Environmental Monitoring Report

Project Number: 45022-002
Semi-Annual Report
July 2018

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.

Asian Development Bank

Environmental Monitoring Report

Project Number: **Loan 3216-PRC**

January---June, 2018

Jiangxi Ji'an Sustainable Urban Transport Project

July 2018

Prepared by Ji'an PMO for ADB

ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
COD_{cr}	Chemical oxygen demand
CSC	Construction supervision company
dB	Decibels
DEIA	Draft environmental impact assessment
DO	Dissolved oxygen
EA	Executing Agency
EIA	Environmental impact assessment
EIR	Environmental impact report
EM	Environmental monitoring
EMA	Environmental monitoring agency
EMP	Environmental Management Plan
EMR	Environmental Management Report
EMS	Environmental monitoring station
EPB	Environmental protection bureau
GRM	Grievance redress mechanism
LAeq	Equivalent continuous A-weighted sound pressure level, in decibels
Leq	Equivalent continuous sound pressure level, in decibels
LIEC	Loan implementation environment consultant
LSMI	licensed soil erosion institute
NH_3-N	Ammonia nitrogen
NO_2	Nitrate
O&M	Operation and maintenance
pH	potential of hydrogen; used to specify the acidity or basicity of a solution
PIU	Project implementation unit
JPMO	Ji'an Project management office
PPTA	Project preparatory technical assistance
PRC	People's Republic of China
RP	Resettlement plan
SEMSP	Site Environmental Management and Supervision Plan
SPS	Safeguard Policy Statement (of ADB)
SS	Suspended solids
SWM	Solid Waste Management facility
TN	Total Nitrogen
TP	Total Phosphorus
TSP	Total suspended particulates
WHO	World Health Organization

SUMMARY PROJECT INFORMATION

GENERAL INFORMATION	
Project title:	Jiangxi Ji'an Sustainable Urban Transport Project
Date of project effectiveness:	September 8,2015
Executing agency:	Ji'an Municipal Government
Implementing agency:	Ji'an Urban Investment and Development Company, Ltd (JIDC)
JPMO (name of agency):	Ji'an Urban Investment and Development Company, Ltd (JIDC)
JPMO Environment Officer (name, email):	Mr. Huang Maoping
Loan implementation consultant / firm:	
LIEC:	Liu Huaiquan
Construction supervision company(ies):	Jiangxi Zhongchang engineering consultant and supervision Co. Lt
Contractor(s):	Yuming Construction Group Co., Ltd
	Hangzhou Municipal Construction Group Co., Ltd
	Nanning Municipal Construction Group Co., Ltd
	Taiyuan Municipal Construction Group Co., Ltd.
	Jiangxi Luqiao Engineering Group Co., LTD
ADB web link to EMP:	
Domestic web link to EMP:	

ENVIRONMENTAL SAFEGUARD MONITORING	
ADB environment safeguard category:	A
Environmental report prepared as per ADB requirements for this category:	Environmental Impact Assessment

Domestic safeguard report:	Environmental Impact Assessment Repot
Quarterly period covered by this report:	January 2018 to June 218
# EMRs to date including this report:	
Agency/person responsible for internal* environmental monitoring:	Nanning Municipal Construction Group Co., Ltd. Hangzhou Municipal Construction Group Co., Ltd. Yuming Construction Group Co., Ltd
Agency/person responsible for external* environment monitoring:	Beijing Zhonghuanbohong Environmental Resources Science and Technology Co., Ltd
Agency/person responsible for compliance* environment monitoring:	Liu Huaiquan JPMO Huang Maoping
Agency/person responsible for independent compliance* monitoring:	Jiangxi Zhongchang engineering consultant and supervision Co. Ltd
Overall status of environmental safeguards:	On Track

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.

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Executive summary

Overview

1. This is the second report presents the status of compliance with the environment management plan (EMP) during the project implementation from January 1, to June 31, 2018.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. 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 EPBs have conducted related public consultation activities in accordance to ADB requirements. The GRM has been established and carried out by JPMO. No complaints have been received during this reporting period.

4. Environmental officers of JPMO and 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.

5. The Loan Implementation Environment consultant (LIEC) has conducted an effective 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 site was carried out.

Key issues

6. Water monitoring exercises have been carried out with the results showing that efforts on Yudai River water met the related standard, pollution control should to be strengthened in the next stage.

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 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.

Next steps

8. The Project Environment Management Plan's (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. To continue and Strengthening the monitoring the sediments for the dredging activities.

I. INTRODUCTION

1. Purpose of report

10. The purpose of this environmental monitoring report (EMR) is to describe the progress for implementation of the environmental management plan (EMP) for the Jiangxi Ji'an Sustainable Urban Transport Project, for the reporting period January to June 2018. This EMR is submitted in compliance with the Safeguard Policy Statement (SPS)of the Asian Development Bank (ADB) and the loan agreement between ADB and the project executing agency.

11. This is the second 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 grew 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) system and upgraded multimodal connections. This will reduce transport costs, increase the efficiency and attractiveness of the public transport system, expand travel opportunities and regional accessibility to jobs and services, promote sustainable urbanization, and encourage a shift to modes of travel with lower emissions.

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

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

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 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 BRT corridor (Output 1). Five urban trunk roads with a total length of 19.3 km will be constructed along with utilities, streetscape improvements, pedestrian enhancements, and segregated lanes for NMT. In the view of the rapid growth of traffic demand and the implementation of the BRT 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 BRT 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 BRT 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, monitored, and reported.

19. Environmental funding. A grant from the Global Environment Facility (GEF) provided measures to maximize the energy efficiency of bus operations on the BRT 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.

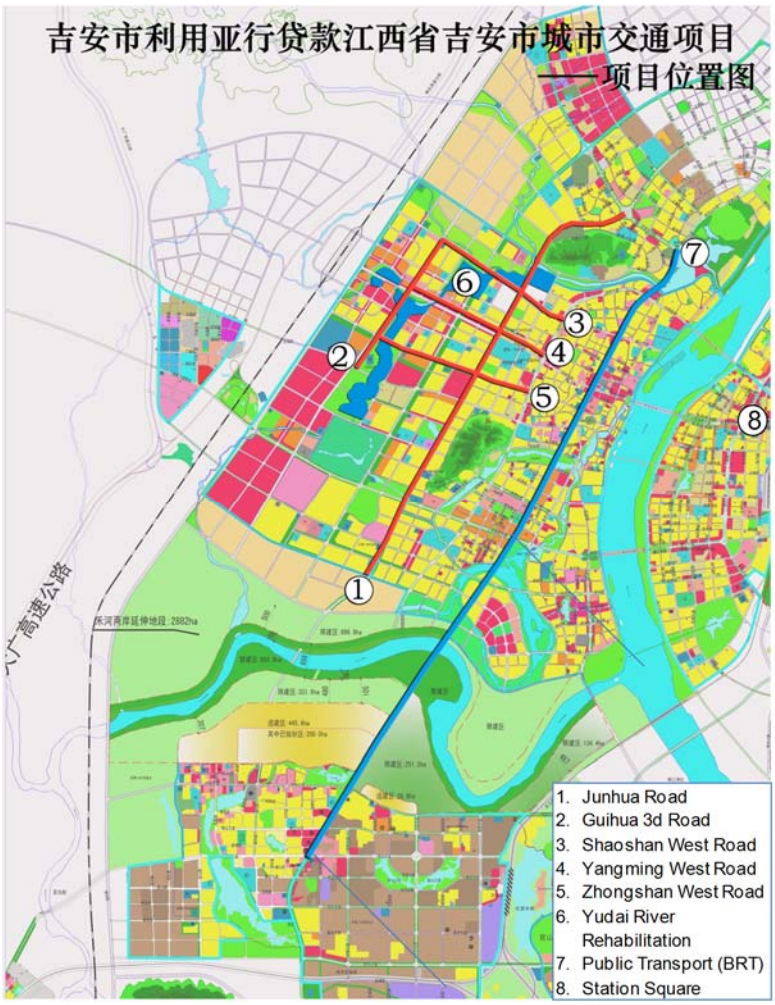
3. Project implementation progress

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. The NDRC approved the financing application report on October 2014. The Ministry of Finance finished the loan negotiation after signing with NDRC and Jiangxi Provincial Government for the State Council's approval on later 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. The original investment plan for BRT was CNY239 million, among it, ADB loan fund was about 160 million. BRT construction is the key component within Ji'an ADB loan project, it is the priority condition for loan approval. Both ADB and NDRC & Ministry of Finance have always keep highly focus on it. The implementation has directly related with the seriousness of the national loan sovereignty. ADB has repeated requested Ji'an government to start this project.

3.1 Road project components implementation progress

22. The road project component includes 5 main roads on the west areas of Ji'an city(high railway new district), namely Yangming West Road, Junhua Avenue, Zhongshan&Shaoshan West Road and Bo'an Avenue. Yangming West Road has changed to counterpart funding. Junhua Avenue has divided into two lots, the contract awarded in May 2017 and started construction on the following month. The construction drawing of Zhongshan&Shaoshan West and Bo'an road has finished. During this reporting period, the preparation of bid documents for Zhongshan and Shaoshan West Road are on-going.



