental Quality Standards Soil pollution risk management and control standards for construction land (Trial)" (GB36600-2018) Table 1 Risk screening value Category 2 land use standard requirements.

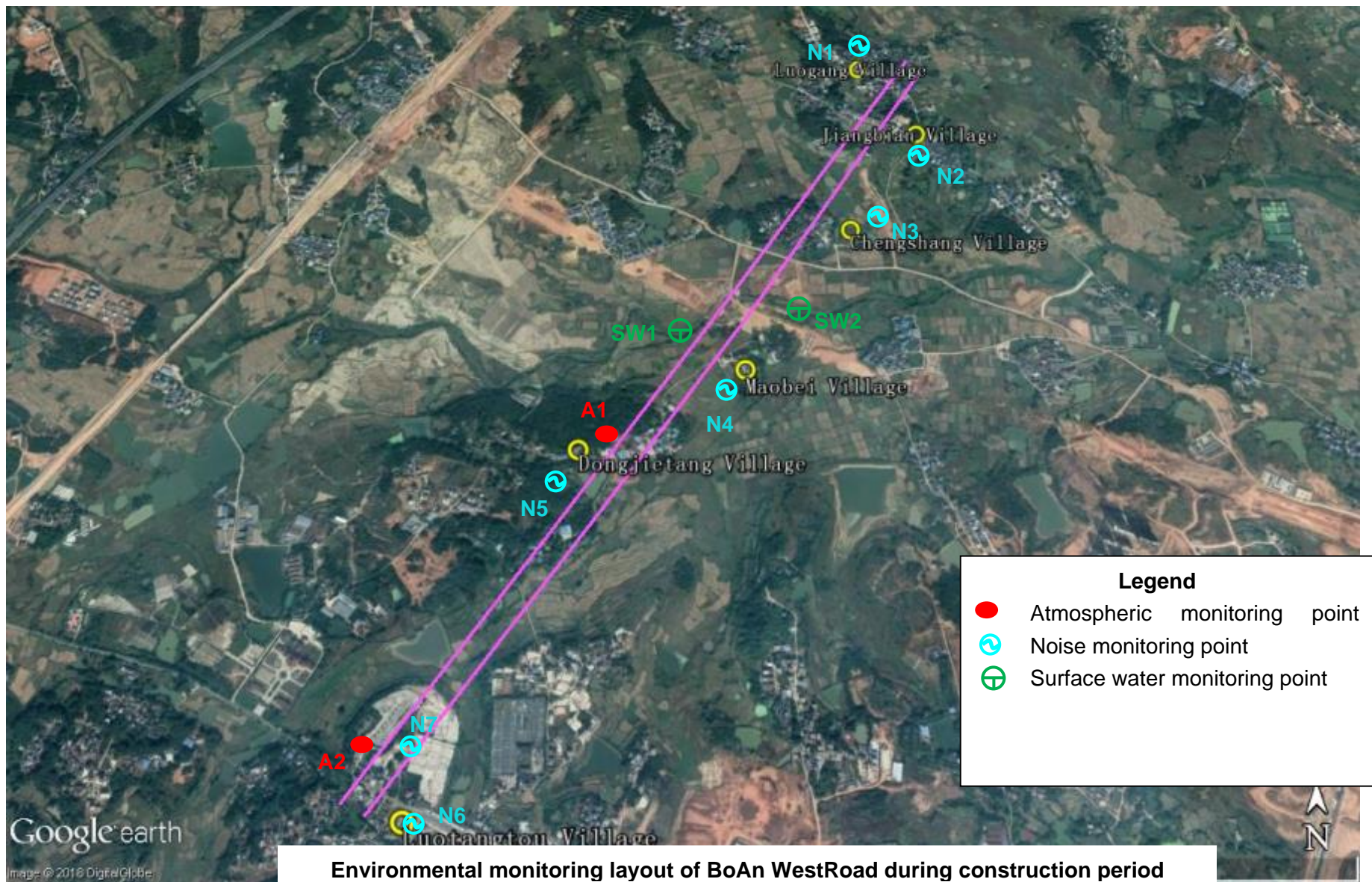














4 Monitoring Evaluation and Recommendations

Through environmental monitoring during construction period, environmental noise of each site is in line with the "Environmental Noise Emission Standard for Construction Sites" (GB12523-2011), atmospheric environment of all sensitive points meets the secondary standards of the "Ambient Air Quality Standard" (GB3095-1996), the acoustic environment of each sensitive points meets the Class 2 area standard of "Acoustic Environmental Quality Standard" (GB3096-2008), the water quality of the Yudaihe River meets Class III water standards of "Environment Quality of Surface Water" (GB3838-2002). The dredged sludge can meet the risk screening value standards in Table 1 of "Soil Environmental Quality Standards for Agricultural Land Soil Pollution Risk Control (Trial)" (GB15618-2018) and "Soil Environmental Quality Standards for Soil Pollution Risk Control Standards for Construction Land (Trial)" (GB36600-2018) Table 1 Risk screening value of the second type of land standard requirements. According to the monitoring, the construction activities of this project have little impact on the surrounding environment.

To avoid the environmental impact caused by the construction process, we suggest that the construction units should strictly strengthen the construction management and strengthen the quality education of the construction workers. Spray water at construction sites to suppress dust, timely cover construction waste, and establish spoil grounds. Ensure that all pollution prevention and control measures during the construction period of the construction project are in place to ensure that the environmental impact caused by the construction process will be the lowest.

