



Completion Report

Project Number: 44007-013
Loan Number: 2915
Grant Number: 0388
November 2021

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

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Asian Development Bank

CURRENCY EQUIVALENTS

Currency unit – yuan (CNY)

		At Appraisal (6 September 2012)	At Project Completion (31 December 2019)
CNY1.00	=	\$0.15747	\$0.14312
\$1.00	=	CNY6.35030	CNY6.98690

ABBREVIATIONS

ADB	–	Asian Development Bank
BRT	–	bus rapid transit
CNG	–	compressed natural gas
CPS	–	country partnership strategy
EA	–	executing agency
EIRR	–	economic internal rate of return
EMP	–	environment management plan
FIDC	–	Fuzhou Investment and Development Company
FIRR	–	financial internal rate of return
FMG	–	Fuzhou Municipality Government
GAP	–	gender action plan
GEF	–	Global Environment Facility
IA	–	implementing agency
LAR	–	land acquisition and resettlement
NCB	–	national competitive bidding
O&M	–	operation and maintenance
PMC	–	project management consultants
PMO	–	project management office
PRC	–	People's Republic of China

WEIGHTS AND MEASURES

km	–	kilometer
m ²	–	square meter

NOTES

- (i) The fiscal year (FY) of the Government of the People's Republic of China ends on 31 December. "FY" before a calendar year denotes the year in which the fiscal year ends, e.g., FY2020 ends on 31 December 2020.
- (ii) In this report, "\$" refers to United States dollars.

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BASIC DATA

A. Loan/Grant Identification

1.	Country	People's Republic of China
2.	Loan number and financing source	2915, ordinary capital resources (OCR) 0388, Global Environment Facility (GEF)
3.	Project title	Jiangxi Fuzhou Urban Integrated Infrastructure Improvement Project
4.	Borrower	People's Republic of China
5.	Executing agency	Fuzhou Municipal Government
6.	Implementing agency	Fuzhou Investment and Development Company
7.	Amount of loan/grant	\$100 million loan, \$2.55 million grant
8.	Financing modality	Project loan/grant (additional financing)

B. Loan/Grant Data

1.	Appraisal	
	– Date started	7 May 2012
	– Date completed	18 May 2012
2.	Loan negotiations	
	– Date started	5 September 2012
	– Date completed	6 September 2012
3.	Date of Board/grant approval	12 October 2012/14 May 2014
4.	Date of loan/grant agreement	19 March 2013/4 June 2015
5.	Date of loan effectiveness	
	– In loan agreement	17 June 2013
	– Actual	24 June 2013
	– Number of extensions	0
	Date of grant effectiveness	
	– In grant agreement	2 September 2015
	– Actual	9 July 2015
	– Number of extensions	0
6.	Project completion date	
	– Appraisal	31 December 2017
	– Actual	31 December 2019
7.	Loan closing date	
	– In loan agreement	30 June 2018
	– Actual	31 December 2019
	– Number of extensions	1
	Grant closing date	
	– In grant agreement	30 June 2018
	– Actual	31 December 2019
	– Number of extensions	1
8.	Financial closing date	
	– Actual (loan)	28 December 2020
	– Actual (grant)	28 December 2020
9.	Terms of loan	
	– Interest rate	London interbank offered rate (LIBOR)- based lending facility, 0.60% and maturity premium of 0.10%

- Maturity (number of years) 25
- Grace period (number of years) 5
- 10. Terms of relending (if any)
 - Interest rate LIBOR-based lending facility, 0.60% and maturity premium of 0.10%
 - Maturity (number of years) 25
 - Grace period (number of years) 5
 - Second-step borrower Jiangxi Provincial Government
 - Third-step borrower Fuzhou Municipal Government

11. Disbursements

a. Dates

Loan

Initial Disbursement 2 September 2014	Final Disbursement 6 April 2020	Time Interval 67 months
Effective Date 24 June 2013	Actual Closing Date 28 December 2020	Time Interval 90 months

Grant

Initial Disbursement 21 October 2019	Final Disbursement 31 March 2020	Time Interval 5 months
Effective Date 9 July 2015	Actual Closing Date 28 December 2020	Time Interval 66 months

b. Amount (\$) – Loan

Category	Original Allocation (1)	Increased during Implementation (2)	Canceled during Implementation (3)	Last Revised Allocation^a (4 = 1 + 2 – 3)	Amount Disbursed (5)	Undisbursed Balance^b (6 = 4 – 5)
1. Works	86,120,000	-10,511,000		75,609,000	64,277,742	11,331,258
1A. Station access roads	41,627,000	-22,234,000		19,393,000	17,330,116	2,062,884
1B. Urban transport hub	7,309,000	-134,000		7,175,000	5,707,612	1,467,388
1C. Bus rapid transit	16,318,000	18,658,000		34,976,000	30,257,180	4,718,820
1D. Fenggang River greenway	20,866,000	-6,801,000		14,065,000	10,982,834	3,082,166
2. Equipment	9,140,000	9,832,000		18,972,000	21,805,289	-2,833,289
3. Institutional strengthening and capacity building	1,440,000	679,000		2,119,000	1,336,979	782,021
4. Interest and commitment charges	3,300,000			3,300,000	3,300,000	
Total	100,000,000	0	0	100,000,000	90,720,010	9,279,990

^a The last loan proceeds reallocation was approved on 29 October 2018.

^b The undisbursed amount was canceled at loan closing.

c. Amount (\$) – Grant

Category	Original Allocation (1)	Increased during Implementation (2)	Canceled during Implementation (3)	Last Revised Allocation* (4 = 1 + 2 – 3)	Amount Disbursed (5)	Undisbursed Balance** (6 = 4 – 5)
1. Equipment	2,000,000	325,300		2,325,300	2,269,790	55,510
2. Consulting Services	546,300	-325,300		221,000	216,053	4,947
Total	2,546,300	0	0	2,546,300	2,485,843	60,457

C. Project Data

1. Project cost (\$ million)

Cost	Appraisal Estimate	Actual
Foreign exchange cost	24.25	44.51
Local currency cost	202.21	155.08
Total	226.46	199.59

2. Financing plan (\$ million)

Cost	Appraisal Estimate	Actual
Implementation cost		
Borrower financed	126.46	104.22
ADB loan financed	96.70	87.42
GEF financed ^a	0.00	2.49
Total implementation cost	223.16	194.13
IDC and other financial charges		
Borrower financed	0.00	2.16
ADB loan financed	3.30	3.30
GEF financed	0.00	0.00
Total IDC and other financial charges	3.30	5.46

^a GEF grant was additional financing.

ADB = Asian Development Bank, GEF = Global Environment Facility, IDC = interest during construction.

3. Cost breakdown by project component (\$ million)

Item	Appraisal Estimate	Actual
A. Base cost		
1. Station access road	49.35	49.03
2. Urban transport hub	8.67	8.05
3. Bus rapid transit	19.34	36.15
4. Fenggang River greenway	24.73	15.43
5. Equipment	9.14	37.19
6. Land acquisition and resettlement	66.39	41.93
7. Institutional strengthening and capacity building	1.44	1.55
8. Project preparation and implementation	11.19	4.79
Subtotal (A)	190.25	194.13
B. Contingencies	32.91	0.00
C. Financial charges during implementation	3.30	5.46
Total (A + B + C)	226.46	199.59

4. Project Schedule

Item	Appraisal Estimate	Actual
A. Civil works		
Access roads		
Procurement	Q4 2012–Q1 2014	Q1 2013–Q3 2014

Item	Appraisal Estimate	Actual
Construction	Q2 2013–Q4 2015	Q2 2013–Q4 2019
Bus rapid transit		
Procurement	Q1 2013–Q2 2013	Q4 2016–Q2 2017
Construction	Q3 2013–Q3 2015	Q3 2017–Q1 2019
Public transport terminal and hub		
Procurement	Q2 2013–Q3 2013	Q1 2016–Q2 2016
Construction	Q4 2013–Q3 2015	Q2 2016–Q1 2019
Fenggang River improvement		
Procurement	Q2 2013–Q3 2015	Q3 2014–Q1 2015
Construction	Q4 2013–Q4 2017	Q2 2015–Q1 2019
B. Equipment		
Procurement	Q2 2013–Q1 2015	Q3 2017–Q3 2019
Delivery and installation	Q4 2013–Q4 2016	Q4 2017–Q4 2019
C. Consulting service		
Recruitment	Q4 2012–Q3 2013	Q2 2013–Q1 2015
Implementation	Q2 2013–Q4 2017	Q1 2015–Q4 2019

Q = quarter.

5. Project performance report ratings

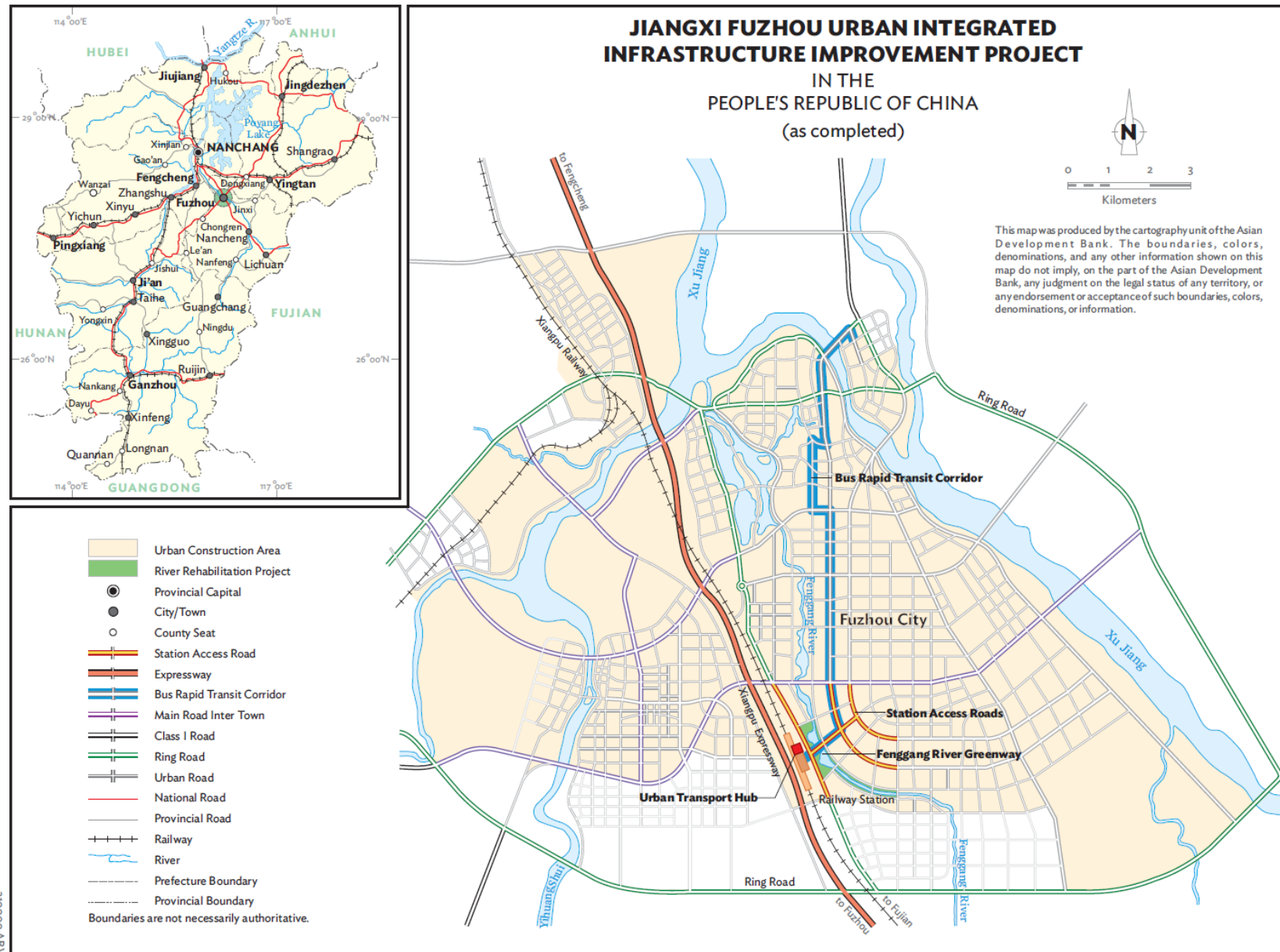
Implementation Period	Single Project Rating
24 June 2013–30 September 2013	On track
1 October 2013–31 December 2013	Actual problem
1 January 2014–31 March 2014	On track
1 April 2014–30 June 2014	Potential problem
1 July 2014–30 September 2014	On track
1 October 2014–31 December 2014	Potential problem
1 January 2015–30 September 2015	On track
1 October 2015–31 December 2015	Potential problem
1 January 2016–31 March 2016	On track
1 April 2016–31 December 2016	Potential problem
1 January 2017–30 June 2017	Actual problem
1 July 2017–31 December 2020	On track