Picture: Project location

1)Junhua Avenue

1)Junhua Avenue(cut off the end of May)

23. Junhua Avenue lot 1 (contract C4-O1): accumulative finished about 21% of the overall works, among them,33% for road,8% for bridge and culvert build. No build for drainage, lighting, transportation facilities.

24. Junhua Avenue lot 2(contract C4-O2):accumulative finished about 15% of the overall works, among them,12% for road,28% for bridge and culvert build. No build for drainage, lighting, transportation facilities.

2) Yangming West Road (cut off the end of May)

25. Accumulative finished about 40% of the overall works. Subgrade engineering: digging, silting completed, filling completed design 87.3 %. Bridge Project: 50 % complete. Drainage works: finish 68.72 % of rainwater pipeline, and 75 % of sewage pipeline. Culvert works: all completed.

3) Other roads.

26. The drawing design was completed and detailed budget was assessed for Zhongshan & Shaoshan West and Bo-an road, and the bid documents are under preparation. The procurement of environment monitoring services were completed for ADB loan Ji'an urban transport project and start the monitoring.

27. The updated resettlement reports for 5 roads as well as the river Rehabilitation have been finished. The reports for Junhua avenue, West shaoshan and zhongshan road have been approved by ADB, other components will finish the update according to ADB's requirements and ask for ADB's approval before procurement.

28. 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 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. More detailed items and cost estimate are included as ***Error! Reference source not found.****, and the location map is included as* ***Error! Reference source not found.****.*

29. The proposed bus and NMT improvement can be implemented within the current right-of-way except for the four depots. The depots are needed to support JRT's higher frequency service, increased charging needs for newly procured electric buses, and properly maintain the bus fleets. The four depots are: (i) a south depot in Ji'an County with 10 mu land area, which has been owned by the county government since 2014 and is used as parking; (ii) a north depot in Jizhou District with 60 mu land area, which was acquired by the county government in 2018 (formerly farm lands) and has been cleared; (iii) a west depot besides the new high speed rail station with 45 mu land area, which the government is developing and requested to finance maintenance equipment only from the ADB loan; and (iv) an east depot in Ji'an City to the south of old city center with 24 mu land area, which was acquired by the Ji'an City government in 2003 and being developed as part of the new area development. The Mission noted that a revised EIA will be required for the depots

and other changes as necessary, and it should be prepared in coordination with domestic environmental assessment requirements. Also, a due diligence report on land acquisition and resettlement (LAR) should be prepared and submitted to ADB for review.

30. The JRT branding will promote users' trust by providing reliable service with basically 5-minute headway for 18 hours/day on weekdays and 24 hours/day on weekends. The proposed JRT network will cover 7 routes and 70 km. The project's BRT consulting firm (Far East Mobility) will support identifying the concept, image, color, and other aspects of infrastructure and bus fleet design. The EA/IA and bus company are expected to market the brand and improved service through television, newspaper, and other media to current and potential users to enhance ridership. The Mission suggested that a study tour to a successful case like Brisbane, Australia would be very beneficial to learn from and build concepts upon. ADB loan proceeds can be used to cover necessary costs for such study tours.

II. SUMMARY OF THE PROJECT ENVIRONMENTAL MANAGEMENT PLAN

31. 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 2year 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.

32. **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 Huaiquan, Research Fellow of Eco-Environmental Science and Registered EIA Engineer).

33. 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.

34. 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.

35. **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.

36. 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.

37. 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).

38. 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.

39. 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.

III. ENVIRONMENTAL MANAGEMENT DURING THE REPORTING PERIOD

40. 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

41. 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 to 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	● 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	**Detailed design stage** By Design Institute 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 coved in the related documents. The special mitigation measures on materials that are recycled, were coved in the related documents. The special mitigation measures on grey water collection and water conservation were coved in the related documents.
Extreme weather event due to climate change	Road surface cracking due to extreme hot or cold weather, landslide and flooding due to torrential rainfall	● 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.	**Detailed design stage** By Design Institute Measures to mitigate potential impacts from extreme weather events have been

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
			included in the detailed design.
	Flood control capacity of Yudai River	● Consider potential impacts from extreme storm events due to climate change in designing the flood control capacity of Yudai River	**Detailed design stage** By Design Institute Flood control capacity of Yudai River have been considered in the detailed design.
Ecology	Loss of camphor trees (under national Class II protection) (see Figure IV.5 in the EIA report)	● 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.	**Detailed design stage** By Design Institute Loss of camphor trees (under national Class II protection) have considered in the detailed design.
Physical cultural resource	Preservation of old camphor trees (see Table IV.19 in the EIA report)	● Technical design of the urban road alignments MUST avoid all locations with old camphor trees as shown in Table IV.9 in the EIA report.	**Detailed design stage** By Design Institute Preservation of old camphor trees have been put into the technical design of the urban road.
Health and safety	Promotion of non-motorized transport, protection of vulnerable road users	● Design must ensure public health and safety. ● Promote non-motorized traffic. ● Ensure barrier-free design for disabled people.	**Detailed design stage** By Design Institute To ensure public health and safety have been considered in the detailed design.
Air emissions	Construction transport emissions	● 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	● 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

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
			Road traffic noise mitigations have included in the detailed design.
Water quality	Polluted run-off into Yudai River	● 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	● 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 bank side 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	● 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	● 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	● 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.**
		● Contract JEMS to conduct project impact monitoring during the operational stage.	**Pre-construction Stage** By JPMO

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
			Not due yet.
EMP	EMP Update	● 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: ● 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 local schools and hospitals; ● Assign haulage routes and schedules to avoid transport occurring in the central areas, traffic intensive areas or residential areas. For the areas with high-demand on environmental quality, transport should be arranged at night. ● Keep construction vehicles and machinery in good working order, regularly service and turn off engines when not in use; ● Vehicles with an open load-carrying case, which transport potentially dust-producing materials, shall have proper fitting sides and tail boards. Dust-prone materials shall not be loaded to a level higher than the side and tail boards, and shall always be covered with a strong tarpaulin; ● Install wheel washing equipment or conduct wheel washing manually at each exit of the works area to prevent trucks from carrying muddy or dusty substance onto public roads; ● In periods of high wind, dust-generating operations shall not be permitted within 200 m of residential areas. Special precautions need to be applied in the vicinity of sensitive areas such as schools, kindergartens and hospitals; ● Equip material stockpiles and concrete mixing equipment with dust shrouds. For the earthwork management for backfill, measures will include surface press and periodical spraying and covering. The extra earth or dreg should be cleared from the project site in time to avoid long term stockpiling. The height of stockpiles should be less than 0.7m; ● To avoid odor impacts caused by channel	**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
		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	Put into tender documents the following noise mitigation measures: ● 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 urban roads, there will be no night time (between 2200 and 0600 hours) construction; ● For the BRT corridor, 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	**Pre-construction Stage** By JPMO The mitigation measures to control the noise 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
		and communities along the road alignments and Yudai River.	
Water quality	Construction site wastewater, bridge construction and dredging impact on water bodies	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: ● 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 pumping and sediment removal at each dredging location will be based on water quality monitoring results. The water quality monitoring approach for	**Pre-construction Stage** By JPMO 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.

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		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.	
Ecology	Impact on trees and wildlife	Put into tender documents the following ecological mitigation measures: ● 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	**Pre-construction Stage** By JPMO The mitigation measures to control the impact on trees and wildlife have been put into tender documents and conducted readiness activities.
Physical cultural resources	Preservation of old camphor trees	Put into tender documents the following ecological mitigation measures: ● 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	**Pre-construction Stage** By JPMO 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.
Solid waste	Disposal or storage of excavated spoil and construction and demolition waste	Specify in tender documents the following mitigation measures: ● 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.	**Pre-construction Stage** By JPMO 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.

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
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.	**Pre-construction Stage** By JPMO The required activities on occupational health and safety of workers were specified in the tender documents and conducted readiness activities.
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.	**Pre-construction Stage** The mitigation measures on construction vehicles causing traffic congestion have been considered in the transport route planning.
Construction stage			
Soil resources	Spoil disposal	● Strip and store topsoil in a stockpile for reuse in restoration. ● Use spoil disposal sites approved by YEPB and manage in accordance with approved plan. ● Avoid side casting of spoil on slopes. ● Co-ordinate with water resources bureau monitoring station on effectiveness of soil erosion prevention measures and any need for remedial action. ● Rehabilitate and restore spoil disposal sites in accordance with agreed plan. ● Conduct project completion audit to confirm that spoil disposal site rehabilitation meets required standard, contractor liable in case of non-compliance.	**Construction stage** **By Contractors** The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites as following; Topsoil has been stored as needed. Spoil disposal sites have been agreed by local authorities. ・No borrow area for this project. ・Slope protection for road construction ・Local water resources bureau is involved in implementation of soil erosion prevention measures. ・No borrow area for this project. Spoil disposal sites are in compliance with river course regulation. ・Slope stability has been fully considered contractors reasonably to minimize the open area. ・Restoration has been included in detailed design of the disposal sites, and is/will be included in the contract. ・Closing program has been included in the design and is/will be included in the

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
			contracted and drainage system is designed for each spoil disposal site.
	Soil erosion	● 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.	**Construction stage** **By Contractor** The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites as following; Soil erosion prevention requirements have been reflected in the design and made to the contractors. · No construction activities in rainy days ,and mitigation facilities have been built to divert rainwater. · Drainage ditches and sedimentation sites have been built on bridge construction sites. · Slope protection for road construction should be carefully reviewed and design improvement should be considered.. · Drainage provision is fully considered.
	Soil contamination	● 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.	**Construction stage** **By Contractor** The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites as following; Spill response measures have been taken on site. · Strict requirements for spill response have been made to the contractors by the IAs . · No spill accidents occurred.