Appendix 3 Internal environmental monitoring results

现场环境检查清单 ENVIRONMENTAL SITE INSPECTION CHECKLIST

施工单位环境管理人员和施工现场环境监理员填的环境核查表

亚行贷款（2260-PRC）江西吉安城市交通项目

parts of internal environmental monitoring results (as the example)

注意：本表格专为项目实施单位环境监督员现场工作设计，可能并不详尽。个别子项目可能需要修改和补充，以解决具体的环境问题，确保环境减缓措施得以实施。

子项名称Sub-Project Name: 如江西吉安城市交通项目伯安大道（吉福路-韶山西路）工程伯安大道Urban Roads-Bo'an Road (Jifu Road-Shaoshan West Road), 3.15 km

江西中煤 Jiangxi Zhongmei Construction Group Co., Ltd.

现场位置Site Location: 江西省吉安市高铁新区JianGaoti station

施工分阶段Construction stage: 土石方工程，排水工程施工Earthwork and Stone Works, Drainage Works Construction

检查日期Inspection Date: 2019年12月

检查人 Inspected by: Liu Yang 刘洋

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
现场环境管理计划、申述机制和信息披露 Site EMP, GRM, information disclosure				
1. 工程承包商是否指定了环境监管员？ 该环境监管员在现场吗？ Has contractor appointed an environment supervisor and is the supervisor on-site?	✓			
2. 工程承包商制定现场环境管理计划了吗？	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
Is Site EMP established?				
3. 与施工有关的信息在现场公布了吗 （包括工期、承包商信息等）？ Is information pertaining to construction disclosed at construction site (including construction period, contractor information, etc)?	✓			
4. 申诉机制在现场公布了吗？ Is Grievance Redress Mechanism (GRM) disclosed at construction site?	✓			
土壤侵蚀和污染 Soil erosion and contamination				
5. 承包商制定了土壤侵蚀管理计划吗？ Has the contractor prepared a soil erosion management plan?			✓	
6. 是否建有防止径流进入施工现场及将 现场径流引至现有排水设施的截水沟 和排水沟？ Are intercepting ditches and drains constructed to prevent runoff entering construction sites, and divert runoff from sites to existing drainage?			✓	
7. 受干扰的地区在土方工程停止后是否 稳定？植被是否恢复？ Are disturbed areas stabilized after earthworks have ceased, and re-vegetated?			✓	