D. Data on Asian Development Bank Missions

Name of Mission	Date	No. of Persons	No. of Person-Days	Specialization of Members
Fact finding	8–18 May 2012	13	156	a, c, d, e, i, j, k, m, m, n, n, n
Inception ^a	8–17 May 2013	5	25	f, j, k, n, o
Review 1	9–11 September 2013	2	6	i, j
Special loan consultation	26–28 February 2014	1	3	b
Review 2	11–15 August 2014	7	35	d, f, j, e, j, m, n
Review 3	8–11 June 2015	5	16	d, e, i, n, n
Special loan administration ^a	26–30 October 2015	2	10	d, b,
Review 4	24–26 November 2015	2	6	i, n
Loan consultation	2–3 March 2016	3	6	a, n, n
Midterm review	23–30 May 2016	5	40	d, e, i, m, n
Review /handover	7–9 November 2017	6	18	d, d, e, g, l, n
Review 6	28 May–1 June 2018	4	11	d, e, g, m
Review 7	5–7 November 2018	2	4	d, g
Review 8	5–7 November 2019	1	4	g
Review 9	16–17 November 2020	6	12	d, e, g, h, l, m
Completion review	6–10 September 2021	5	25	d, e, i, k, l

^a Mission combined with another project.

a = director, b = unit head, c = counsel, d = project analyst, e = environment officer, f = safeguards specialist, g = program/project officer, h = staff consultant, i = consultant, j = economist, k = senior portfolio management officer, l = resettlement officer, m = social specialist, n = transport specialist/economist, o = associate operation officer.



I. PROJECT DESCRIPTION

1. Fuzhou is a prefectural level city in Jiangxi Province of the People's Republic of China (PRC). The economic development of Fuzhou Municipality lagged compared with nearby areas and was relatively poor. At project appraisal, the new Xiangpu High-Speed Railway was being constructed, passing through Fuzhou City.¹ With the opening of the railway, Fuzhou would be better connected to the fast-growing and relatively prosperous cities in the eastern PRC. The opening of the railway would also offer significant opportunities to improve the economy in the region. The new railway station was about 6 kilometers (km) south of the city center and 2 km from the newly developed city area of Fuzhou. An urban transport project was proposed to better link the railway station and surrounding areas to Fuzhou City with well-designed multimodal transport infrastructure and integrated public transport services. This linkage would reduce transport costs, improve the efficiency and attractiveness of the public transport system, expand travel opportunities and regional accessibility to jobs and services, promote sustainable urbanization and poverty reduction, and encourage a shift to modes of travel with lower and even zero emissions. The project would contribute to inclusive growth and environmentally sustainable development in Fuzhou by improving the efficiency and sustainability of urban public transport.

2. The Asian Development Bank (ADB) approved a loan of \$100 million on 14 May 2014 for the Jiangxi Fuzhou Urban Integrated Infrastructure Improvement Project.² At appraisal, the project consisted of (i) a 12.2 km bus rapid transit (BRT) system, (ii) an urban transport hub near the new railway station, (iii) riverbank improvement and greenway development, (iv) 10 km of station access roads, and (v) institutional strengthening and capacity building. For expanding and enhancing the project outputs, the Global Environment Facility (GEF) endorsed a \$2.55 million grant on 10 September 2013, to reduce the energy consumption and carbon intensity of public transport in Fuzhou, through three activities: (i) reducing the greenhouse gas intensity of bus operations, (ii) upgrading BRT buses to use compressed natural gas (CNG), and (iii) providing CNG buses for the BRT feeder services.

II. DESIGN AND IMPLEMENTATION

A. Project Design and Formulation

3. At appraisal, sustainably supporting rapid urbanization was a key development challenge for the government, as 300 million people were expected to move to cities by 2020. Such mass migration would require a major expansion of second-tier cities such as Fuzhou to relieve pressure on existing urban centers and provide economic opportunities for vast numbers of low-income people previously engaged in agriculture. Major investments in urban infrastructure, transport, and related services would be necessary to accommodate city development and support sustainable urbanization and inclusive growth.

4. The project aligned with ADB's assistance to the PRC under the country partnership strategy (CPS),³ focusing on (i) inclusive growth and balanced development by promoting sustainable urbanization, and (ii) resource efficiency and environmental sustainability by promoting efficient and sustainable urban transport. Strengthening public transport and multimodal integration aligns directly with ADB's sustainable transport initiative. The project also

¹ The Xiangpu High-Speed Railway started construction in November 2007 and was completed and started operation in September 2013.

² ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Jiangxi Fuzhou Urban Integrated Infrastructure Improvement Project*. Manila.

³ ADB. 2012. *Country Partnership Strategy: People's Republic of China, 2011–2015*. Manila.

aligned with the priorities of the government, which was promoting the development of multimodal passenger transport hubs under ongoing policy advisory technical assistance from ADB.⁴ The project was selected to take advantage of the opportunity presented by the impending opening of the high-speed railway and to seize an early opportunity to establish a model for urban transport and development integration that could be replicated in other cities.

5. To design and formulate the project, ADB provided project preparatory technical assistance.⁵ The technical assistance produced a mutually agreeable project design and scope, schedule, and implementation plan. Due diligence was conducted for technical, economic and financial, governance, poverty and social safeguards. Lessons of the first BRT project in the PRC (the Lanzhou Sustainable Urban Transport Project) were incorporated in the project design. Training was provided to local officials in BRT design, implementation, and operation. Major risks of the project were identified, and related mitigation measures were incorporated in the project. The project design and formulation were generally adequate to achieve the intended project outcomes and impacts. The financial modality was properly selected for the project.

6. During and after implementation, the project was found to be relevant to the government's objectives and policies, as well as to ADB's country strategy, in its design and formulation (paras. 35 to 37). During implementation, the project scope was revised according to actual needs and fund availability (para. 13). The additional components financed by the GEF grant enhanced the project outputs and outcomes. At completion, the results showed that the project effectively contributed to meeting the government's objectives and ADB's country strategy, as envisaged. The project design and monitoring framework and results is in Appendix 1.

B. Project Outputs

7. At appraisal, it was envisaged that the project would include (i) a BRT system, (ii) an urban transport hub, (iii) riverbank improvement and greenway development, (iv) station access roads, and (v) institutional strengthening and capacity building. Under the additional financing, the project outputs were expanded to include (i) reducing the greenhouse gas intensity of bus operations, (ii) upgrading BRT buses to use CNG, and (iii) providing CNG buses for BRT feeder services.

8. **BRT system.** A BRT system of 12.5 km was constructed and opened to traffic. It runs from the north to the south of Fuzhou City, with 19 stations (14 island-style, 3 paired-roadside style, and 2 main stations at the ends). The BRT system includes intelligent dispatching, ticketing, security doors, and passenger guidance systems. In total 133 electric BRT buses were purchased and are operated, 104 10.5-meter buses financed by the loan and 29 12-meter buses financed by the grant. BRT bus maintenance and charging equipment were also procured under the project.

9. **Urban transport hub.** An urban transport hub near the new railway station was constructed and opened to traffic. It includes (i) a bus company headquarters building including offices and a control center (three floors of 6,562 square meters [m²]); (ii) a bus inspection and maintenance workshop with equipment (1,472 m²), (iii) bus parking and charging areas (about 43,000 m²); (iv) bus terminals with four bus bays and BRT ticketing facilities; (v) public parking lots for cars, motorcycles, bicycles; and (vi) pedestrian walkways linking the bus terminals with

⁴ ADB. 2011. *Technical Assistance to the People's Republic of China for Developing Multimodal Passenger Transport Hubs*. Manila.

⁵ ADB. 2010. *Technical Assistance to the People's Republic of China for Jiangxi Fuzhou Urban Integrated Infrastructure Project*. Manila.

the railway station.

10. **Riverbank improvement and greenway development.** A park was constructed near the railway station and along the Fenggang River with an area of 10.7 million m², including (i) a 4.5-km embankment with strengthened flood control, (ii) a square and roads covering 84,000 m², and (iii) green areas covering 960,000 m². The park roads have lighting facilities and rest areas. A 303-meter bicycle lane was constructed in the park, which links the railway station with the city center.

11. **Station access roads.** Four sections of station access roads totaling 10.2 km were constructed, with a red line width of 55–70 meters, including six carriage lanes for motorized vehicles, pedestrians and nonmotorized vehicles, as well as underground utilities and a greenbelt. About 496 meters of road in front of the railway station was constructed as an underground tunnel.

12. **Capacity development.** Three consulting firms were engaged for project management and BRT operation support. They provided substantial training to the government staff and public bus operators, focusing on (i) project management and implementation, (ii) institutional strengthening in traffic management and road safety, and (iii) BRT operation and management. Three individual consultants were also engaged to carry out environmental and social monitoring.