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
			· No petroleum or hazardous materials are stored on site.
Air quality	Dust (TSP) during construction	● Provide dust masks to operating personnel; ● Spray water regularly on hauling and access roads to borrow pits (at least once a day) to suppress dust; and erect hoarding around dusty activities; ● Minimize the storage time of construction and demolition wastes on site by regularly removing them off site; ● Equip concrete batching plants with fabric filters and/or wet scrubbers to reduce the level of dust emissions. Additionally, concrete mixing stations at least 300 meters downwind of the nearest residential household; ● Mount protective canvasses on all trucks which transport material that could generate dust; ● Build access and hauling roads at sufficient distances from residential areas, particular, from local schools and hospitals; ● Assign haulage routes and schedules to 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 dreg should be cleared from the project site in time to avoid long term stockpiling. The height of stockpiles should be less than 0.7m; ● Plan the transport routes and time to avoid busy traffic and heavily populated areas when transporting earthy materials; ● Immediately plant vegetation in all temporary 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	Construction stage By Contractor The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites as following; Dust masks were provided. · 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. · As disposal sites were put in use, spoil previously stored has been cleaned up in this reporting period. · Covered transportation. · Access to schools and hospitals were fully ensured. Proper maintenance was done regularly for vehicles and machinery. · · Trucks were washed regularly and as needed. · Operation in high windy days is strictly managed. · · No burning of construction or demolition wastes on site. Open air burning of wood for warmth was observed during a field visit to site was one of the conditions that reveal the need to foster on going environmental awareness training. · Such information is posted at construction camps and public media.

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		subject to penalties for the Contractor, and withholding of payment.	
	Fumes and particulate matter from asphalt mixing plant, concrete batching plant and other equipment and machinery	● Locate asphalt plants and mixers at least 200m 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.	**Construction stage** **By Contractor** The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites as following No asphalt mixing station in this reporting period. ・Wet scrubbers are installed for batching plants. ・Proper vehicle and equipment maintenance is made regularly.
Noise and vibration	Noise from PME and vehicles	● 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 urban roads, there will be no night time (between 2200 and 0600 hours) construction; ● For the BRT corridor, 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	**Construction stage** **By Contractor** The mitigations have been conducted for the construction activities at Yangming West Road and Junhua 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. ・

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		hearing protection (ear muffs) according to the worker health protection law of the PRC; ● Control the speed of bulldozer, excavator, crusher and other transport vehicles travelling on site, adopt noise reduction measures on equipment, step up equipment repair and maintenance to keep them in good working condition; ● Limit the speed of vehicles travelling on site (less than 8 km/hr), forbid the use of horns unless absolutely necessary, minimize the use of whistles; ● Maintain continual communication with the villages and communities along the road alignments and Yudai River.	
Water quality	Construction site runoff and wastewater discharge; dredging impact	● 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	**Construction stage** **By Contractor** The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites as following; 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.

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		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	● 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	**Construction stage** **By Contractor** The mitigations have been conducted for the construction activities at Yangming West Road and Junhua Avenue construction sites as following; 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

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		contracts.	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.
Ecology	Destruction of vegetation	● 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 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	● Construction workers are prohibited from damaging the old camphor trees ● Contractor must comply with PRC's *Cultural Relics Protection Law* and *Cultural Relics Protection Law Implementation Regulations* 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	● 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	● 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	**Construction stage** **By Contractor**

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
		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 hygenic 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.	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	● 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 Contracto**r The mitigations have been conducted as following; Personal protective equipment has been provided to the workers.
	Food safety	● Inspect and supervise food hygiene in cafeteria on site regularly. Cafeteria workers must have valid health permits. ● Once food poisoning is discovered, implement effective control measures immediately to prevent it from spreading.	Construction stage By Contractor The mitigations have been conducted as following; Food hygiene in cafeteria was inspected

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
			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	● 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	● 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	● 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.

Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Work phase Implementing status
	Access to construction sites	● 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	● 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	● 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.	C**onstruction 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

42. 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. In general, impacts were of similar scale at each site and adherence to EMP requirements were of a similar standard at all.

Conclusions and next steps

43. Environmental management system has been established at each of the implementation agencies for enforcement of environmental management. .In designated responsible person and construction contracts, the some measures of environmental management system employed. At construction sites, waste-water emissions, noise control, dust and exhaust control, and solid waste treatment are included. The Loan Implementation Environmental Consultant Specialist assistance to ensure effective implementation of the Environmental Management Plan (EMP) and requires the implementation of mitigation measures.

44. During this reporting period, the EMP has been executed for all the subprojects. Environmental mitigation measures have been taken during construction while the environmental compliance monitoring and reporting have been carried out. Adverse impacts on the environment have been minimized.

45. No environmental incidents have been reported and there have been no complaints received with respect to environmental impacts from potentially affected persons.

46. The JPMO and PIUs retain the services of design institutes, specialist procurement agencies and construction supervision companies to assist in the implementation activities. The JPMO and PIUs have a number of staff trained in project management and relevant ADB procedures during implementation of the project.

2. Implementation of the project monitoring program

47. The following environment safeguard monitoring was conducted in the reporting period: which including; Internal monitoring, External monitoring Compliance monitoring, Independent compliance monitoring. Summary data on the monitoring are presented in Table 3. Raw data are in Appendix 1. A summary of the monitoring activities is presented here.

Internal monitoring

48. Internal monitoring. Internal environmental monitoring including routine or periodic inspection of construction waste treatment and implementation of mitigation measures, and include ensuring adequate environmental supervision. The Loan Implementation Environmental Consultant Specialist provides training to ensure that contractors and construction supervision company may conduct internal environmental monitoring and preparation of related reports. The Loan Implementation Environmental Consultant Specialist 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 for this reporting period. The results of the Environmental Site Inspection Checklist are provided in the appendix 1. The Loan Implementation Environmental Consultant Specialist assist JPMO compiled and submit semi-annual environmental reports to the Asian Development Bank.

External monitoring

49. The project office has appointed Beijing Zhonghuanbohong Environment Resources Tech Co., Ltd, which was hired in February, 2017, to conduct environmental external monitoring, In 2018, some sub projects have been carried out civil engineering, and the external monitoring of the site for civil engineering construction has been completed. Summary of External Environmental Monitoring Activities and Results for Jan. to Jun. 2018 are provide in the following Table 2. The monitoring data sets are provided in Appendix 1.

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**
Surface water at Junhua road construction mainly across the water to Yudai River PH, SS, CODcr, Ammonia nitrogen, , Petro Oil,	Four times per year, once/day during construction; Six activities at 2 sampling points	Y	Y, Met the required standards
Ambient air quality; at Junhua road construction; Yangming West Road Particulate matter TSP	Four times per year, once/day during construction 1 activities at 2 sampling points	N, Air quality monitoring frequency(is) are less the than per month when there is construction occurring.	Y, Met the required standards
Environment Noise; at Junhua road construction; Yangming West Road construction noise limitation [LAeq dB(A)]	Four times per year, once/day during construction Six activities at Nine sampling points	Y	Y, Met the required standards

50. 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 Project EMP. Required actions will be taken based on the monitoring results. The original external environmental monitoring data are provided in the appendix 1.

Compliance monitoring

51. The LIEC was recruited on 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 first EMR to ADB. 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

52. The independent monitor is Jiangxi Zhongchang engineering consultant and supervision Co. Ltd. which was recruited on April 2017 by the JPMO. The lead monitor is Qu Anan. During the reporting period the company: (i) conducted 11 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

53. 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 January 2018 and June 2018

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	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 assurance 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 mitigation Noise control and mitigation Surface water pollution control and mitigation Solid waste management and mitigation Health and safety and management	Construction site Inspection; Environmental site Inspection check list Monthly at construction stage	Y	Not applicable

	Eco-environment and vegetation management Physical cultural resources management			

54. 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 the 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.

55. External Environmental Monitoring on environmental quality (appendix 1) showed that the water environment quality, air quality and sound environment quality can meet the related national standards. The construction activities impacts to the local environmental qualities are at slight level and are very un-significant. In the next stage ; Continue implement the 4 types of monitoring. To strength the monitoring the sediment contents of Dredging activities, especially for the Yudai River Subproject will be conducted. The monitoring on the soil erosion and soil and water conservation should be enforced either.

3. Public consultations and grievance redress mechanism

56. This section describes the public consultations undertaken during the reporting period and implementation of the project grievance redress mechanism (GRM).Documentation for the consultations and/or GRM is in Appendix 2.

57. **Public Consultation:** There are some informal public consultation activities during the project implementation period. Between January 2018 and June 2018, two formal public consultation meetings were conducted, with a total of 26 people from 3 towns and villages and 4 agencies. 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 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.