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
8. 化学品、危险物品和废弃物是否存放在防渗透的安全地带？是否有覆盖？ Are chemicals/hazardous products and waste stored on impermeable surfaces in secure, covered areas?			✓	
9. 是否有漏油迹象？ Is there evidence of oil spillage?			✓	
10. 是否准备了堵漏工具、堵漏沙或锯屑吸收泄露的化学物质？ Are spill kits / sand / saw dust used for absorbing chemical spillage readily accessible?			✓	
11. 化学品是否妥善存放并标识？ 11. Are chemicals stored and labelled properly?			✓	
空气质量控制 Air quality control				
12. 施工现场定期洒水吗？ Are construction sites regularly watered?	✓			
13. 易产生灰尘的建筑材料是否有遮盖或洒水？水泥袋解袋过程是否是在有遮蔽的地方进行？	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
Are stockpiles of dusty materials covered or watered and cement debagging process undertaken in sheltered areas?				
14. 运送土石、沙料的卡车是否有油布或其它遮盖物覆盖避免溢出？ Are trucks carrying earth, sand or stone covered with tarps or other suitable cover to avoid spilling?	✓			
15. 设备是否得到良好的维护？（是否观察到黑烟，如果有，请说明设备的名称和位置） Are plant and equipment well maintained? (any black smoke observed, please indicate the plant/equipment and location)	✓			
16. 产生扬尘的主要施工活动是否有围栏？ Are there enclosures around the main dust-generating activities?	✓			
17. 承包商是否定期与项目实施单位、村庄社区及附近的居民交流，了解是否对空气质量是否有任何不满？ Does contractor regularly consult with PIU, TVET administration, students as well as nearby residents to identify concerns?	✓			
18. 上一次检查后是否进行过空气质量监测？如果有，请列明监测结果；如果没有，请标明下一次监测时间。	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
Was air quality monitoring conducted since the last inspection? If yes, present results. If no, indicate date of next monitoring campaign.				
噪音 Noise				
19. 是否有噪音超标的迹象？如果有，请说明噪音产生的地点和设备。 Is there evidence of excessive noise? If yes, describe location and equipment.		✓		
20. 承包商是否对设备进行定期检修，保证遵守 GB 12523-90? Does the contractor undertake regular equipment maintenance, ensure compliance with PRC standard of GB 12523-90	✓			
21. 混凝土搅拌等类似施工活动是否距离敏感区至少 300 米？ Are sites for concrete-mixing and similar activities located at least 300 m from sensitive areas?	✓			
22. 施工噪声许可在限制时段是否有效？ Is the CNP (Construction Noise Permit) valid for work during restricted hours?	✓			
23. 空气压缩机和电机运行时房门是否关闭？	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
Do air compressors and generators operate with doors closed?				
24. 不用的设备是否关闭或将油门调小，降低速度？ Is idle plant/equipment turned off or throttled down?	✓			
25. 是否采取了任何能够减弱噪音的活动（如隔音罩、屏障等）？ adopted (e.g. use noise barrier / enclosure)?	✓			
26. 上一次检查后是否进行过噪声监测？如果有，请列明监测结果；如果没有，请标明下一次监测时间。 Was noise monitoring conducted since the last inspection? If yes, present results. If no, indicate date of next monitoring campaign.	✓			
27. 承包商是否定期与项目实施单位、学校学生及附近的居民交流，了解是否对声环境是否有任何不满？ 27. Does contractor regularly consult with PIU, TVET administration, students as well as nearby residents to identify concerns related to noise?	✓			
地表水污染 Surface water pollution				
28. 承包商是否制定了汽油和其它危险物质临时管理计划（泄露管理计划）？	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