13. During implementation, the project scope had the following changes.

- (i) BRT alignment. Part of the BRT alignment was shifted from the originally planned location of Gandong Road to the parallel Yuming Road, about 400 meters to the west of the original alignment, avoiding traffic congestion in the city center.⁶ The design of the BRT line and stations was also revised.
- (ii) BRT buses. The number of BRT buses was increased from 51 units at appraisal to 133 units, in accordance with the actual needs and the availability of funds. The type of BRT buses was changed from CNG- to electric powered.⁷
- (iii) BRT equipment. Additional BRT bus maintenance equipment and 40 units of electric bus charging equipment were procured.
- (iv) Access roads. The sections and lengths of the access roads were adjusted slightly during implementation to meet the actual needs. Instead of a standard level intersection, a tunnel/underpass was added to the intersection of Waihuan Road at the railway station.⁸
- (v) Fenggang River greenway. About 309,000 m² was removed from the original scope, which reduced the project cost and the requirement for land acquisition and resettlement.⁹
- (vi) Underground utility duct. An underground utility duct of 5.5 km along the BRT corridor was added to the project scope and constructed using the ADB funds.

C. Project Costs and Financing

14. At appraisal, the total project cost was estimated at \$226.5 million, including base costs,

⁶ The original BRT alignment was on Gandong Road, which was only 33 meters wide and thus would have constrained the sidewalks and bicycle lanes to an unacceptable degree.

⁷ The central government was promoting to use the electric buses and requesting that all the buses for public transport should be replaced to electric by 2020.

⁸ Because of the urgent need for the tunnel/underpass, the government financed it in full as an associated facility of the project.

⁹ The reduced greenway area was developed by another domestically financed project in Fuzhou.

contingencies, and financial charges during implementation. With the additional financing (the GEF grant), the total project cost increased to \$229.0 million. At project completion, the total project cost was \$199.59 million equivalent, about 11.9% lower than the estimate at appraisal. The decrease in the actual costs consisted mainly of \$24.5 million (36.9%) for the land acquisition and resettlement and \$9.3 million (37.6%) for the Fenggang River greenway development. Meanwhile, increases in the actual costs consisted mainly of \$28.1 million (306.9%) for the equipment and \$16.8 million (86.8%) for the BRT line construction. The increased costs were fully covered by the project contingencies. Appendix 2 compares the details of the project costs at appraisal and at completion.

15. The original financing plan at appraisal included a \$100 million loan from ADB and \$126.5 million equivalent in counterpart funds from the government, for 44.2% and 55.8% of the total project cost, respectively. After the addition of the grant, \$90.7 million of the ADB loan (45.5% of the actual project cost) and \$2.5 million of the GEF grant (1.2% of the actual project cost) were disbursed. Government counterpart funds covered the balance of \$106.4 million (53.3% of the project cost). A detailed comparison of the project financing at appraisal and completion is in Appendix 3.

D. Disbursements

16. Loan proceeds were disbursed from 2 September 2014 to 6 April 2020. The loan closing date was 31 December 2019. The last transaction for refunding the outstanding advance balance was made on 28 December 2020. Liquidating the advance account¹⁰ took 12 months¹¹ after the loan closing date. Out of the loan amount of \$100 million approved, \$90,720,010.40 was disbursed and \$9,279,989.60 was canceled. ADB made the initial advance payment of \$4 million to the advance account on 2 September 2014, for which the Jiangxi Provincial Finance Department made the final liquidation (\$9.11 million) on 4 December 2020.

17. ADB disbursed the grant from 21 October 2019 to 31 March 2020. The grant closing date was 31 December 2019. The last transaction was made on 28 December 2020, to refund the outstanding grant advance account. Liquidating the grant advance account took 12 months¹² after the grant closing date of 31 December 2019. Out of the total approved grant amount of \$2,546,300, \$2,485,843.48 was disbursed. A total of \$216,053 of the grant proceeds went toward consulting services and \$2,269,790.48 was for equipment. The balance of \$60,456.52 was canceled.

18. Disbursements were made using the advance account and direct payment procedures. Advance accounts were established for the loan and the grant. To facilitate disbursement needs, the ceiling of the account for the loan was raised from \$4 million to \$10 million in June 2015. The advance accounts proved useful and facilitated effective project disbursements. ADB's disbursement process was efficient. Appendix 4 shows the projected and actual disbursements.

E. Project Schedule

19. At appraisal, it was envisaged that the project would be implemented over a period of 5

¹⁰ Reference to "advance account" refers to what was formerly called "imprest account."

¹¹ As a consequence of the prolonged spring festival holiday (24 January to 9 February 2020) and the nationwide lockdown enforced thereafter because of the coronavirus disease (COVID-19) pandemic, some contractors failed to submit payment claims on time. Thus, the winding-up period was extended by 4 months, from 30 April 2020 to 31 August 2020.

¹² The Jiangxi Provincial Finance Department made the final liquidation of the grant together with the loan.

years and 2 months, with completion on 31 December 2017. Under ADB's advance contracting and retroactive financing procedure, the recruitment for the project management consultants (PMC) started in the third quarter of 2013. In September 2013, while the detailed design was being prepared, the Fuzhou Municipal Government (FMG) raised concerns about the BRT alignment which might have led to construction and operation difficulties including potential congestion during both construction and BRT operation. Meanwhile, it was found that the feasibility study for some access roads failed to follow the government's approval procedures.¹³ In addition, the lack of success of BRT in the capital city of Jiangxi Province (Nanchang) in its early operation discouraged the FMG and it planned to cancel the BRT component. To catch up with the project schedule, ADB made various efforts including providing additional consulting services to adjust the implementation schedule to align with time-bound action plans and study tours for the FMG to the successful BRT projects in Lanzhou and Yichang. The revised schedule advanced the implementation of other project components while the BRT design was being improved. The project progressed with completion of land acquisition in August 2014. Then all civil works contracts for the access roads were awarded. However, construction slowed down because of the prolonged rainy season and delayed resettlement activities. The contract for the Fenggang River greenway development was awarded in February 2015. The contract for the transport hub was awarded in May 2016. After discussions on realignment, viability, and safeguards, the revised design of the BRT was approved in early 2017. The contract for the BRT construction was awarded in June 2017, a delay of 4 years from the original schedule.

20. As a result of the delay, project implementation was not completed as scheduled. ADB approved an extension of the loan closing date by 18 months. As of November 2017, three civil works contracts for the access roads had been completed; the transport hub was about 80% completed; the greenway development was about 90% completed; the BRT line and station construction was only about 30% completed; and the procurement of equipment (BRT facilities and buses) was not started. To facilitate project implementation, some civil works contracts for the access roads and the greenway development were extended. Through joint efforts, the transport hub and the greenway were fully completed in January 2019; the BRT system was completed and put in operation in March 2019; all access roads were completed before the end of 2019; and all BRT facilities and buses were delivered before November 2019.

21. The actual implementation schedule compared with the schedule at appraisal is in Appendix 6.

F. Implementation Arrangements

22. The FMG was the executing agency (EA) for the project. A Fuzhou Municipal Project Leading Group, chaired by the vice mayor of the FMG with heads of all municipal agencies concerned as members, was established in March 2009 to provide overall leadership, policy guidance, and institutional coordination as required for project preparation and implementation. The Fuzhou Investment Development Company (FIDC) was the implementing agency (IA) carrying out day-to-day project implementation and providing coordination support for project management. A project management office (PMO) was established under the FIDC to assist the Fuzhou Municipal Project Leading Group with policy guidance, institutional coordination and overall monitoring of project progress and implementation in accordance with the loan and grant agreements, as well as to manage the project.

¹³ In March 2013, the executing agency started construction of one section of Waihuan Road using counterpart financing. However, that section included an underpass, at a cost of CNY80 million, which was not in the approved feasibility study report. The provincial authorities did not approve the revised feasibility study report.

23. The PMO had six functional divisions, including planning and statistics, engineering and quality control, environment and resettlement safeguards, financial management and audits, and office administration. It was led by a director with the assistance of a deputy director and 11 staff members. The sectoral agencies of the municipality, including the Municipal Transport Bureau, the Fuzhou Public Transport Company, the Bureau of Parks and Woods of Fuzhou, also provided technical support to the PMO upon request. A group of consultants was engaged for project management, environment and social monitoring, institutional and capacity development, to strengthen the capacity of the PMO. Early on, the PMO suffered from the absence of qualified and specialized talent in transport and resettlement. The PMO timely engaged necessary human resources and further strengthened the capacity of its staff through the relevant training programs provided by ADB and the consultants. The study tours of the PMO staff to Tianshui and Yichang to learn best practices in BRT and urban transport development in the country also benefited the institutional capacity of the PMO. An updated organization chart for project implementation is in Appendix 7.

G. Consultant Recruitment and Procurement

24. All consultants were engaged in accordance with ADB's Guidelines on the Use of Consultants (2010, as amended from time to time). As agreed at appraisal, a PMC was recruited using quality- and cost-based selection procedures. Under advance procurement, the recruitment started in mid-2013 but was delayed by personnel changes at the implementing agency. Eventually, the contract was awarded in February 2015. The wetland monitoring expert, originally part of the PMC team, was recruited separately as an individual consultant and fully financed by the government. In addition, three individual consultants were recruited for safeguards monitoring (environment, resettlement, and gender). Financed by the GEF grant, another two consulting firms were engaged for (i) BRT development (supervision) and capacity building, and (ii) training of BRT operating and managerial staff. The services of the three individuals and three firms were completed in December 2019.

25. All procurement of works and goods under ADB financing were undertaken in accordance with ADB's Procurement Guidelines (2010, as amended from time to time). For civil works, five contracts for station access roads were through national competitive bidding (NCB), as were one contract for the urban transport hub and one contract for the riverbank improvement and greenway development; one contract for the BRT system was procured through international competitive bidding. One of the contracts for station access roads (C1.1) was procured through domestic procedures using counterpart financing for urgent construction needs. The goods and equipment were procured through international competitive bidding in 11 contracts, including 4 for the BRT control and passenger systems, 3 for the BRT buses (one of them financed by the GEF grant), and 4 for the maintenance and charging equipment. The list of contracts financed by ADB is in Appendix 8.

H. Gender Equity

26. The project was classified as effective for gender mainstreaming. A gender action plan (GAP) was prepared with 12 activities and 4 quantitative targets. The implementation of the GAP contributed to ensuring women's equitable participation in project related public consultation, incorporating gender-responsive physical design features in the design of the urban transport infrastructure, promoting greater employment opportunities for women, and building institutional capacity for gender mainstreaming in the executing and implementing agencies. The strategic benefits achieved for women are increased engagement and capacity in project consultations and

participation, enhanced economic empowerment, and human development enhancement. As soon as the BRT system was in operation in 2019, the Fuzhou Municipal Bus Company set up an all-women team of drivers to take charge of the operation of the BRT bus line, which was a transformative move for the company and a positive sign of recognition of women's potential and contribution, and of heightened respect for women from the company and from society. A total of 34 women were selected from the existing and newly recruited drivers, based on merit, to manage and drive 17 of the BRT buses, fully in charge of the operation and maintenance of that part of the fleet. Their proactive engagement in operating the fleet has significantly strengthened gender equity in the entire sector.