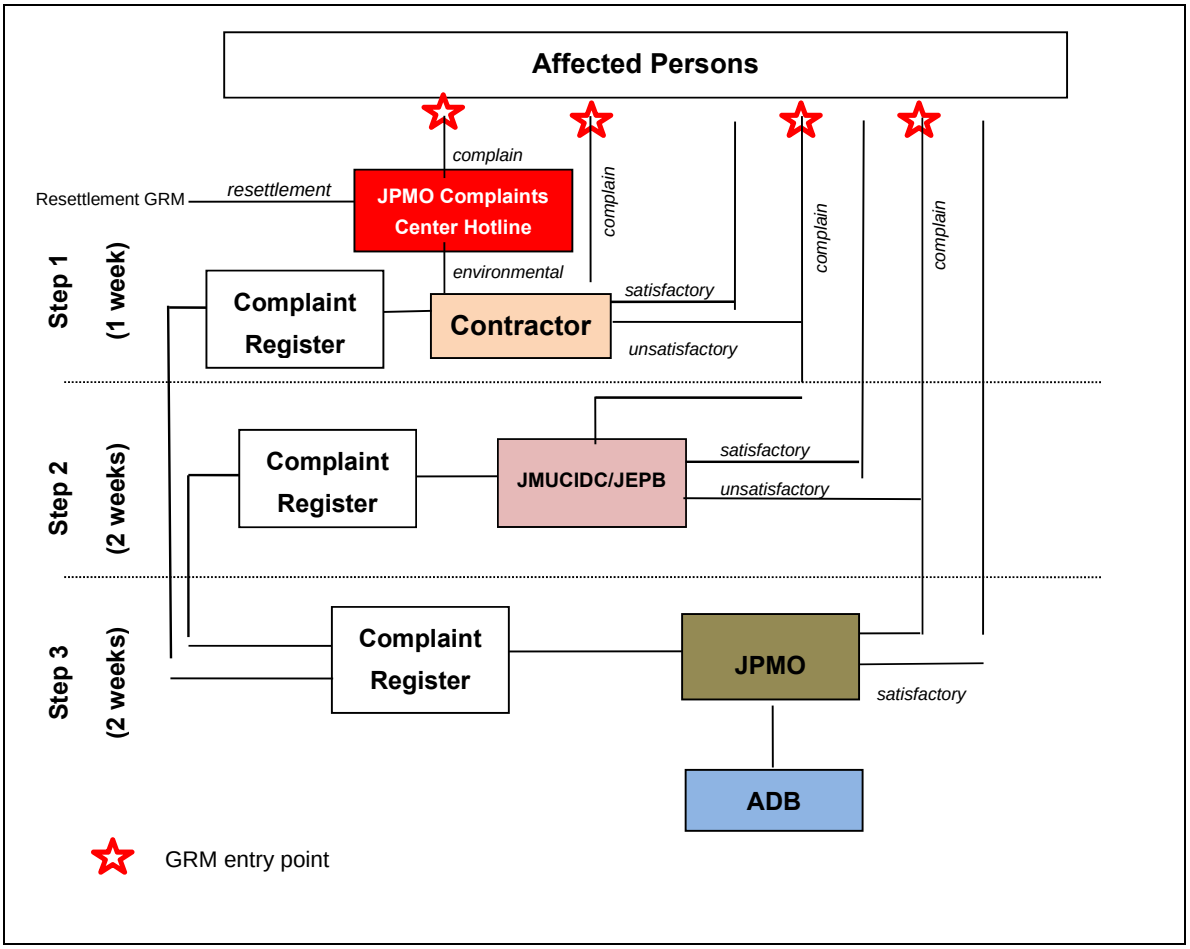
58. The following key issues were consulted with participants: (i) the negative impacts on water resources, atmosphere, sound environment, construction waste treatment, and Eco-environment such as vegetation; (ii)the mitigation efficiency and environmental quality; (iii)the positive impact on the infrastructure facilities and environmental benefits and the macro social benefits of environmental improvement arising from the implementation of this project. There were 26 persons participated 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 75% 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 60% of them believed that the impacts were at slight or less level and about 15% 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 2.

Grievance redress mechanism

59. 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. The following project GRM mechanism was informed to potential affected persons (APs) nearby the construction sites as following figure.

Figure 1. Grievance Redress Mechanism established for the project



60. 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.

61. 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

Subproject	**ERO Person**	**Phone or Email**	**ERO Person for GRM**
PMO	Huang Maoping	15279685715	PMO Huang Maoping
Yangming West Rod	Huang Maoping	15279685715	PMO Huang Maoping
North section of Junhua Road	Pan Wei-an	18978260116	Pan Wei-an Nanning Municipal Construction Group Co.,Ltd.
South section of Junhua Road	Zen Xiaomei	15079611764	Zen Xiaomei Hangzhou Municipal Construction Group Co.,Ltd.

62. During this reporting period, there is no grievance.

Conclusions and next steps.

63. Public consultations. The consultation meetings were held during the reporting period. The PIUs staff, LIEC and contractors consulted with residents visited construction site to seek for their comments and suggestion on the environmental mitigation measures. Most of the residents are satisfied with the implementation of mitigations measures. The consultation meeting results are provided in Appendix 2. Nanning Municipal Construction Group Co.,Ltd.(for North section of Junhua Avenue

construction) and Hangzhou Municipal Construction Group Co.,Ltd. (for South section of Junhua Avenue construction) conducted the consultation meetings. Public consultation should be strengthened based on the public consultation plan defined in Table EMP. The LIEC recommend that the Next steps will enforce the recording of the Public consultations and Grievance Redress Mechanism. The prepared Record Form of Petitions and/or Complaints (GRM) is provided at the appendix 2.

4. Training and capacity building

64. Between January 2018 and June 2018, a total of 4 training events were conducted (Table 5). The LIEC provided the trainings to the related trainees agencies. The training covered 5 topics: Environmental regulatory framework for ADB Loan project and ADB SPS, Grievance redress mechanism by the ADB requirements on Environment Affairs, EMP and 4 type monitoring implementations, Environmental monitoring, inspection, reporting, Theories and practices on soil erosion protection, and solid waste management and control. A total of 62 people from more than 6 agencies participated in the training.

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

Topic	Trainees Agency	Content	Trainees	Date	Outcomes
Grievance redress mechanism by the ADB requirements on Environment Affairs	JPMO, PIUs, Contractors,	GRM structure, responsibilities, steps; types of grievances, eligibility assessment; gender responsive GRM reporting procedures	18	January, May 2018	well understanding of GRM concepts achieved but further training required
EMP and 4 type monitoring implementations To conduct the mitigation measures	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	18	January, May 2018	Contractors expressed appreciation for training, requested further guidance especially regarding how to implement corrective actions
Environmental monitoring, inspection, reporting	PIUs, contractors Internal, External Monitoring Agencies	Monitoring and inspection methods, data collection and processing, interpretation of data, reporting systems	12	May, June 2018	Contractors expressed appreciation for training, requested further guidance concerning monitoring procedures

Topic	Trainees Agency	Content	Trainees	Date	Outcomes
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	14	May, June 2017	Contractors expressed appreciation for training, requested further guidance
Total trainees			62		

65. Conclusions and next steps. In general the training are successes. Trainees gained good understanding of regulatory frameworks on ADB Loan Project environmental Management. They have more understanding of GRM and public participation concepts. PIUs, Contractors expressed appreciation for training, requested further guidance especially regarding how to implement corrective actions. Further guidance concerning monitoring procedures and practise should been trained in the next steps.

5. Compliance with loan and project assurances

66. 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**	

Assurance	Status of Compliance
Conditions for Award of Contract	
The Borrower shall through JPG cause JMG not to award any Works contracts that involves environmental impacts until: (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-- Implementation Arrangements	
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.
Specific Assurances Environment	
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.	Being complied with the detailed design of all urban road alignments.
4. JMG shall ensure that disposal sites for excess soil and construction waste generated during Project implementation will be	Being complied with disposal sites for excess soil and construction waste generated during Project implementation will

Assurance	Status of Compliance
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.	be identified in the detailed design stage of the Project and provided at locations at least 500 meters from any water body.
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.	Not Yet Will To be complied with during operational stage.
<u>Safeguards- Environmental</u>	
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 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.	Being complied with the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities. .
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	Being complied with the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities.

Assurance	Status of Compliance
evaluation of implementation of the EMP.	
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
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

67. 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	January–June 2018	Completed
As above	PIUs CSC	JPMO	Quarterly	Q1, 3, report submitted	reports to be completed at the end of June. 2018.
Progress report – external monitoring of environmental variables	External monitoring agencies	JPMO	Quarterly	Q 1, 2 report submitted	Report completed and submitted
EMR (overall progress of EMP implementation)	JPMO	ADB	Semi-annual	Second; first semi-annual 2018	The second annual EMR have been submitted at the mid of August 2018.
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 – includes safeguards	JPMO	ADB	Once (project completion)	Not applicable during this reporting period	Not applicable during this reporting period

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.

68. 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 July. to December 2018 and will be submitted to ADB end of February 2019.

IV. LESSONS LEARNED

69. When ADB and domestic standards differ, as they did in the case of environmental requirements in this project,the LIEC should provide ADB's requirements to the executing and/or implementing agencies according to ADB's regular guidance.