Did the contractor develop a contingency plan for control of oil and other dangerous substances (Spill Management Plan)?				
29. 现在污水处理设施（沉砂池）维护是否得当？ Are wastewater treatment systems being used and properly maintained on site? (e.g. desilting tank)			✓	
30. 施工废水和施工现场的生活污水是否排入污水管网或现场处理设施以确保达标排放？ Is construction wastewater and domestic wastewater discharged to sewer systems (if possible), or are on-site treatment facilities provided to ensure compliance with effluent discharge standard?			✓	
31. 是否有污水排入到雨水管？ Are there any wastewater discharged to the storm drains?		✓		
固体废弃物管理 Solid waste management				
32. 现场是否整洁？（是否有垃圾、清扫是否及时） Is the site kept clean and tidy? (e.g. litter free, good housekeeping)	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
33. 腐蚀性和非腐蚀性废弃物是否分开？ Are separate chutes used for inert and non-inert wastes?	✓			
34. 垃圾是否分类存放以促进回收利用？ Are separated labeled containers/ areas provided for facilitating recycling and waste segregation?	✓			
35. 建筑垃圾、可循环利用的废弃物及一般垃圾是否定期清运？ 35. Are construction wastes / recyclable wastes and general refuse removed off site regularly?	✓			
36. 化学品废弃物（如果有）是否由有资质的单位收集并妥善处置？ Are chemical wastes, if any, collected and disposed of properly by licensed collectors?			✓	
健康和安全 Health and safety				
37. 承包商是否制定并提交环境、健康和安全管理计划？ Did the contractor prepare and submit an Environmental, Health and Safety Management Plan (HSMP)?	✓			
38. 现场是否提供了安全的洁净水？是否为工人提供了足够的厕所？	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
Is safe supply of clean water and an adequate number of latrines provided for workers?				
39. 施工现场是否有垃圾收集设施？ Are garbage receptacles provided at construction site?	✓			
40. 是否按照健康和安全管理规定向工人提供了个人防护设备？ Is personal protection equipment (PPE) provided for workers in accordance with relevant health and safety regulations?	✓			
41. 承包商是否制定事故和紧急事件的应急响应预案？ Does the contractor have emergency response plan to take actions on accidents and emergencies?	✓			
42. 在施工现场粘贴明显的标识，提醒师生和公众可能出现的危险，如车辆、有害物质、开挖等，提高安全意识； Are clear signs placed at construction sites in view of the TVET students and staff as well as the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc, and raising awareness on safety issues?	✓			
43. 是否有围栏等措施保证施工现场的安全，防止随意进出？	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
Are all construction sites made secure, discouraging access through appropriate fencing?				
44. 是否采取了交通管理措施（限速、限 行等）？ Are traffic control measures (speed control, access control) applied?	✓			
45. 灭火器、消防设施是否维护并在有效 期内？消防通道是否被阻断或堵塞？ Are fire extinguishers / fighting facilities properly maintained and not expired? Escape not blocked / obstructed?	✓			
植被 Vegetation				
46. 无施工活动的地区是否有过度破坏植 被的迹象？ Is there any evidence of excessive destruction of existing vegetation where no construction activity is occurring?		✓		
47. 土建工程完工后是否恢复受干扰区的 植被？ 47. Are disturbed areas properly re-vegetate after completion of civil works?			✓	
文物古迹 Physical cultural resources				