27. Other important gender equality achievements include the following: (i) 19 BRT stations were equipped with proper lighting, security cameras, and help buttons to ensure the safety of women and other people with special needs; (ii) 416 women (48.5% of the construction workforce) worked during project construction, of which 166 (39.90% of the women) were in skilled jobs; 58 new jobs (48.7% of the total) were taken by women during project operation; (iii) 45% of the female staff from the executing and implementing agencies and the PMO were trained on gender equality as part of capacity building efforts; (iv) 407 women (39.98% of the 1,018 BRT drivers and conductors) were trained on women's safety needs. Overall, the project was successful in completing and achieving the gender actions and targets. Appendix 9 details the GAP achievements.

I. Safeguards

28. **Environmental safeguards.** The project was category A for environment. An environmental impact assessment was prepared and disclosed in compliance with ADB's Safeguard Policy Statement (2009).¹⁴ The introduction of the BRT system would provide cleaner and environmentally sustainable travel options. The improvement of the Fenggang River embankment would have short-term, localized adverse impacts on hydrology, water quality, and biodiversity but was expected to offer medium- to long-term benefits by reducing flood risk and creating a new urban amenity. No cultural relics or historical sites were affected by the project. The project would contribute to cumulative urban development effects on ambient air quality and noise levels, greenhouse gas emissions, and pressures on resources and services. Accordingly, an environmental management plan (EMP) was prepared. Two rounds of public consultation and a community survey were undertaken. A grievance redress mechanism was established to address any issues and complaints that might arise.

29. During project implementation, the PMO established an environmental management team and engaged qualified environment specialists to conduct environmental management activities for effective implementation of the EMP. Detailed and site-specific plans to mitigate the potential impacts on water, soil, air quality and the acoustic environment, and conservation plans were developed and implemented effectively. No unexpected adverse environmental impact was identified other than those predicted at appraisal, and no environmental safeguard-related complaint was received during implementation. A total of 11 environmental monitoring reports were prepared and disclosed on the ADB website.¹⁵ Overall, environmental impact mitigation measures were well implemented, and the environmental impact of the project was reduced to an

¹⁴ The consolidated environmental impact assessment was disclosed on the ADB website in May 2012. An addendum on the BRT corridor realignment was correspondingly prepared and disclosed on the ADB website in September 2017. The environmental due diligence report for the design changes on the underground duct was attached to the sixth environment monitoring report, which was disclosed on the ADB website in February 2017.

¹⁵ ADB. People's Republic of China: Jiangxi Fuzhou Urban Integrated Infrastructure Improvement Project. <https://www.adb.org/projects/44007-013/main>

acceptable level. There were no pending environmental safeguard-related non-compliance issues. The detailed environmental impact analysis is in Appendix 10.

30. **Involuntary resettlement.** The project is category A for involuntary resettlement. A resettlement plan was prepared during project preparation in June 2012. In December 2013, during project implementation, the resettlement plan was updated based on the detailed design. A total of 1,438.6 *mu* collective lands were acquired permanently, 25.9% less than the 1,941.4 *mu* in the updated resettlement plan; a total of 126,337 m² of residential houses were demolished, affecting 461 households of 1,850 people. The total land acquisition and resettlement (LAR) cost is CNY285.33 million, a decrease of 13.2% from the estimate of CNY328.667 million in the updated resettlement plan. The decrease in land acquisition and house demolition cost was derived from the narrowed scope of the Fenggang River component and its greenway as well as the exclusion of a commercial development area from the transport hub.

31. The LAR was implemented in line with the updated resettlement plan, ADB's Safeguard Policy Statement (2009), and the relevant domestic laws and regulations. The actual compensation rates for land acquisition were the same as those in the updated resettlement plan; the implemented compensation rates for house demolition were the same as planned if homeowners opted for in-kind compensation, but higher rates were adopted in the case of cash compensation. Project construction caused the relocation of 461 households (para. 30). Resettlement apartments in Xiangshan garden and Xianxi village were allocated to affected households in June 2015 and December 2019, respectively. Resettlement house plots in Zhujia and Xianxi were allocated to affected households in 2019. The affected households constructed new houses in accordance with their individual plans. As of September 2021, houses for about 80% of affected households in Xianxi and 90% in Zhujia had been constructed. The rest of the affected households did not start construction because they already had other residences.

32. A survey conducted by an external monitor indicated that the average per capita income of sampled households increased from CNY12,166 in 2014 to CNY17,303 in 2019, equivalent to an average annual growth of 7.3%. All sample households had experienced income growth from 2014 to 2019. The average incomes of households in the sample are above the Fuzhou municipal average. Migrant workers and commuters in the Fuzhou High-tech Zone are the major income sources, and they contributed more than 90% of total household income in the sampled households. The affected people were satisfied with their increased income. In addition, the grievance redress mechanism set up by the PMO was transparent and effective. The final resettlement monitoring report indicates that no complaints were received during implementation of LAR. A summary of the LAR is in Appendix 11.

33. **Indigenous peoples.** The project was classified as C for indigenous peoples safeguards and this classification remained unchanged throughout the project implementation. The executing and implementing agencies monitored closely the project impacts on ethnic minorities throughout the project life cycle. No negative direct impact was identified.

J. Monitoring and Reporting

34. All covenants were complied with except the covenant for the borrower's project completion report¹⁶ and minor delays in submission of audit reports. A comprehensive project

¹⁶ An initial draft of the borrower's project completion report prepared in July 2020 about 7 months after the physical completion of the project lacked essential data and information. The project implementation consultant supplemented

performance monitoring system was established and used as a monitoring and reporting mechanism to track the project progress and performance. During implementation, the FMG and the FIDC provided adequate oversight, coordination, and financial support for project implementation. The PMO was fully operational with adequate staff and resources. The procurement of civil works and equipment contracts and the engagement of consultants were carried out in accordance with ADB guidelines and procedures. Measures for environmental and social aspects were incorporated in the contracts and implemented accordingly. Upon completion, total counterpart funds of \$106.4 million equivalent had been provided to the project. The project accounts were audited annually by the China National Audit Office in accordance with auditing standards acceptable to ADB, and eight good-quality audit reports were submitted. Two of the eight reports were submitted with delays, of 1 day and 8 days. The rest were submitted on time. The audited project financial statements for FY2020 are the final audit report of the project. The outstanding issues mentioned by the management letter of the audited project financial statements for 2020 were settled.¹⁷ Regular project progress and monitoring reports were prepared as required and submitted to ADB. As suggested, a project website was established to disclose project related information.¹⁸ The operation and maintenance of the assets under the project are being undertaken by related government agencies and companies in Fuzhou. The status of compliance with legal covenants is in Appendix 12.

III. EVALUATION OF PERFORMANCE

A. Relevance

35. The project is rated *relevant* at both appraisal and completion, as it has delivered its intended outcome and outputs to provide an efficient, inclusive, and sustainable urban transport system in Jiangxi Fuzhou.

36. The project was an integral part of the government's strategy. The PRC is transitioning to a high quality development model that emphasizes innovation, productivity, sustainability, social inclusion, and more sophisticated well-being. The 13th Five-Year Plan (2016–2020) of the PRC government aimed to identify, delineate, and balance the roles of the government, the market, and society. Improving transport connectivity, facilitating inclusive urbanization, and promoting ecological civilization on aspects of green, low-carbon, and livable cities were prioritized.¹⁹ The project has developed a well-designed multimodal transport infrastructure and integrated public transport services in the city, which has reduced transport costs and time, improved the efficiency and attractiveness of the public transport system, enhanced regional accessibility to jobs and services, and contributed significantly to reduction in greenhouse gas emissions.

37. ADB's CPS 2016–2020 for the PRC continued to support the government's reform agenda by focusing on the strategic priorities of managing climate change and the environment, promoting regional cooperation and integration, supporting inclusive economic growth, fostering knowledge

a major part of the required data and information, with ADB's close guidance. However, no consolidated final report was prepared.

¹⁷ The audit report 2020 mentioned that equipment and facilities, mainly ticket gates and safety gates, were supplied for nine BRT stations but remained idle until the cutoff date for auditing. The implementing agency explained that the idleness was caused by the optimization of the station setup so that fewer gates were required. The implementing agency had timely adjusted the inventory plan and planned to use the extra equipment and facilities for future route expansion and spare parts.

¹⁸ It is on the official website of the FIDC.

¹⁹ People's Republic of China. 2016. *The Thirteenth Five-Year Economic and Social Development Plan (2016–2020)*. Approved by the State Council. Beijing.

cooperation, and supporting institutional and governance reform.²⁰ These strategic priorities align with ADB's Midterm Review of Strategy 2020 and ADB's approach to supporting upper-middle-income countries. The project has improved access for the people of Fuzhou City to a good-quality, efficient, and sustainable public transport system. The institutional capacity of the government has been enhanced through capacity building activities. The implementation and operation of the project has brought substantial socioeconomic impacts in the project areas and will continue to do so.

B. Effectiveness

38. The project is *effective* in achieving its intended outputs and outcomes. Upon completion, a BRT system of 12.5 km, a public transport hub, and four sections of station access roads had been constructed and opened to traffic. This infrastructure improvement has provided a well-designed multimodal transport system and integrated public transport services for residents. The average speed of the buses in the BRT corridor reached 23–28 km per hour in 2019; with the BRT buses procured under the project, the average age of the public bus fleet in Fuzhou was reduced to 6 years; the transfer time from the bus terminal to the railway station was reduced to an average of 5 minutes. The share of person-trips by public transport increased to 25% and the share of railway passengers using the BRT reached 30% in 2019. The project has reduced transport costs, increased the efficiency and attractiveness of the public transport system, expanded travel opportunities and regional accessibility to jobs and services, promoted sustainable urbanization and poverty reduction, and encouraged a shift to modes of travel with lower and even zero emissions. The embankment and landscaping development has increased the capacity for flood protection and provided a green park to the residents of Fuzhou. With the improved public transport system and the greenway as well as the other efforts by the government, the average concentrations of carbon monoxide and nitrogen dioxide in Fuzhou City have substantially declined.²¹

39. The project implemented substantial capacity development programs, for project management, BRT design and implementation, and environment and social policy compliance, as well as training on BRT operation and management. It effectively improved the government's capacity in project management, urban transport development, and public transport operations. However, there is a minor deficiency: both the PMO and the project management consultant omitted the training on the project performance monitoring system and it was not conducted until the completion of the project. The project achieved its gender-related output targets, including (i) 19 BRT stations equipped with proper lighting, security cameras, and help buttons to ensure the safety of women and other people with special needs; (ii) 416 women (48.5% of the workforce) employed during project construction, among which 166 (39.90% of the women) were in skilled jobs; 58 new jobs (48.7% of the total) taken by women during the project operation; (iii) 45% of female staff from the implementing and executing agencies and the PMO trained on gender equality as part of the capacity building; and (iv) 407 women BRT drivers and conductors (39.98% of the 1,018 drivers and conductors) were trained on women's safety needs. The project's gender performance has effectively improved gender equity awareness and practice, mainly through women's full engagement in operating a BRT bus fleet with all-women drivers, and through women's economic empowerment, contributing to an efficient, inclusive, and sustainable urban transport system in Fuzhou.