70. 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.

V . GENERAL CONCLUSIONAND NEXT STEPS

71. At the time of this report, 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.

72. 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.

73. 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 that 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.

74. External Environmental Monitoring on environmental quality (appendix 1) showed that monitoring results met the water environment quality standard, air quality standard and sound environment quality standard respectively, and no exceed the standards were found. The construction activities impacts to the local environmental quality are at very slight level and at short of construction time, and can be neglected.

75. The PIUs retained the services of design institutes, specialist procurement agencies and construction supervision companies to assist in the implementation activities.PMO and PIUs had a number of staff trained in project management and relevant ADB procedures during implementation of the Project. JPMO and LIEC supervised the Sub-project PIUs to engage in a continual and appropriate public information program related to the construction contractor 's environmental management activities.

76. 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.

77. 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.

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APPENDIX 1. MONITORING DATA

One of **internal environmental monitoring results (as the example)**

IV. **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

Environmental verification form filled by environmental management personnel of construction units and environmental supervisors at construction sites

亚行贷款 ADB Loan （3216-PRC）江西吉安城市交通项目

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君华大道Junhua Avenue North section construction site工程工程

现场位置Site Location：吉州区Junhua Avenue

施工分阶段Construction stage： 路基施工阶段

检查日期Inspection Date： 2018年1月, 3月, 5月, 6月

检查人 Inspected by：　　Pan Wei-an, Nanning Municipal Construction Group Co., LTD

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？ 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?	√			

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)**
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?	√			
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？	√			

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 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?	√			路基土方施工过程中定期使用洒水车洒水防尘。 In the process of civil works, water sprinklers were

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)**
				used regularly to prevent dust.
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？ 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?	√			运渣土车出施工现场都用网布遮盖。 The trucks leave the construction site was covered with dust-proof cloth.
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?	√			

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)**
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?	√			
噪音 **Noise**				
18. 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.		√		
19. 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	√			

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)**
20. 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?	√			至今为止本项目无发生现场自拌混凝土。 **In the report period,no mixing concrete at site had been used in this project.**
21. 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?	√			
22. 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?	√			
23. 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?	√			
24. 是否采取了任何能够减弱噪音的活动（如隔音罩、屏障等）？	√			

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adopted (e.g. use noise barrier / enclosure)?				
25. 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.	√			
26. 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**				
27. 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	√			

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contingency plan for control of oil and other dangerous substances (Spill Management Plan)?				
28. 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)	√			
29. 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?	√			
30. 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**				

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)**
31. 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)	√			
32. 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?	√			
33. 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?	√			
34. 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?	√			
35. 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**				
36. 承包商是否制定比提交了环境、健康和安全管理计划？ Did the contractor prepare and submit an Environmental, Health and Safety Management Plan (HSMP)?	√			
37. 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?	√			
38. 施工现场是否有垃圾收集设施？ Are garbage receptacles provided at construction site?	√			

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)**
39. 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?	√			
40. 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?	√			
41. 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?	√			
42. 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?				
43. 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?	√			
44. 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**				
45. 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?		√		

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)**
46. 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**				
47. 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**				
48. 其它问题或意见 Any other problems identified or observations made?		√		

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)**

Date, Name and Signature of Site Inspector

_____

现场检查人员签字、日期

子项名称Sub-Project Name：如江西吉安城市交通项目君华大道Junhua Avenue South section construction site工程工程

现场位置Site Location：吉州区Junhua Avenue

施工分阶段Construction stage： _路基施工阶段

_____

检查日期Inspection Date： _2018年1月, 3月, 4月, 5月, 6月

_____

检查人 Inspected by： _____Zen Xiaomei, Hangzhou Municipal Construction Group Co., LTD__

_____

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？ 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)?	√			

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)**
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?	√			

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8. 化学品、危险物品和废弃物是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**				

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12. 施工现场定期洒水吗？ Are construction sites regularly watered?	√			路基土方施工过程中定期使用洒水车洒水防尘。 In the process of civil works, water sprinklers were used regularly to prevent dust.
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？ Are stockpiles of dusty materials covered or watered and cement debagging process undertaken in sheltered areas?	√			施工现场裸露的土方都用防尘布遮盖。 The bare land at the construction site was covered with dust-proof cloth.
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？	√			

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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?	√			
噪音 **Noise**				
18. 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.		√		
19. 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	√			

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20. 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?	√			至今为止本项目无发生现场自拌混凝土。 **In the report period,no mixing concrete at site had been used in this project.**
21. 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?	√			
22. 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?	√			
23. 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?	√			
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25. 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.	√			
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地表水污染 **Surface water pollution**				
27. 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	√			

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28. 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)	√			
29. 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?	√			
30. 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**				

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31. 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)	√			
32. 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?	√			
33. 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?	√			
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健康和安全 **Health and safety**				
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37. 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?	√			
38. 施工现场是否有垃圾收集设施？ Are garbage receptacles provided at construction site?	√			

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39. 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?	√			
40. 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?	√			
41. 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?	√			
42. 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?	√			

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43. 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?	√			
44. 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**				
45. 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?		√		
46. 土建工程完工后是否恢复受干扰区的植被？	√			

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)**
47. Are disturbed areas properly re-vegetate after completion of civil works?				
文物古迹 **Physical cultural resources**				
47. 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**				
48. 其它问题或意见 Any other problems identified or observations made?		√		

Date, Name and Signature of Site Inspector

_____

现场检查人员签字、日期

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

（January 2018 -June 2018）

Beijing ZhonghuanBohong Environmental Resources Technology Co., Ltd.

July 2018

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

（January 2018 -June 2018）

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, the construction part of Junhua Road and Yangming West Road have already 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 ZhonghuanBohong 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.

Junhua Road is 8795m in length and is divided into two segments the first stage of the work is from Jiannan Road to Yangming West Road, and the commencement date is June 19, 2017； the second stage of the work is from Yangming West Road to Ji'an North Road, and the commencement date is June 19, 2017。Yangming West Road is 1800m long and the start time is July 1, 2017。

Since the project started for nearly a year, the first section and the second section of the Junhua Road, the west of Yangming Road have almost finished the road surface cleaning work, at present, it is in the stage of forming the subgrade, but greening works, drainage works, lighting works, traffic and road works have not started.

As of June 2018, Zhongshan West Road, Shaoshan West Road (ADB and extension), Bo An Road works and the regulation of the Yudai river had not yet started, Therefore, the semi annual report of environmental protection monitoring does not contain the monitoring of atmospheric and noise quality environment of sensitive points in the construction period of Zhongshan West Road, Shaoshan West Road (ADB section and extension section)， Bo an Road, and the related contents of the water quality and sediment monitoring of the Yudai river.

According to the construction status of each bid section, the monitoring content is the monitoring of surface water quality of Yudai River across the water body at Junhua Road, monitoring of atmospheric quality at sensitive points during construction, and monitoring of noise at sensitive points during construction. Samples collected from water and atmosphere were sent to the center analysis room for timely analysis and monitoring during the sample storage period. the noise was monitored on-site.

2. Methodological standards adopted

2.1Monitoring 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.

Table1 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 solidsGB 11901-1989
3	COD	Water Quality Determination of Chemical Oxygen Demand Dichromate method GB/T 11914-1989
4	Ammonia nitrogen	Water quality ammonia nitrogen determination Nessler Spectrophotometry HJ535-2009
5	Petro	Water Quality Determination of Petroleum and Animal and Vegetable Oils Infrared spectrophotometry HJ 637-2012
6	Total suspended particulates	Ambient air Determination of total suspended particles gravimetric method GB/T 15432-1995
7	Equivalent continuous A sound level	Environmental Noise Monitoring Technical Specifications Urban acoustic environment routine monitoring HJ 640-2012

2.2Evaluation 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)。

3. Monitoring content

3.1Junhua Road Environmental Monitoring during Construction Period

3.1.1Ambient air monitoring

From January to June 2018, the construction of Jun Hua Avenue mainly concentrated on Yangming West Road to the south section of Zhen Jun Shan. The construction of Yangming West Road mainly concentrated on the bridge construction section. During this period, construction was carried out along Junhua Road and Yangming West Road, and the construction sections were dispersed.

Monitoring point: Village near GiFu Road A1Jiaogangling Village, Detention Center Near Junjun South Road and Junhua Road A2 Detention Center.

Monitoring factor: TSP

Jiaogangling Village A1

Detention Center **A2**

Monitoring results and evaluation:

Table 2 Air Quality Environmental Monitoring Results and Evaluation Standards During Construction Period

Monitoring time	Monitoring point	Monitoring factor

		TSP（mg/m³）
2018.06.10	A1	0.031
	A2	0.042
Ambient Air Quality Standard (GB3095-1996) (secondary standard)		0.3

ADB Loan Jiangxi Ji'an Urban Transportation Project Junhua Road during construction January-June 2018, During the construction period, the concentration of total suspended particulates at all sensitive points conforms to the second level of environmental air quality standard (GB3095-1996), which indicates that the construction has little impact on the surrounding environment.

3.1.2 Environmental noise monitoring

From January to June 2018, a monthly monitoring of sensitive points along the Jun Hua Road and construction site was carried out.