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
48. 是否有可能发现文物古迹？如果有， 确保采取合理的措施保护文物古迹。 Are they any chance found relics? If yes, ensure appropriate measures taken to preserve them.			✓	
其它 Others				
49. 其它问题或意见 Any other problems identified or observations made?		✓		

Date, Name and Signature of Site Inspector

Supervised by

刘洋Liu Yang

现场检查人员签字、日期2019年12月

子项名称Sub-Project Name: 如江西吉安城市交通项目伯安大道（吉福路-韶山西路）

工程伯安大道Urban Roads-Bo'an Road (Jifu Road-Shaoshan West Road), 3.15 km
江西中煤 Jiangxi Zhongmei Construction Group Co., Ltd.

现场位置Site Location: 江西省吉安市高铁新区JianGaoti station

施工分阶段Construction stage: 土石方工程, 排水工程施工Earthwork and Stone Works, Drainage Works Construction

检查日期Inspection Date: 2019年7月

December, 2018

检查人 Inspected by: Liu Zifei 刘子菲

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
现场环境管理计划、申述机制和信息披露 Site EMP, GRM, information disclosure				
50. 工程承包商是否指定了环境监管员？ 该环境监管员在现场吗？ Has contractor appointed an environment supervisor and is the supervisor on-site?	✓			
51. 工程承包商制定现场环境管理计划了 吗？ Is Site EMP established?	✓			
52. 与施工有关的信息在现场公布了吗 （包括工期、承包商信息等）？ Is information pertaining to construction disclosed at construction site (including construction period, contractor information, etc)?	✓			
53. 申诉机制在现场公布了吗？ Is Grievance Redress Mechanism (GRM) disclosed at construction site?	✓			
土壤侵蚀和污染 Soil erosion and contamination				
54. 承包商制定了土壤侵蚀管理计划吗？ Has the contractor prepared a soil erosion management plan?			✓	

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
55. 是否建有防止径流进入施工现场及将 现场径流引至现有排水设施的截水沟 和排水沟？ Are intercepting ditches and drains constructed to prevent runoff entering construction sites, and divert runoff from sites to existing drainage?			✓	
56. 受干扰的地区在土方工程停止后是否 稳定？植被是否恢复？ Are disturbed areas stabilized after earthworks have ceased, and re-vegetated?			✓	
57. 化学品、危险物品和废弃物是否存放 在防渗透的安全地带？是否有覆盖？ Are chemicals/hazardous products and waste stored on impermeable surfaces in secure, covered areas?			✓	
58. 是否有漏油迹象？ Is there evidence of oil spillage?			✓	
59. 是否准备了堵漏工具、堵漏沙或锯屑 吸收泄露的化学物质？ Are spill kits / sand / saw dust used for absorbing chemical spillage readily accessible?			✓	
60. 化学品是否妥善存放并标识？ 11. Are chemicals stored and labelled properly?			✓	
空气质量控制 Air quality control				
61. 施工现场定期洒水吗？ Are construction sites regularly watered?	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
62. 易产生灰尘的建筑材料是否有遮盖或洒水？水泥袋解袋过程是否是在有遮蔽的地方进行？ Are stockpiles of dusty materials covered or watered and cement debagging process undertaken in sheltered areas?	✓			
63. 运送土石、沙料的卡车是否有油布或其它遮盖物覆盖避免溢出？ Are trucks carrying earth, sand or stone covered with tarps or other suitable cover to avoid spilling?	✓			
64. 设备是否得到良好的维护？（是否观察到黑烟，如果有，请说明设备的名称和位置） Are plant and equipment well maintained? (any black smoke observed, please indicate the plant/equipment and location)	✓			
65. 产生扬尘的主要施工活动是否有围栏？ Are there enclosures around the main dust-generating activities?	✓			