²⁰ ADB. 2016. *Country Partnership Strategy: Transforming Partnership: People's Republic of China and Asian Development Bank, 2016–2020*. Manila.

²¹ In comparison with the data of 2012, sulfur dioxide (SO₂) levels declined from 0.024 milligram per cubic meter (mg/m³) to 0.013 mg/m³, nitrogen dioxide (NO₂) levels declined from 0.022 mg/m³ to 0.016 mg/m³, and particulate matter (particle size below 10 microns (PM₁₀) declined from 0.064 mg/m³ to 0.057 mg/m³ in 2018.

C. Efficiency

40. The project is rated *efficient* because the project outcome was achieved with efficient use of resources, at a project cost lower than estimated, and the project remained economically viable at completion. The project delivered the envisaged project outcome.

41. At completion, the economic internal rate of return (EIRR) of the project was reevaluated using a similar methodology as at appraisal but with the updated data. The EIRR was recalculated at 16.9%, which is higher than that estimated at appraisal (14.0%). This was mainly due to a lower capital cost and higher BRT traffic levels than estimated at appraisal. The recalculated EIRR is above the ADB recommended discount rate of 12%. The project is therefore considered to be continuously economically viable. The EIRR was subjected to sensitivity analysis to test different scenarios of the operation and maintenance (O&M) costs and benefits. The sensitivity analysis results indicated that the project continued to be economically viable for all tested scenarios. If a 20% O&M cost increase were combined with a 20% benefit reduction, the EIRR for the project would still be 13.1%. The sensitivity analysis also showed that the EIRR was more sensitive to changes in economic benefits. The details of the economic reevaluation are in Appendix 13.

42. During implementation, the project experienced delays in finalizing the BRT realignment and project scope adjustments. With joint efforts, the project implementation was accelerated and completed on an extended schedule. The implementation delays had only a limited negative impact on project efficiency.

D. Sustainability

43. The project is rated *likely sustainable* given the following major factors:

44. **Public transport development.** The public transport system, including the project BRT system, is operated by the Fuzhou Public Transport Company, a state-owned enterprise. The Fuzhou Public Transport Company has 614 staff for managing, operating, and maintaining the public transport system in Fuzhou. Currently, 10 bus routes use the BRT corridor (2 routes use the full corridor, and the rest use part of the corridor). The transport hub contains the BRT monitoring and management center, as well as facilities for bus maintenance, charging, and parking. The operation of the BRT system and the transport hub has improved public transport conditions and service in Fuzhou. According to a 2019 survey,²² the daily average person-rides in the BRT corridor was 58,000, about 17% more than in the corridor before the project. The daily ridership of the BRT corridor would be more than 60,000 person-rides without coronavirus disease (COVID-19) pandemic impact.

45. **Operation of the access roads and greenway.** The facilities of the access roads and the greenway were transferred to related government agencies for O&M.²³ The access roads are in front of the railway station, which is a new development area in Fuzhou. The traffic level is still low on the access roads. However, large scale development is occurring in the new area and traffic will grow quickly along with the development, leading to an increase in railway passengers. The design of the greenway adopted the Sponge City concept as part of Fuzhou's development

²² Far East Mobility. 2019. *Operation Effectiveness Evaluation of the BRT System in Fuzhou*. Guangzhou.

²³ The access roads are maintained by Fuzhou City and Linchuan District Urban Infrastructure Management Service Center, and the "greenway" is maintained by Bureau of Parks and Woods of Fuzhou. Both agencies are sufficiently subsidized by the government.

strategy. Low-impact development approaches, such as gabion erosion protection, an ecological drainage system, and ecological landscape pools, were implemented well. Permeable and environmentally friendly materials were used in construction. A gently sloping lawn and ecological forests decorate the original riverbank. A wetland that maintains the original ecology of the environment was built for flood prevention. With these approaches, the greenway is flexible, ecological, and beneficial for local aquatic plants and animals. In addition, the greenway adjoins another park developed by the government and provides new relaxation and recreation areas for Fuzhou residents. The implementation and operation of the greenway demonstrated good practices to other similar developments in Fuzhou.

46. **Financial reevaluation.** The operation of the BRT system generates revenues through ticketing. The financial internal rate of return (FIRR) of the BRT system was reevaluated at 3.24% before tax and 2.99% after taxes, based on actual capital costs, prevailing O&M costs, and estimations of revenues. The recalculated FIRR was higher than the weighted average cost of capital of 2.86% as recalculated at project completion. The project is thus financially viable. The FIRR at appraisal, 7.5% before corporate income tax and 5.2% afterward, were higher than at completion mainly owing to a passenger traffic forecast at appraisal that was more optimistic than actual bus ridership. In addition, to promote usage of public transport, teachers, students, and vulnerable groups including the elderly and the disabled enjoy discounts or free rides, which reduces the revenue from tickets. Revenue from BRT ridership and bus commercial advertising also declined in 2020 because of the COVID-19 pandemic. The sensitivity analysis results indicated that, combining a 10% increase in O&M costs and a 10% decrease in revenue, the FIRR was 0.94% before tax and 0.72% after tax for the whole project. The details of the financial reevaluation are in Appendix 14.

47. On environment and institutional aspects, no unexpected adverse environmental impacts were identified other than those predicted in the original EMP. The air quality in Fuzhou has greatly improved after the implementation of the BRT system. The capacity building program enhanced the technical, operational, and managerial capabilities of staff, as well as improving gender sensitization and environmental consciousness. The project is considered sustainable on both aspects.

E. Development Impact

48. The project's development impact is rated *satisfactory*. The completed BRT system, station access roads, urban transport hub, and riverbank improvement and greenway not only have provided an efficient, inclusive, and sustainable urban transport system in Fuzhou but also have improved the efficiency of freight logistics. The project has made significant contributions to living conditions, environmental quality, and sustainable economic growth. The improved connectivity has provided better access to markets, employment opportunities and schools, hospitals, and social services. The project has 1,089,888 beneficiaries, of which 520,027 (47.7%) are women.

49. The project has achieved its intended impact and has contributed to an efficient, inclusive, and sustainable urban transport system in Fuzhou. In 2019 the share of person-trips by public transport had increased to 25% and the share of railway passengers using the BRT had reached 30%. Daily average passenger-rides on the BRT corridor reached 58,000 in 2019, which was about 17% more than before the project.

50. During implementation, the FIDC and the PMO paid adequate attention to the development impacts of the project. A consultant was recruited to carry out external monitoring

on the implementation of the GAP and the social development action plan. The socioeconomic impact indicators show that (i) economic growth in Fuzhou has accelerated, with an average growth rate in gross domestic product of 8.2% over 3 years (2017–2019); (ii) gross domestic product per capita reached CNY37,2727 in 2019; (iii) urban disposable income increased by 8.5% and 7.9%, respectively in 2018 and 2019; (iv) the share of public transport in total transport was about 25% in 2019; (v) the contractors hired local labor during construction, including substantial numbers of women and the poor;²⁴ (vi) traffic safety facilities were in place and all drivers of public transport were trained in BRT operation and safety; and (vii) the contractors received training on construction safety and Acquired Immune Deficiency Syndrome (AIDS) prevention.

F. Performance of the Borrower and the Executing Agency

51. The overall performance of the borrower, executing agency, and implementing agency is rated *satisfactory*. The borrower/recipient of the ADB loan and the GEF grant was the PRC, the executing agency was the FMG, and the implementing agency was the FIDC. The related government agencies, mainly the Ministry of Finance and the Jiangxi Provincial Financial Department, actively participated in coordination and supervision of project implementation. The FMG made adequate institutional arrangements for project implementation and operation. The PMO was fully staffed with the expertise required for project implementation and was delegated adequate technical and administrative authority to make expeditious field-level decisions. The FMG provided the counterpart funds timely, as required. The project implementation complied with most loan and grant covenants. The project also implemented anticorruption measures as required. The FIDC and the PMO, assisted by the PMC, implemented all aspects of project management and implementation. The completion of the project has substantially improved the capacity and efficiency of public transport in Fuzhou.

G. Performance of the Asian Development Bank

52. ADB's overall performance is *satisfactory*. The project administration was undertaken by ADB headquarters and then transferred to ADB's PRC Resident Mission in December 2017. ADB was closely involved in identifying and resolving issues. During implementation, ADB fielded 15 project review missions, including the inception mission in 2013, the midterm review mission in 2016, and the completion review mission in 2021. The ADB missions analyzed the implementation issues affecting project progress and provided substantial inputs in preparing action plans to expedite the project's implementation. The ADB project team and experts provided regular training and support to the FIDC and the PMO staff, the consultants, and the contractors on project management and safeguard policy compliance, which built their capacity. Document approval during processing and implementation was timely, and all claims for payment were processed promptly. The role of the ADB project team and missions in providing timely advice and technical supports was well recognized by the government.

H. Overall Assessment

53. Overall, the project is rated *successful*. The project was relevant to both the government's development objectives and ADB's country partnership strategy. The project was designed appropriately and implemented with some changes in scope to meet actual needs. The project was rated effective in achieving its outcomes. The project's outputs and outcomes demonstrate

²⁴ In 2016, the contractors hired 223 long-term workers (31.8% of them women), including 403 person-days (33.5% for women) of work for local people. In 2019, they hired about 35 long-term workers and 68 short-term workers, of which about 50% were female and 8.7% were poor.

that it was an effective intervention for sustainable economic growth in Fuzhou, as well as enhanced capacity of the government. The project was rated efficient in achieving its outcomes and outputs, considering the robust EIRRs recalculated at project completion and its continuous economic viability. At completion, the project had substantially improved connectivity and supported rapid socioeconomic development and had brought and will continue to bring significant socioeconomic benefits in Fuzhou. The project was rated likely sustainable, considering the rapid urban development, the public transport arrangement in Fuzhou, the financial viability of the project, and its socioeconomic impacts.

Overall Ratings	
Criteria	Rating
Relevance	Relevant
Effectiveness	Effective
Efficiency	Efficient
Sustainability	Likely Sustainable
Overall Assessment	Successful
Development impact	Satisfactory
Borrower and executing agency	Satisfactory
Performance of the Asian Development Bank	Satisfactory

Source: Asian Development Bank.