Monitoring point: N1 Laoyangjia Village、N2 Jiaogangling Village、N3Ji'an Occupational Health School、N4Ji'an Special Education School、N5 Dujia fang Village、N6 Wuli Village、N7 Shihuling Village、N8 First bid section construction department、N9 Second bid section construction department.

Monitoring factor: Equivalent continuous A sound level.

Laoyangjia Village N1

Jiaogangling Village N2

Ji'an Occupational Health School N3

Ji'an Special Education School N4

Dujia fang Village N5

Wuli Village N6

Shihuling Village N7

First bid section construction department N8

Second bid section construction department N9

Monitoring results and evaluation:

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

	N1		N2		N3		N4		N5		N6		N7		N8		N9	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
2018.01.09	54.3	42.5	52.6	41.7	54.6	42.3	51.3	43.6	49.5	41.8	52.3	40.6			65.5	41.3	64.1	42.1
2018.02.06	42.0	42.0	52.8	38.1	50.2	41.0	51.0	37.5	50.4	38.2	52.0	37.4			63.2	38.8	61.4	39.3
2018.03.17	57.8	43.8	58.9	42.1	56.0	43.2	55.9	42.0	56.0	42.9	54.8	41.3	57.2	41.5	61.5	45.6	63.7	46.6
2018.04.01	56.5	39.5	46.9	41.3	55.5	42.4	52.8	41.8	53.6	40.0	55.0	41.9	54.5	40.6	61.7	38.9	62.9	40.2
2018.05.01	56.2	44.1	55.6	46.6	51.3	45.2	50.7	42.1	57.9	43.8	51.2	40.0	52.1	43.6	64.2	42.5	60.8	39.4
2018.06.10	55.6	49.9	47.6	39.2	55.3	45.8	46.5	38.5	51.7	44.8	49.8	43.6	44.2	39.7	43.8	41.5	47.0	41.4
Evaluation standard	**Day:60 Night:50**														**Day:70 Night:55**			

ADB Loan Jiangxi Ji'an Urban Transportation Project Junhua Road during construction January-June 2018, During the construction period, the noise values at the boundary of each site are in line with the “Emission Standard for Environmental Noise of the Construction Site Boundary” (GB12523-2011). The indicators measured at all sensitive points are in accordance with Zone 2 standards of the “Acoustic Environmental Quality Standard” (GB3096-2008), It shows that the construction has little impact on the surrounding environment.

3.1.3 Surface water monitoring

The construction section of Junhua Avenue mainly spans the water body as the Yudai River， We monitored the water quality of the Yudai River in January, February, March, April, May, and June 2018 for the first phase.

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

Monitoring factors : pH value、 Suspended matter、 COD、 Ammonia nitrogen 、Petro.

50m above water body SW1

100m downstream of the water body SW2

Monitoring results and evaluation:

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

	Monitoring point	Monitoring factors

Monitoring time		pH Value	SS	COD	Ammonia nitrogen	Petro
2018.01.09	50m above water body **SW1**	6.94	8	9	0.640	0.01_L
	100m downstream of the water body **SW2**	6.90	9	14	0.679	0.01_L
2018.02.06	50m above water body **SW1**	6.94	8	9	0.631	0.01_L
	100m downstream of the water body **SW2**	6.90	9	14	0.673	0.01_L
2018.03.16	50m above water body **SW1**	7.53	9	12	0.827	0.01_L
	100m downstream of the water body **SW2**	7.42	7	15	0.846	0.01_L
2018.04.01	50m above water body **SW1**	6.56	9	10	0.620	0.01_L
	100m downstream of the water body **SW2**	6.78	10	15	0.669	0.01_L
2018.05.01	50m above water body **SW1**	6.54	9	13	0.628	0.01_L
	100m downstream of the water body **SW2**	6.57	8	16	0.659	0.01_L
2018.06.10	50m above water body **SW1**	7.48	44	18	0.641	0.01_L
	100m downstream of the water body **SW2**	7.53	49	13	0.667	0.01
Evaluation Standard (Class III)		**6-9**	**≤80**	**≤20**	**≤1.0**	**≤0.05**

ADB loans Jiangxi Ji'an Urban Transportation Project Junhua Road in June 2018 During the construction period, the surface water quality of the Yudai River was relatively stable, The measured indexes all meet the Class III water standard of “Surface Water Environment Quality” (GB3838-2002). It shows that the construction activities have little effect on the water quality of the Yudai River.

3.2Yangming West Road Environmental Monitoring During Construction Period

3.2.1 Ambient air monitoring

From January to June 2018, the construction scope of Yangming West Road is short, environmental air monitoring points are set in the Nan'an village.

Monitoring point:A1Nan'an Village.

Monitoring factor: TSP

A1 Nan'anVillage

Monitoring results and evaluation:

Table 5 Air Quality Environmental Monitoring Results and Evaluation Standards During Construction Period

Monitoring time	Monitoring point	Monitoring factor
		TSP（mg/m³）
2018.06.10	A1 南岸村	0.037
Ambient Air Quality Standard (GB3095-1996) (secondary standard)		0.3

ADB Loan Jiangxi Ji'an Urban Transportation Project Yangming West Road during construction January-June 2018, During the construction period, the concentration of total suspended particulates at all sensitive points conforms to the second level of environmental air quality standard (GB3095-1996), which indicates that the construction has little impact on the surrounding environment.

3.2.2 Environmental noise monitoring

From January 2018 to June, a monthly monitoring of sensitive points along the Yangming West Road and construction site was carried out. During the monitoring

period, construction activities were mainly concentrated on Junhua Road-Dongtang Road and bridge construction sites. Therefore, a noise monitoring site is set up at each of the Junhua Road -Dongtang Roadside and bridge construction sites.

Monitoring point:N1 Dujaifang Village、N2Nan'an village、N3 Dongtou Village、N4JunhuaRoad - Dongtang Roadside、N5 Bridge construction point.

Monitoring factor: Equivalent continuous A sound level.

Dujaifang Village N1

Nan'an village N2

Dongtou Village N3

JunhuaRoad - Dongtang Roadside N4

Bridge construction point N5

Monitoring results and evaluation:

Table 6 Noise monitoring results and evaluation standards during construction period

Monitoring time	Monitoring point	Equivalent continuous A sound level（dB）	
		Day	Night
2018.01.09	N1Dujaifang Village	54.5	41.5
	N2Nan'an village	53.6	43.2
	N3Dongtou Village	51.2	42.8
2018.02.07	N1Dujaifang Village	52.1	41.4
	N2Nan'an village	51.3	42.1
	N3Dongtou Village	52.9	42.0
2018.03.17	N1Dujaifang Village	58.4	45.0
	N2Nan'an village	57.5	44.7
	N3Dongtou Village	55.8	47.2
2018.04.01	N1Dujaifang Village	52.3	40.2
	N2Nan'an village	52.4	43.6
	N3Dongtou Village	53.4	41.6
2018.05.01	N1Dujaifang Village	52.2	41.4
	N2Nan'an village	52.5	43.1