66. 承包商是否定期与项目实施单位、村庄社区及附近的居民交流，了解是否对空气质量是否有任何不满？ Does contractor regularly consult with PIU, TVET administration, students as well as nearby residents to identify concerns?	✓			
67. 上一次检查后是否进行过空气质量监测？如果有，请列明监测结果；如果没有，请标明下一次监测时间。 Was air quality monitoring conducted since the last inspection? If yes, present results. If	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
no, indicate date of next monitoring campaign.				
噪音 Noise				
68. 是否有噪音超标的迹象？如果有，请说明噪音产生的地点和设备。 Is there evidence of excessive noise? If yes, describe location and equipment.		✓		
69. 承包商是否对设备进行定期检修，保证遵守 GB 12523-90？ Does the contractor undertake regular equipment maintenance, ensure compliance with PRC standard of GB 12523-90	✓			
70. 混凝土搅拌等类似施工活动是否距离敏感区至少 300 米？ Are sites for concrete-mixing and similar activities located at least 300 m from sensitive areas?	✓			
71. 施工噪声许可在限制时段是否有效？ Is the CNP (Construction Noise Permit) valid for work during restricted hours?	✓			
72. 空气压缩机和电机运行时房门是否关闭？ Do air compressors and generators operate with doors closed?	✓			
73. 不用的设备是否关闭或将油门调小，降低速度？ Is idle plant/equipment turned off or throttled down?	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
74. 是否采取了任何能够减弱噪音的活动 （如隔音罩、屏障等）？ Was noise mitigation measures adopted (e.g. use noise barrier / enclosure)?	✓			
75. 上一次检查后是否进行过噪声监测？ 如果有，请列明监测结果；如果没有， 请标明下一次监测时间。 Was noise monitoring conducted since the last inspection? If yes, present results. If no, indicate date of next monitoring campaign.	✓			
76. 承包商是否定期与项目实施单位、学 校学生及附近的居民交流，了解是否 对声环境是否有任何不满？ 27. Does contractor regularly consult with PIU, TVET administration, students as well as nearby residents to identify concerns related to noise?	✓			
地表水污染 Surface water pollution				
77. 承包商是否制定了汽油和其它危险物 质临时管理计划（泄露管理计划）？ Did the contractor develop a contingency plan for control of oil and other dangerous substances (Spill Management Plan)?	✓			
78. 现在污水处理设施（沉砂池）维护是 否得当？ Are wastewater treatment systems being used and properly maintained on site? (e.g. desilting tank)	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
79. 施工废水和施工现场的生活污水是否 排入污水管网或现场处理设施以确保 达标排放？ Is construction wastewater and domestic wastewater discharged to sewer systems (if possible), or are on-site treatment facilities provided to ensure compliance with effluent discharge standard?	✓			
80. 是否有污水排入到雨水管？ Are there any wastewater discharged to the storm drains?		✓		
固体废弃物管理 Solid waste management				
81. 现场是否整洁？（是否有垃圾、清扫 是否及时） Is the site kept clean and tidy? (e.g. litter free, good housekeeping)	✓			
82. 腐蚀性和非腐蚀性废弃物是否分开？ Are separate chutes used for inert and non- inert wastes?	✓			
83. 垃圾是否分类存放以促进回收利用？ Are separated labeled containers/ areas provided for facilitating recycling and waste segregation?	✓			
84. 建筑垃圾、可循环利用的废弃物及一 般垃圾是否定期清运？ 35. Are construction wastes / recyclable wastes and general refuse removed off site regularly?	✓			
85. 化学品废弃物（如果有）是否由有资 质的单位收集并妥善处置？			✓	