IV. ISSUES, LESSONS, AND RECOMMENDATIONS

A. Issues and Lessons

54. **BRT design and implementation.** As indicated in para. 19, there was a delay during the detailed design of the BRT system. The executing agency doubted the feasibility of the BRT implementation and even intended to cancel the component because of possible construction and operation difficulties, including potential congestion during both construction and future BRT operation. Although the issue was solved by realignment of the BRT route, the implementation was delayed by about 4 years. Like Fuzhou, most of the cities in the PRC are highly populated and have limited road space for development in the city center. If a BRT system is planned to cross such an area, the alignment should be properly selected at appraisal with prioritized consideration given to avoiding traffic congestion.

55. **Consultant Selection and Management.** The project management consultant changed team personnel significantly and caused low quality of service. The original team leader was not mobilized because of medical problems and the acting team leader was soon replaced due to the same reason. There were also frequent changes of the team members. The instability of the team and the incapability of some replacement of the key positions led to low quality of support to project implementation. To be specific, some of the periodic reports were of poor quality. The training on project performance monitoring system was not conducted. The required translation support was seriously inadequate. Moreover, the PMC did not provide sufficient support to the EA in preparation of the Borrower's project completion report. The report received were absent of essential data and information. The PMC only supplemented a major part of the required data and information at the advice of ADB afterwards. ADB and the executing and implementing agencies should strengthen their management of consultants to avoid frequent changes in personnel. They should carefully evaluate the qualifications of replacement personnel to ensure equal or higher qualifications if a replacement is unavoidable. In addition, the historical performance rating of consultants could be considered as a criterion for shortlisting of consultants for future ADB-financed contracts.

B. Recommendations

56. **Technical design of BRT in the PRC.** Given that most cities in the PRC have persistent problems of mixed traffic, concentrated populations, limited road space, poorly developed road networks and traffic facilities in the old town, and unpredictable behavior of traffic participants, BRT planning efforts should avoid sensitive areas that could lead to congestion. In addition, the types of BRT corridor (opened or fully controlled) and BRT station design (island or roadside), and the traffic management and signaling system should be selected or designed with comprehensive consideration of road space availability, safety requirements, and traffic behavior.

57. **Further action or follow-up.** ADB has completed three BRT projects in the PRC, in Lanzhou, Yichang, and Fuzhou. Another one is under implementation in Ji'an and will be completed in 2022. A study on design, implementation, operation and maintenance, as well as the development impacts of the BRT system might be considered, which could cover several of these cities. The study could benefit future similar projects and the development of the urban transport sector.

58. **Timing of the project performance evaluation report.** The project performance evaluation report can be prepared in 2023 when the BRT system and all facilities under the project will have been fully operational for 3 years.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators ^a	Project Achievements
Impact An efficient, inclusive, and sustainable urban transport system in Jiangxi Fuzhou	<p>Share of person-trips by public transport increased from 9.1% in 2011 to 18% in 2020</p> <p>Percentage of railway passengers using BRT 30% by 2020 (2011 baseline: 0)</p> <p>Average concentrations of carbon monoxide and nitrogen dioxide in Fuzhou staying at current levels until 2020</p>	<p>Exceeded the target. With the improved public transport, the share of person-trips by public transport increased to 25% in 2020.</p> <p>Achieved. The percentage of railway passenger using the BRT reached at least 30% in 2020.</p> <p>Exceeded the target. With the improved public transport system and other efforts, the average concentrations of carbon monoxide and nitrogen dioxide in Fuzhou were substantially reduced^b</p>
Outcome Efficient multimodal access to the new main railway station	<p>Average bus speeds on BRT corridor increased to 26 km/hour by 2018 from 11 km/hour in 2012</p> <p>Average age of the bus fleet reduced from 8 to 6 years in 2018</p> <p>Transfer time between BRT bus terminal and railway station platform less than 10 minutes by 2018</p> <p>Flood frequency reduced from annual to once in 20 years</p>	<p>Achieved. Upon operation, the average speed of the buses in the BRT corridor reached 23–28 km per hour in 2019.</p> <p>Achieved. Total 133 BRT buses were procured under the project. The average age of the public bus fleet in Fuzhou reduced to 6 years in 2019.</p> <p>Achieved. Upon operation of the BRT terminal, the transfer time to the railway station reduced to less than 5 minutes.</p> <p>Achieved. With the improved embankment, the flood frequency reduced to once in 20 years.</p>
Outputs 1. BRT system	12.2 km BRT system operating by 2015	Achieved.

Design Summary	Performance Targets/Indicators ^a	Project Achievements
2. Urban transport hub	Lighting, security cameras, and help buttons installed in all BRT stations and vehicles to ensure the safety of women and other vulnerable users	<p>A BRT system of 12.5 km was constructed and opened to traffic in March 2019.</p> <p>Achieved. 19 BRT stations (14 island-style, 3 pairs of roadside, and 2 main stations at the ends) were constructed. The BRT stations and buses were with lighting, security, and help facilities.</p>
	Priority seating for people with special needs (pregnant women, parents with young children in prams, the elderly, people with disabilities) in all BRT buses and stations	<p>Achieved. All BRT stations and buses were installed with priority seating.</p>
	CNG BRT and feeder buses operating by 2015	<p>Achieved. ADB approved the change of type of the BRT buses from CNG to electric in December 2017. All buses are in operation.</p>
	BRT infrastructure and operation optimized to minimize GHG emissions	<p>Achieved. BRT infrastructure and operation were optimized to minimize GHG emissions.</p>
	New bus and taxi terminals and support facilities constructed by 2014	<p>Achieved. A new urban transport hub was constructed and opened to traffic in 2019, which includes bus terminal and support facilities.</p>
3. Fenggang River Greenway	Lighting, security cameras, and help buttons installed in bus terminal to ensure the safety of women and other vulnerable users	<p>Achieved. Lighting, security and help facilities were installed in the transport hub.</p>
	4 km greenway and embankment constructed by 2015	<p>Achieved. The greenway and embankment of 4.5 km with strengthened flood control was constructed.</p>

Design Summary	Performance Targets/Indicators ^a	Project Achievements
	<p>Landscaping and other park facilities constructed by 2016</p> <p>50% of the greenery maintenance and landscaping jobs filled by women</p>	<p>Achieved. Greening areas of 960,000 m² was developed in the "greenway." The roads are installed with lighting and rest areas. A bicycle lane of 303 meters was also constructed.</p> <p>Achieved. A total of 453 construction jobs were created under Fenggang River greenway, of which 264 (58.28%) were taken by women. 8 (57.14%) out of 14 of the greenery maintenance and landscaping jobs were filled by women.</p>
4. Station access roads	10 km of urban class 2 roads and related infrastructure constructed by 2015.	<p>Achieved. 4 sections of station access roads of totaling 10.221 km were constructed and opened to traffic before the end of 2019.</p>
5. Institutional strengthening and capacity building	<p>Staff of executing and implementing agencies and PMO trained on project management, PPMS, procurement, disbursement, safeguards, and gender requirements.</p> <p>Agencies in Fuzhou trained on traffic management, road safety, and BRT operation and management</p>	<p>Partial Achieved. Substantial trainings were provided to the government and PMO staff on the project management, monitoring, procurement, disbursement, safeguards, and gender requirements. But the PPMS training was not provided by the PMC.</p> <p>Achieved. The government agencies including the Bureau of Transport and Traffic Police were trained on traffic management, road safety, and BRT operations. A total of 41 key staff including 10</p>

Design Summary	Performance Targets/Indicators ^a	Project Achievements
	BRT drivers and maintenance staff trained in eco-driving and maintenance procedures.	women (24.39%) of executing and implementing agencies and PMO were trained on project management, procurement, disbursement, safeguards, and gender requirements Achieved. Two international and one national consultants were engaged to provide trainings to the drivers and maintenance staff. 1,018 (100%) BRT drivers and conductors, including 407 women (40%), were trained.

ADB = Asian Development Bank, BRT = bus rapid transit, GHG = greenhouse gas, km = kilometer, m² = square meter, PMC = project management consultants, PMO = project management office, PPMS = project performance monitoring system.

^a ADB (East Asia Department). 2014. Minor Change in Scope. Memorandum. March (internal) Two additional performance indicators on CNG bus operation and CHG emissions, and one additional performance indicator on training of BRT drivers and maintenance staff were added for output 1 and output 2, respectively. The other parts remained unchanged.

^b The local government only started disclosing the parameter of carbon monoxide from 2015. According to the provincial Environmental Quality Reports from 2015 to 2020, the average concentrations of carbon monoxide in Fuzhou has significantly decreased from 1.7 mg/ m³ (2015) to 1.0 mg/m³ (2020) with over 40% decline. According to the provincial Environmental Quality Reports from 2012 to 2020, the average nitrogen dioxide concentrations has substantially decreased from 0.22 mg/m³ (2012) to 0.16 mg/m³ (2020) with 27% decline. Despite exceptional fluctuation in less than 10% (0.23 mg/m³ in 2013 and 0.24 mg/ m³ in 2018), the overall trend has been falling.

Source: Asian Development Bank.

PROJECT COST AT APPRAISAL AND ACTUAL

(\$ million)

Item	Appraisal Estimates			Actual		
	Foreign Exchange	Local Currency	Total Cost	Foreign Exchange	Local Currency	Total Cost
A. Base Cost						
1. Civil works	14.94	87.14	102.08	18.90	89.77	108.67
Station Access Road	4.93	44.41	49.34	4.90	44.13	49.03
Urban Transport Hub	1.74	6.93	8.67	1.62	6.44	8.05
Bus Rapid Transit (BRT)	5.80	13.54	19.34	10.84	25.31	36.15
Fenggang River Greenway	2.47	22.26	24.73	1.54	13.89	15.43
2. Goods and Equipment	4.57	4.57	9.14	18.60	18.60	37.19
3. Land Acquisition and Resettlement		66.39	66.39		41.93	41.93
4. Institutional Strengthening and Capacity Building	1.44		1.44	1.55		1.55
5. Design, Project Management and Supervision		11.19	11.19		4.79	4.79
Design and Project Management		8.53	8.53		3.59	3.59
Consulting Service for Supervision		2.66	2.66		1.20	1.20
Subtotal (A)	20.95	169.30	190.25	39.05	155.08	194.13
B. Contingencies						
1. Physical		14.99	14.99			
2. Price		17.92	17.92			
Subtotal (B)	0.00	32.91	32.91	0.00	0.00	0.00
C. Financing Charges During Implementation						
1. Interest During Implementation	3.05		3.05	5.46 ^a		5.46
2. Commitment Charges	0.25		0.25			
Subtotal (C)	3.30	0.00	3.30	5.46	0.00	5.46
Total Project Cost (A+B+C)	24.25	202.21	226.46	44.51	155.08	199.59

^a Includes commitment charges.

Sources: Asian Development Bank and Project Management Office.