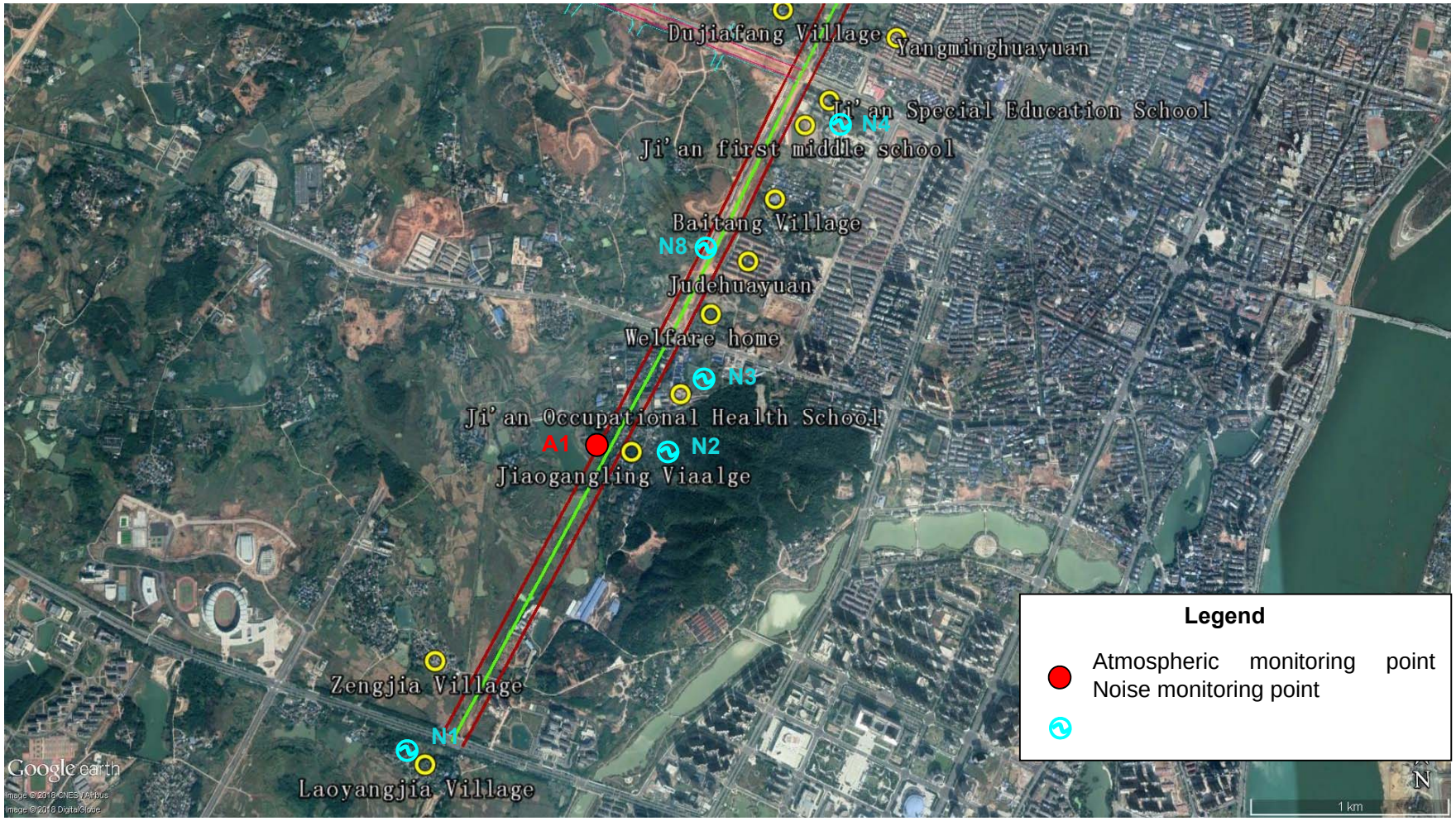
Monitoring time	Monitoring point	Equivalent continuous A sound level（dB）	
		Day	Night
	N3Dongtou Village	55.8	40.3
2018.06.10	N1Dujaifang Village	45.2	41.7
	N2Nan'an village	50.2	45.6
	N3Dongtou Village	47.0	41.0
Evaluation standard（Class 2 area standard）		60	50
2018.01.09	N4JunhuaRoad - Dongtang Roadside	61.8	49.2
	N5 Bridge construction point	56.9	46.5
2018.02.07	N4JunhuaRoad - Dongtang Roadside	59.7	42.7
	N5 Bridge construction point	63.2	42.7
2018.03.17	N4JunhuaRoad - Dongtang Roadside	61.1	42.7
	N5 Bridge construction point	61.5	45.9
2018.04.01	N4JunhuaRoad - Dongtang Roadside	60.0	38.5
	N5 Bridge construction point	61.9	39.4
2018.05.01	N4JunhuaRoad - Dongtang Roadside	65.0	39.0
	N5 Bridge construction point	61.7	38.1
2018.06.10	N4JunhuaRoad - Dongtang Roadside	49.6	430
	N5 Bridge construction point	50.5	43.2
Evaluation standard（Environmental Noise Emission Standards for Construction Sites）		**70**	**55**

ADB Loan Jiangxi Ji'an Urban Transportation Project Yangming West Road during construction January-June 2018, During the construction period, the noise values at the boundary of each site are in line with the “Emission Standard for Environmental Noise of the Construction Site Boundary” (GB12523-2011). The indicators measured at all sensitive points are in accordance with Zone 2 standards of the “Acoustic Environmental Quality Standard” (GB3096-2008), It shows that the construction has little impact on the surrounding environment.

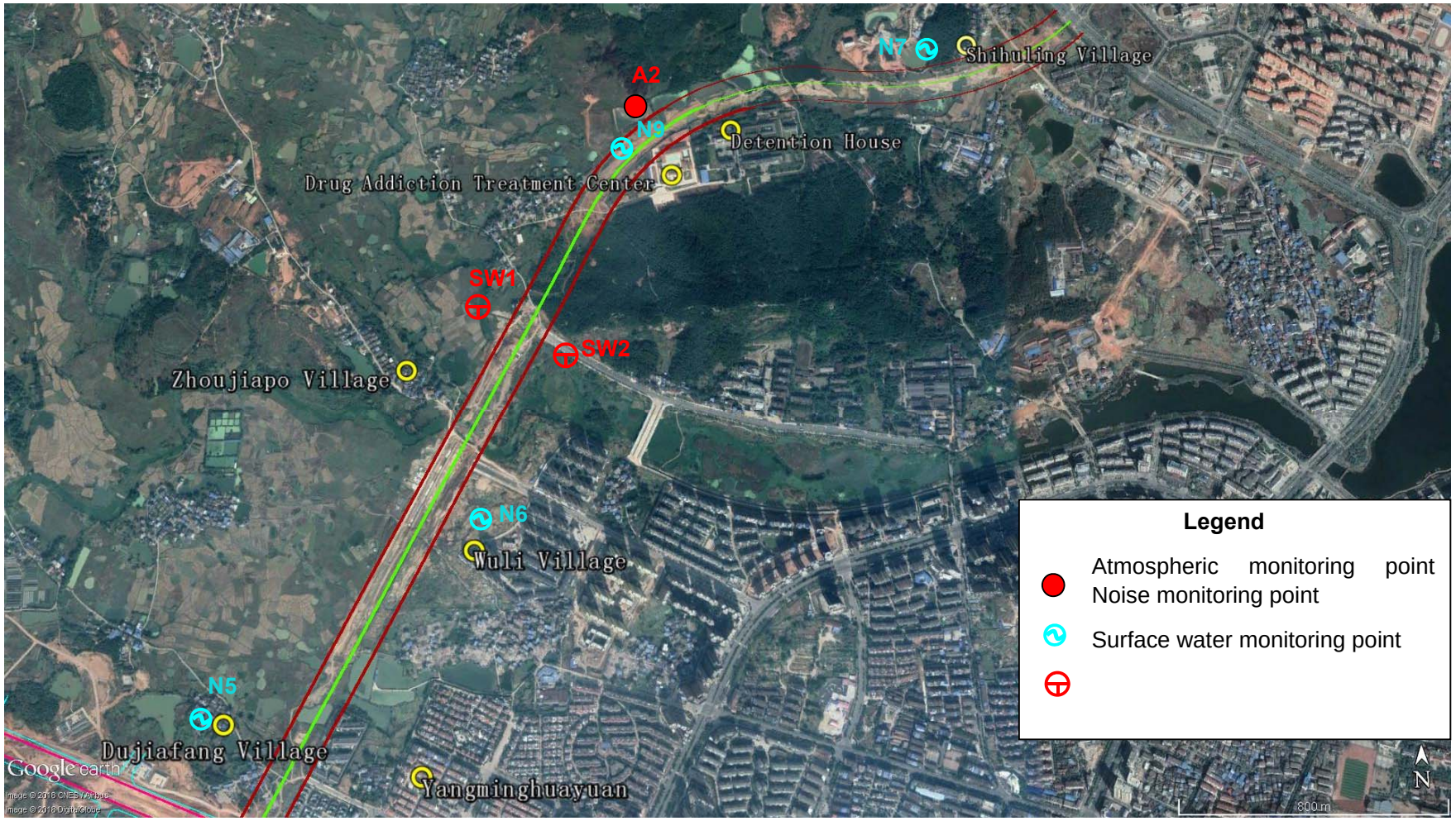
4. Monitoring Evaluation and Recommendations

Through environmental monitoring during construction period, environmental noise of each factory 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). 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.



Environmental monitoring layout of Junhua Road during construction period-1



Environmental monitoring layout of Junhua Road during construction period-2

APPENDIX2 . PUBLIC CONSULTATIONS AND GRIEVANCE REDRESS

Questionnaire results of public consultation results statistics on Construction activity environment impact of this project—by 南宁市政集团有限公司 NanningMunicipal Construction Group Co.,Ltd. North section of Junhua Avenue construction

调查问题 consultation questions	选项内容 Answer Option	作答人数 the number of Answer people	人数 The number ofpeople of response
1，本项目的实施，对水资源和环境产生的负面影响是 By the implementation of this projectconstruction, thenegative impact on water resources and the water environment.	A:影响轻微 Theimpact is slight	14	7
	B: 影响较小 Theimpactisless		5
	C:影响一般 there are someimpact		2
	D: 影响明显 the impact is significant		0
2，本项目的实施，产生的对水环境、河流、湖塘的影响，经施工单位采取治理措施或控制措施后,你认为 By the conduct the relatedmitigation activities, this project construction, you think the impact of this project on water environment, river and lake is	A:影响轻微 Theimpact is slight	14	7
	B: 影响较小 Theimpactisless		6
	C:影响一般 there are someimpact		1
	D: 影响明显 the impact is significant		0
3，对大气环境的影响:如施工机械燃油废气排放,施工引起的扬尘,引起的恶臭气味 By the implementation of this projectconstruction, the negative impact on atmosphere: such as the emission of fuel gas from construction machinery, the dust caused by the construction, the odor caused by the construction	A:影响轻微 Theimpact is slight	14	6
	B: 影响较小 Theimpactisless		5
	C:影响一般 there are someimpact		2
	D: 影响明显 the impact is significant		1