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
Are chemical wastes, if any, collected and disposed of properly by licensed collectors?				
健康和安全 Health and safety				
86. 承包商是否制定并提交环境、健康 和安全管理计划？ Did the contractor prepare and submit an Environmental, Health and Safety Management Plan (HSMP)?	✓			
87. 现场是否提供了安全的洁净水？是否 为工人提供了足够的厕所？ Is safe supply of clean water and an adequate number of latrines provided for workers?	✓			
88. 施工现场是否有垃圾收集设施？ Are garbage receptacles provided at construction site?	✓			
89. 是否按照健康和安全有关规定向工人 提供了个人防护设备？ Is personal protection equipment (PPE) provided for workers in accordance with relevant health and safety regulations?	✓			
90. 承包商是否制定事故和紧急事件的应 急响应预案？ Does the contractor have emergency response plan to take actions on accidents and emergencies?	✓			
91. 在施工现场粘贴明显的标识，提醒师 生和公众可能出现的危险，如车辆、 有害物质、开挖等，提高安全意识；	✓			

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
Are clear signs placed at construction sites in view of the TVET students and staff as well as the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc, and raising awareness on safety issues?				
92. 是否有围栏等措施保证施工现场的安全，防止随意进出？ Are all construction sites made secure, discouraging access through appropriate fencing?	✓			
93. 是否采取了交通管理措施（限速、限行等）？ Are traffic control measures (speed control, access control) applied?	✓			
94. 灭火器、消防设施是否维护并在有效期内？消防通道是否被阻断或堵塞？ Are fire extinguishers / fighting facilities properly maintained and not expired? Escape not blocked / obstructed?	✓			
植被 Vegetation				
95. 无施工活动的地区是否有过度破坏植被的迹象？ Is there any evidence of excessive destruction of existing vegetation where no construction activity is occurring?		✓		
96. 土建工程完工后是否恢复受干扰区的植被？ 47. Are disturbed areas properly re-vegetate after completion of civil works?			✓	

检查内容 Inspection Item	是 Yes	否 No	不适用 N.A. 或不存 在该问 题	备注（如发现的问题、可能的原因或 建议的纠正/预防措施） Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
文物古迹 Physical cultural resources				
97. 是否有可能发现文物古迹？如果有， 确保采取合理的措施保护文物古迹。 Are they any chance found relics? If yes, ensure appropriate measures taken to preserve them.			✓	
其它 Others				
98. 其它问题或意见 Any other problems identified or observations made?		✓		

Date, Name and Signature of Site Inspector

Supervised by

刘子菲Liu Zifei

现场检查人员签字、日期2019年7月

APPENDIX 4 PUBLIC CONSULTATION RECORDS AND SAMPLE GRIEVANCE REDRESS FORM

Questionnaire results of public consultation results statistics on environment impactal of this project—江西吉安城市交通项目伯安大道（吉福路-韶山西路）（吉福路-韶山西路）工程伯安大道 Urban Roads– Bo'an Road (Jifu Road–Shaoshan West Road), 3.15 km

江西中煤 Jiangxi ZhongmeiConstruction Group Co., Ltd.

江西吉安城市交通项目中山西路（吉州大道-伯安大道）Zhongshan west road (jizhou road - bo an road), 3.39 km

江西省路桥工程集团有限公司 Jiangxi Road & Bridge Engineering Group Co., Ltd. 现场位置 SiteLocation: 江西省吉安市高铁新区 Jian Gaoti station

Public consultation results statistics on environmental impact of this project

调查问题 consultation questions	选项 Option	number of respondents	number of people
1, 项目实施对资源环境产负 During implementation of this project, what do you think the negative impacts on water resources and water environment	A: 轻 The impact is minimal	30	21
	B: 较轻 The impact is slight		5
	C: 有一些 there are some impact		3
	D: 明显 the impact is significant		1
2, 项目实施对环境影响 During implementation of the projet, the impacts on water environment, river and lake	A: 轻 The impact is minimal	30	19
	B: 较轻 The impact is slight		5
	C: 有一些 there are some impact		5
	D: 明显 The impact is significant		1
3, 对环境: 废气, 扬尘, 恶臭 During implementation of this project, the negative impacts on atmosphere: such as the emission	A: 轻 The impact is minimal	30	21
	B: 较轻 The impact is slight		6

of fuel gas from construction machinery, the dust caused by the construction, the odor caused by the construction	C:□□□□ There are some impact		3
	D: □□□显 The impact is significant		0
4, 对□□环□□□□□□经□□ 单□□□□□□□□□□□□ □□□认为 After mitigation measures are taken, the impacts on atmospheric environment	A:□□轻□ The impact is minimal	30	18
	B: □□较□ The impact is slight		7
	C:□□□□ There are some impact		5
	D: □□□显 The impact is significant		0
5, 对□□环□□□□□□□□动□□□□□□□□□□□□□□ □车辆□输□□□□□ During implementation of the project, what do you think the negative noise impact, such as noise caused by construction activities (earthwork excavation); noise caused by transportation of construction machinery vehicle	A:□□轻□ The impact is minimal	30	20
	B: □□较□ The impact is slight		5
	C:□□□□ there are some impact		4
	D: □□□显 the impact is significant		1
6, 对□□环□□□□□□□经□□ 单□□□□□□□□□□□□□□ □□□认为 After mitigation measures are taken, the impacts on acoustic environment	A:□□轻□ The impact is minimal	30	22
	B: □□较□ The impact is slight		4
	C:□□□□ There are some impact		4
	D: □□□显 The impact is significant		0
7, 对□□废□□处□□环□□□□□□□□废□□□□□废□□□□ □□□□□□□□□□ During implementation of the project, the negative impacts caused by at construction waste and domestic waste	A:□□轻□ The impact is minimal	30	19
	B: □□较□ The impact is slight		7
	C:□□□□ There are some impact		4