PROJECT COST BY FINANCIER

Table A3.1: Project Cost at Appraisal by Financier
(\$ million)

Item	ADB		Government		Total Cost
	Amount	% of Cost Category	Amount	% of Cost Category	
A. Base Cost					
1. Civil works	86.12	84.4%	15.97	15.6%	102.09
Station Access Road	41.63	84.3%	7.73	15.7%	49.36
Urban Transport Hub	7.31	84.3%	1.36	15.7%	8.67
Bus Rapid Transit	16.32	84.4%	3.02	15.6%	19.34
Fenggang River Greenway	20.87	84.4%	3.86	15.6%	24.73
2. Goods and Equipment	9.14	100.0%			9.14
3. Land Acquisition and Resettlement			66.39	100.0%	66.39
4. Institutional Strengthening and Capacity Building	1.44	100.0%			1.44
5. Design, Project Management and Supervision			11.19	100.0%	11.19
Design and Project Management			8.53	100.0%	8.53
Consulting Service for Supervision			2.66	100.0%	2.66
Subtotal (A)	96.70	50.8%	93.55	49.2%	190.25
B. Contingencies					
1. Physical			14.99	100.0%	14.99
2. Price			17.92	100.0%	17.92
Subtotal (B)	0.00	0.0%	32.91	100.0%	32.91
C. Financing Charges During Implementation					
1. Interest During Implementation	3.05	100.0%			3.05
2. Commitment Charges	0.25	100.0%			0.25
Subtotal (C)	3.30	100.0%	0.0	0.0%	3.30
Total Project Cost (A+B+C)	100.00	44.2%	126.46	55.8%	226.46
% Total Project Cost	44.2%		55.8%		

ADB = Asian Development Bank

Source: Asian Development Bank.

Table A3.2: Project Cost at Completion by Financier
(\$ million)

Item	ADB		GEF		Government		Total Cost
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	
A. Base Cost							
1. Civil works	64.28	59.1%			44.39	40.9%	108.67
Station Access Road	17.33	35.3%			31.70	64.7%	49.03
Urban Transport Hub	5.71	70.9%			2.35	29.1%	8.05
Bus Rapid Transit	30.26	83.7%			5.90	16.3%	36.15
Fenggang River Greenway	10.98	71.2%			4.45	28.8%	15.43
2. Goods and Equipment	21.81	58.6%	2.27	6.1%	13.11	35.3%	37.19
3. Land Acquisition and Resettlement					41.93	100.0%	41.93
4. Institutional Strengthening and Capacity Building	1.34	86.1%	0.22	13.9%			1.55
5. Design, Project Management and Supervision					4.79	100.0%	4.79
Design and Project Management					3.59	100.0%	3.59
Consulting Service for Supervision					1.20	100.0%	1.20
Subtotal (A)	87.42	45.0%	2.49	1.3%	104.22	53.7%	194.13
B. Contingencies							
1. Physical							
2. Price							
Subtotal (B)	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
C. Financing Charges During Implementation							
1. Interest During Implementation	3.30	60.4%			2.16	39.6%	5.46^a
2. Commitment Charges							
Subtotal (C)	3.30	60.4%	0.00	0.0%	2.16	39.6%	5.46
Total Project Cost (A+B+C)	90.72	45.5%	2.49	1.2%	106.39	53.3%	199.59
% Total Project Cost	45.5%		1.2%		53.3%		

ADB = Asian Development Bank, GEF = Global Environment Facility.

^a Includes commitment charges.

Note: Numbers may not add precisely due to rounding.

Sources: Asian Development Bank and Project Management Office.

DISBURSEMENT OF ADB LOAN AND GRANT PROCEEDS

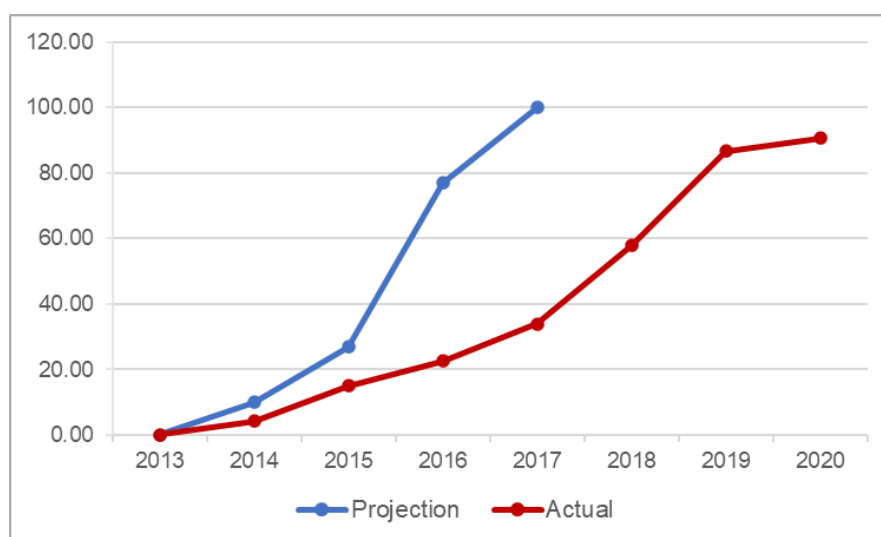
Table A4.1: Annual and Cumulative Disbursement of ADB Loan Proceeds
(\$ million)

Year	Annual Disbursement		Cumulative Disbursement	
	Amount (\$ million)	% of Total	Amount (\$ million)	% of Total
2013	0.06	0.1%	0.06	0.1%
2014	4.15	4.6%	4.21	4.6%
2015	10.81	11.9%	15.02	16.6%
2016	7.52	8.3%	22.54	24.8%
2017	11.36	12.5%	33.90	37.4%
2018	24.05	26.5%	57.95	63.9%
2019	28.72	31.7%	86.67	95.5%
2020	4.05	4.5%	90.72	100.0%
Total	90.72	100.0%	90.72	100.0%

ADB = Asian Development Bank.

Source: ADB Integrated Disbursement System.

Figure A4.1: Projection and Cumulative Disbursement of ADB Loan Proceeds
(\$ million)



ADB = Asian Development Bank.

Source: ADB Integrated Disbursement System.

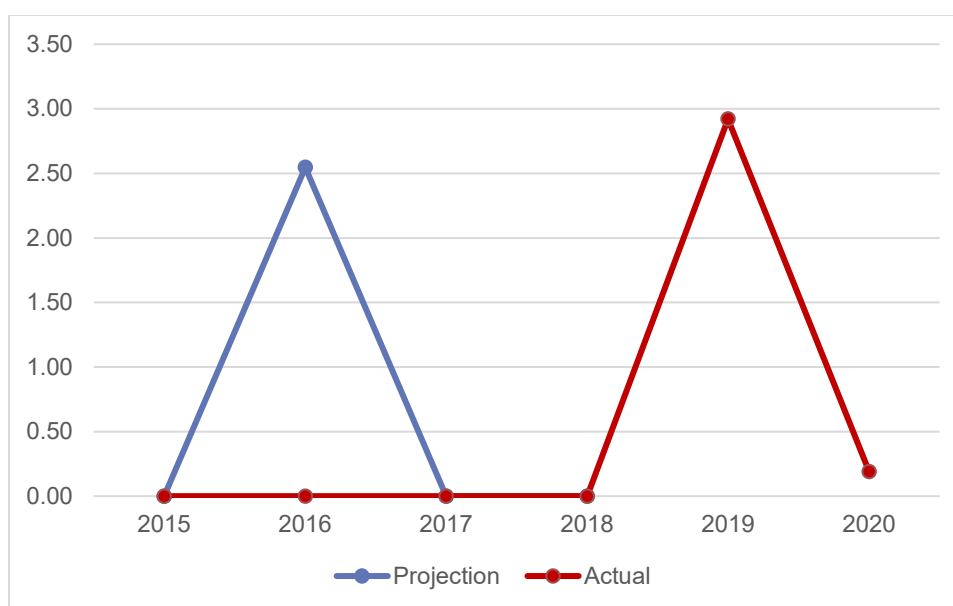
Table A4.2: Annual and Cumulative Disbursement of GEF Grant Proceeds
(\$ million)

Year	Annual Disbursement		Cumulative Disbursement	
	Amount (\$ million)	% of Total	Amount (\$ million)	% of Total
2015	0.00	0.0%	0.00	0.0%
2016	0.00	0.0%	0.00	0.0%
2017	0.00	0.0%	0.00	0.0%
2018	0.00	0.0%	0.00	0.0%
2019	2.29	92.2%	2.29	92.2%
2020	0.19	7.8%	2.49	100.0%
Total	2.49	100.0%	2.49	100.0%

GEF = Global Environment Facility.

Source: ADB Integrated Disbursement System.

Figure A4.2: Projection and Cumulative Disbursement of GEF Grant Proceeds
(\$ million)



GEF = Global Environment Facility.

Source: ADB Integrated Disbursement System.

CONTRACT AWARDS OF ADB LOAN AND GRANT PROCEEDS

Table A5.1: Annual and Cumulative Contract Awards of ADB Loan Proceeds

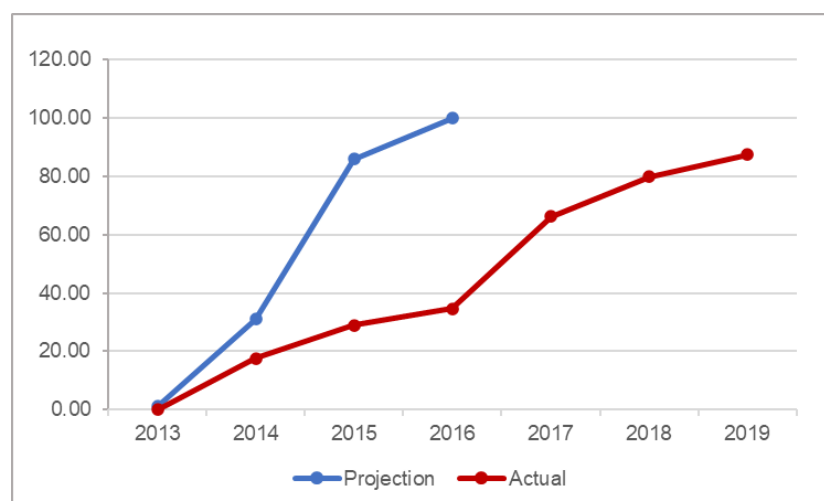
Year	Annual		Cumulative	
	Amount (\$ million)	% of Total	Amount (\$ million)	% of Total
2014	17.58	20.1%	17.58	20.1%
2015	11.38	13.0%	28.97	33.1%
2016	5.71	6.5%	34.68	39.7%
2017	31.53	36.1%	66.21	75.7%
2018	13.64	15.6%	79.85	91.3%
2019	7.57	8.7%	87.42	100.0%
Total	87.42	100.0%	87.42	100.0%

ADB = Asian Development Bank.