4，对大气环境的以上影响；经施工单位采取的治理措施或控制措施后，你认为 After themitigation measures taken or control measures taken by the construction unit, you think the above impact on the atmospheric environment is	A:影响轻微 Theimpact is slight	14	6
	B: 影响较小 Theimpactisless		5
	C:影响一般 there are someimpact		2
	D: 影响明显 the impact is significant		1
5，对声音环境的影响；如施工活动（土石方挖掘）引起的噪声；施工机械车辆运输引起的噪声 By the implementation of this projectconstruction, the negative impact on sound environment; ascribed by such as noise caused by construction activities (earthwork excavation); noise caused by transportation of construction machinery vehicle	A:影响轻微 Theimpact is slight	14	6
	B: 影响较小 Theimpactisless		5
	C:影响一般 there are someimpact		3
	D: 影响明显 the impact is significant		0
6，对声音环境的以上影响，经施工单位采取的治理措施或控制措施后，你认为 As to the above impact on the sound environment, after the measures taken or control measures taken by the construction unit, you think	A:影响轻微 Theimpact is slight	14	6
	B: 影响较小 Theimpactisless		6
	C:影响一般 there are someimpact		2
	D: 影响明显 the impact is significant		0
7，对施工废弃物处理的环境的影响；如施工废弃土石方，施工废料，施工人员的生活垃圾 By the implementation of this project construction, the negative impact at constructionwaste treatment, ascribed by such as construction waste, construction workers' living waste	A:影响轻微 Theimpact is slight	14	6
	B: 影响较小 Theimpactisless		5
	C:影响一般 there are someimpact		3

	D: 影响明显 the impact is significant		0
8，对施工废弃物的以上影响；经施工单位采取的治理措施或控制措施后，你认为 The above effects on construction waste; after the measures taken or control measures taken by the construction unit, you think	A:影响轻微 Theimpact is slight	14	7
	B: 影响较小 Theimpactisless		3
	C:影响一般 there are someimpact		3
	D: 影响明显 the impact is significant		1
9，施工活动对生态环境的影响；对地表植被（树木，草丛）；野生动物（野兔；蛇等小动物）水生动植物（鱼，青蛙，水草的）的影响 The impact of construction activities on the 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:影响轻微 Theimpact is slight	14	5
	B: 影响较小 Theimpactisless		5
	C:影响一般 there are someimpact		3
	D: 影响明显 the impact is significant		1
10，施工活动对生态环境的以上影响；经施工单位采取的治理措施或控制措施后，你认为 The above impact of construction activities on the ecological environment; after the measures taken or control measures taken by the construction unit, you think	A:影响轻微 Theimpact is slight	14	5
	B: 影响较小 Theimpactisless		5
	C:影响一般 there are someimpact		4
	D: 影响明显 the impact is significant		0

11，本项目的实施产生的正面基础设施和环境效益是（可多选或给出顺序） By the implementation of the project ,the positive impact on the infrastructure facilities and environmental benefits are (multiple-choice or give order)	A, 增加了道路 Increase the road	14	6
	B:减少了交通拥堵 Reduce traffic congestion		8
	C:改善了当地的大气环境 Improve the local atmosphere environment		5
	D:改善了水体周围的湿地的生态环境 Improving the ecological environment of the wetland around the water body		0
12、本项目的实施产生的环境改善的宏观社会效益主要是（可多选或给出顺序） The macro social benefits of environmental improvement arising from the implementation of this project are mainly (multiple or sequential).	A:水环境有了进一步的保障，促进社会经济发展 **The water environment has further safeguards to promote social and economic development.**	14	7

	B:城区居住条件有了进一步的保障 The living conditions in the urban area have been further guaranteed		**6**
	C:改善交通道路布局和交通拥堵治理 Improvement of traffic road layout and traffic congestion control		**7**
	D:促进当城区发展，有利于城区统一规划 Promoting urban development is conducive to unified urban planning.		**7**

Questionnaire results of public consultation results statistics on Construction activity environment impact of this project—by 杭州市政集团有限公司 Hangzhou Municipal Construction Group Co.,Ltd.South section of Junhua Avenue construction

调查问题 consultation questions	选项内容 Answer Option	作答人数 the number of Answer people	人数 The number ofpeople of response
1，本项目的实施，对水资源和环境产生的负面影响是 By the implementation of this projectconstruction, thenegative impact on water resources and the water environment.	A:影响轻微 Theimpact is slight		**5**
	B：影响较小 Theimpactisless		**5**
	C:影响一般 there are someimpact		**2**

	D: 影响明显 the impact is significant		**0**
2，本项目的实施，产生的对水环境、河流、湖塘的影响，经施工单位采取治理措施或控制措施后,你认为 By the conduct the relatedmitigation activities, this project construction, you think the impact of this project on water environment, river and lake is	A:影响轻微 Theimpact is slight	**12**	**5**
	B: 影响较小 Theimpactisless		**4**
	C:影响一般 there are some		**1**
	D: 影响明显 the impact is significant		**0**
3，对大气环境的影响:如施工机械燃油废气排放,施工引起的扬尘,引起的恶臭气味 By the implementation of this projectconstruction, the negative impact on atmosphere: such as the emission of fuel gas from construction machinery, the dust caused by the construction, the odor caused by the construction	A:影响轻微 Theimpact is slight	**12**	**5**
	B: 影响较小 Theimpactisless		**4**
	C:影响一般 there are someimpact		**3**
	D: 影响明显 the impact is significant		**0**
4，对大气环境的以上影响；经施工单位采取的治理措施或控制措施后，你认为 After themitigation measures taken or control measures taken by the construction unit, you think the above impact on the atmospheric environment is	A:影响轻微 Theimpact is slight	**12**	**6**
	B: 影响较小 Theimpactisless		**3**
	C:影响一般 there are someimpact		**3**
	D: 影响明显 the impact is significant		**0**
5，对声音环境的影响；如施工活动（土石方挖掘）引起的噪声；施工机械车辆运输引起的噪声 By the implementation of this projectconstruction, the negative impact on sound environment; ascribed by such as noise caused by construction activities (earthwork excavation); noise caused by transportation of construction machinery vehicle	A:影响轻微 Theimpact is slight	**12**	**5**
	B: 影响较小 Theimpactisless		**5**
	C:影响一般 there are someimpact		**2**

	D: 影响明显 the impact is significant		0
6，对声音环境的以上影响，经施工单位采取的治理措施或控制措施后，你认为 As to the above impact on the sound environment, after the measures taken or control measures taken by the construction unit, you think	A:影响轻微 Theimpact is slight	12	5
	B: 影响较小 Theimpactisless		6
	C:影响一般 there are someimpact		1
	D: 影响明显 the impact is significant		0
7，对施工废弃物处理的环境的影响；如施工废弃土石方，施工废料，施工人员的生活垃圾 By the implementation of this project construction, the negative impact at constructionwaste treatment, ascribed by such as construction waste, construction workers' living waste	A:影响轻微 Theimpact is slight	12	5
	B: 影响较小 Theimpactisless		6
	C:影响一般 there are someimpact		1
	D: 影响明显 the impact is significant		0
8，对施工废弃物的以上影响；经施工单位采取的治理措施或控制措施后，你认为 The above effects on construction waste; after the measures taken or control measures taken by the construction unit, you think	A:影响轻微 Theimpact is slight	12	6
	B: 影响较小 Theimpactisless		4
	C:影响一般 there are someimpact		2
	D: 影响明显 the impact is significant		0

9, 施工活动对生态环境的影响；对地表植被（树木，草丛）；野生动物（野兔；蛇等小动物）水生动植物（鱼，青蛙，水草的）的影响 The impact of construction activities on the 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:影响轻微 Theimpact is slight	12	5
	B: 影响较小 Theimpactisless		5
	C:影响一般 there are someimpact		2
	D: 影响明显 the impact is significant		0
10, 施工活动对生态环境的以上影响；经施工单位采取的治理措施或控制措施后，你认为 The above impact of construction activities on the ecological environment; after the measures taken or control measures taken by the construction unit, you think	A:影响轻微 Theimpact is slight	12	5
	B: 影响较小 Theimpactisless		5
	C:影响一般 there are someimpact		2
	D: 影响明显 the impact is significant		0
11, 本项目的实施产生的正面基础设施和环境效益是（可多选或给出顺序） By the implementation of the project ,the positive impact on the infrastructure facilities and environmental benefits are (multiple-choice or give order)	A,增加了道路 Increase the road	12	11
	B:减少了交通拥堵 Reduce traffic congestion		12

	C:改善了当地的大气环境 Improve the local atmosphere environment		**0**
	D:改善了水体周围的湿地的生态环境 Improving the ecological environment of the wetland around the water body		**0**
12、本项目的实施产生的环境改善的宏观社会效益主要是（可多选或给出顺序） The macro social benefits of environmental improvement arising from the implementation of this project are mainly (multiple or sequential).	A:水环境有了进一步的保障，促进社会经济发展 **The water environment has further safeguards to promote social and economic development.**	**10**	**8**
	B:城区居住条件有了进一步的保障 The living conditions in the urban area have been further guaranteed		**6**
	C:改善交通道路布局和交通拥堵治理 Improvement of traffic road layout and traffic congestion control		**11**

	D:促进当城区发展，有利于城区统一规划 Promoting urban development is conducive to unified urban planning.		**11**

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.				

GHD CLIENTS PEOPLE PERFORMANCE