	D: □□□显 The impact is significant		0
8, 对□□废□□□□□□□经□ □单□□□□□□□□□□□□ □□□认为 After mitigation measures are taken, the impacts of wastes	A:□□轻□ The impact is minimal	3	23
	B: □□较□ The impact is slight		4
	C:□□□□ there are some impact		2
	D: □□□显 the impact is significant		1
调查问题	选项□□	□	□□
9, □□□动对□态环□□□□□对□□□□树□□□从□□□□动□□□□□□□□动□□□□动□□□鱼□□□□□□□□□□ The impact of construction activities on ecological environment; such as on vegetation (trees, grass); wild animals (rabbits, snakes and other small animals) on aquatic animals and plants (fish, frogs, aquatic plants)	A:□□轻□ The impact is minimal	30	20
	B: □□较□ The impact is slight		7
	C:□□□□ there are some impact		3
	D: □□□显 the impact is significant		0
10,□□□动对□态环□□□□□□□经□□单□□□□□□□□□□□□□□□认为 After mitigation measures are taken, the impacts on ecological environment	A:□□轻□ The impact is minimal	30	21
	B: □□较□ The impact is slight		5
	C:□□□□ there are some impact		3
	D: □□□显 the impact is significant		1

Table Sample Record Form of Petitions and/or Complaints

亚行贷款江西吉安可持续城市交通项目 公众环境保护诉求记录表 Jiangxi Ji'an Sustainable Urban Transport Project Record Form of Petitions and/or Complaints					
				编号: No.	001
诉求人姓名 Name of petition	XX 先生/女士 Mr./Ms.	联系电话 Contact	XXXX	接收时间 Date of grievancelodged	201X-XX-XX 19:42
信息来源 Types of petitions	电话/书面 Oral/written	单位/地址 Address	XX 镇/村	接收员姓名 Name of Recorder	XXX
涉及标段及承包商 Related contractor	HGH C1.X XX 公司 XX Construction Company	涉及监理公司 Related CSC	XX 监理公司 XX CSC	交办时间	201X-XX-XX 19:42
诉求环境问题及影响范围，受影响人数 Environmental issues raised and number of people affected	XX 先生女士反映：XX 施工标段存在大气和垃圾环境问题，涉及 XX 个镇、村或 XX 户居民，受影响人数 XX 个。 Ms. XX complain that there were atmospheric and garbage environmental problems in the XX construction section, influence the residents of XX towns, villages or XX households, and the number of people affected was XX.				
办理意见 Corrective action	请 XX 部门或公司核实处理，于 XX 年 XX 月 XX 日前与诉求人联系并将办理结果告知诉求人。Please verify the XX department or company, in XX years XX months XX days before and petitioners contact and will handle the results to inform the petitioners.				
办理结果 Solution	本部门已于 XX 年 XX 月 XX 日，安排施工单位进行定期清扫，请您留意观察。 This department is already in XX XX month XX day, arrange the construction unit to carry on the regular cleaning, please pay attention to watch.				
回访结果 Date of follow up	XX 年 XX 月 XX 日，回访 XX 先生，XX 先生对处理结果表示满意。 XX, XX month XX, returned to Mr. XX, and Mr. XX was satisfied with the results of the treatment.				

Note: Place of XX is used for filling the special message while the Complaints occurred. During the reporting period, there no complain occurred. So the Place of XX is same to the original table.