Note: Numbers may not add precisely due to rounding.

Source: ADB Integrated Disbursement System.

Figure A5.1: Projection and Cumulative Contract Awards of ADB Loan Proceeds (\$ million)



ADB = Asian Development Bank.

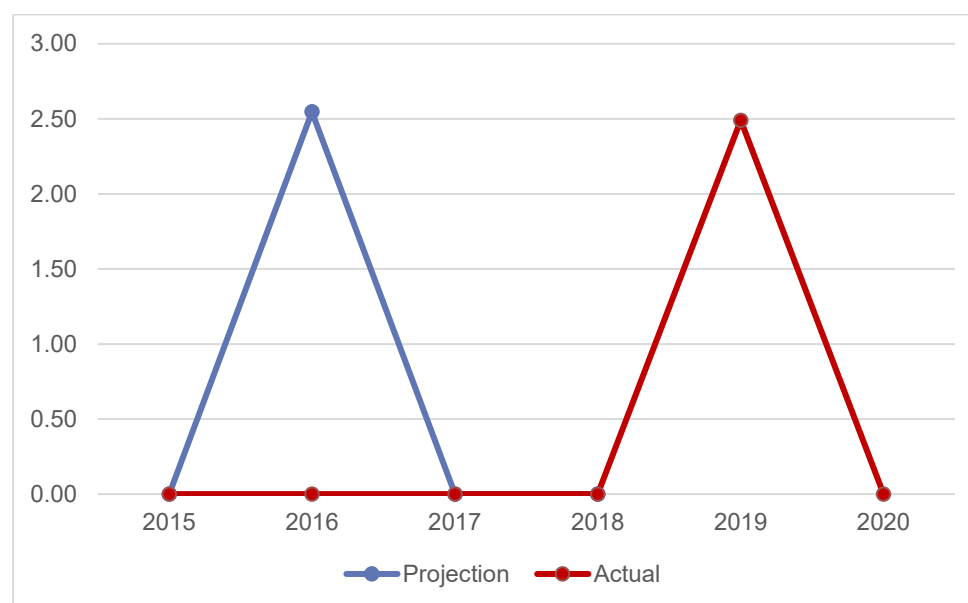
Source: ADB Integrated Disbursement System.

Table A5.2: Annual and Cumulative Contract Awards of GEF Grant Proceeds

Year	Annual		Cumulative	
	Amount (\$ million)	% of Total	Amount (\$ million)	% of Total
2015	0.00	0.0%	0.00	0.0%
2016	0.00	0.0%	0.00	0.0%
2017	0.00	0.0%	0.00	0.0%
2018	0.00	0.0%	0.00	0.0%
2019	2.49	100.0%	2.49	100.0%
2020	0.00	0.0%	2.49	100.0%
Total	2.49	100.0%	2.49	100.0%

GEF = Global Environment Facility.

Source: ADB Integrated Disbursement System.

Figure A5.2: Projection and Cumulative Contract Awards of GEF Grant Proceeds (\$ million)

GEF = Global Environment Facility.

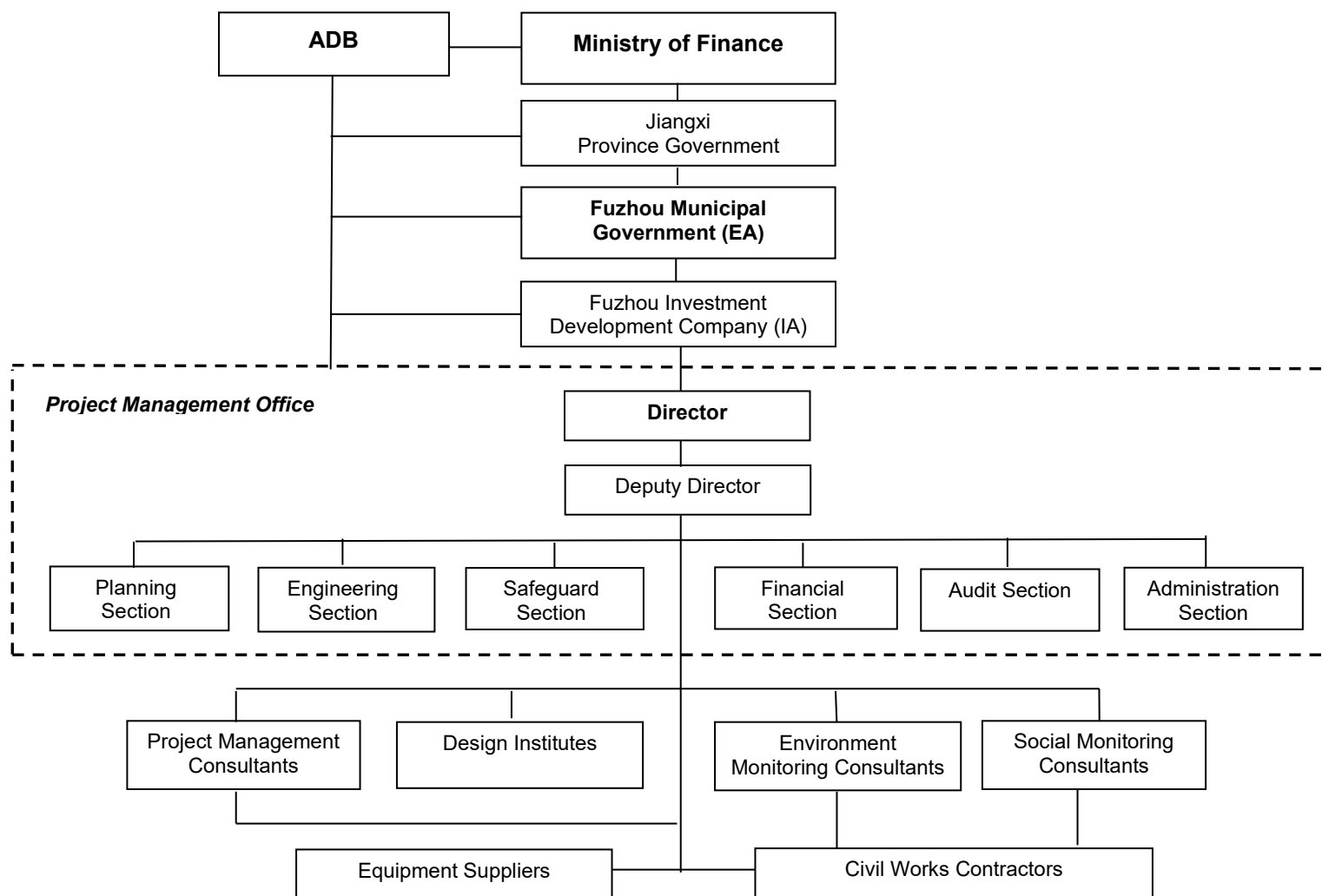
Source: Asian Development Bank Integrated Disbursement System.

APPRAISAL AND ACTUAL IMPLEMENTATION SCHEDULES

Item	2012		2013				2014				2015				2016				2017				2018				2019				
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
A. Civil works																															
Access Roads																															
Procurement																															
Construction																															
Bus Rapid Transit (BRT)																															
Procurement																															
Construction																															
Public Transport Terminal and Hub																															
Procurement																															
Construction																															
Fenggang River Improvement																															
Procurement																															
Construction																															
B. Equipment																															
Procurement																															
Delivery and installation																															
C. Consulting Service																															
Recruitment																															
Implementation																															
</																															

Source: Asian Development Bank.

ORGANIZATION CHART FOR PROJECT IMPLEMENTATION



ADB = Asian Development Bank, EA = executing agency, IA = implementing agency.
Source: Project Management Office.

PROJECT CONTRACT PACKAGES FINANCED BY ADB

Contract No.	Description/Nature of Works	Contractor/ Consultant/Supplier	Procurement Method	Contract Date	Cost (CNY million)		ADB Financing (\$)	
					Contract Amount	Actual Amount	L2915	G0388
Civil works								
C1.2	Waihuan Road (0.481 km)	JIANGXI TONGWEI ROAD CONSTRUCTION GRP CO LTD	NCB	22/07/2014	12.33	12.33	1,532,116	
C1.3	Zhanqian Road (Yuming Rd-Jinchao Rd, 1.183 km)	GUANGXI HUANAN CONSTRUCTION GROUP CO LTD	NCB	22/07/2014	24.51	24.51	2,862,000	
C1.4	Gandong Road (1.151 km) and Jinchao Road (0.837 km)	KUNPENG CONSTRUCTION GROUP CO LTD	NCB	22/07/2014	34.05	34.05	4,124,498	
C1.5	Zhanqian Road (0.997 km) and Jinchao Road (1.224 km)	YICHUN TONGDA ROAD AND BRIDGE CONSTRUCTION CO	NCB	22/07/2014	40.90	39.77	5,174,341	
C1.6	Gandong Road (Zhanqian Rd-Jinni Rd, 1.779 km)	ZHUSHAN CONSTRUCTION GROUP CO LTD	NCB	22/07/2014	33.78	33.78	3,637,160	
C2	BRT line, parking lot, and stations	JV OF FUJIAN LUGANG GROUP AND BEIJING LUAN	NCB	22/06/2017	258.40	258.40	30,257,179	
C3	Bus terminal and company headquarter office	GUANGXI CONSTRUCTION ENGINEERING GROUP NO.1	NCB	23/05/2016	48.11	48.11	5,707,612	
C4	Hydraulic works and landscaping	JIANGXI HONGZHOU LANDSCAPE ENGINEERING CO LTD	ICB	16/02/2015	99.95	99.95	10,982,834	
Equipment								
E1.2	Lot1: intelligent dispatch system	QINGDAO HISENSE TRANSTECH CO., LTD.	ICB	20/09/2018	14.37	14.37	2,049,694	
E1.3	Lot2: ticketing system	JIANGSU HUIMIN TRAFFIC FACILITY CO., LTD.	ICB	20/09/2018	10.05	10.05	1,322,122	
E1.4	Lot3: security door system	JOINT VENTURE BETWEEN CHINA NATIONAL ELECTRIC	ICB	17/09/2018	9.06	9.06	1,319,756	
E1.5	Lot4: passenger guidance system	JOINT VENTURE BETWEEN ZHONGHUI ELECTROMECHANICAL	ICB	20/09/2018	4.63	4.63	515,914	
E2	BRT buses	HUNAN CRRC TIMES ELECTRIC VEHICLE CO. LTD.	ICB	12/12/2018	73.86	73.86	8,435,156	
E3	Bus repair equipment	NANCHANG CHENGAN AUTOMOTIVE TESTING EQUIPMENT	ICB	30/10/2017	4.10	4.10	594,827	
E4.1	Station charging facilities	JV BETWEEN WUHAN HICONICS INTELLIGENT ELECTRIC	ICB	29/01/2019	6.20	6.20	886,806	
E4.2	Wenchang avenue charging piles	JOINT VENTURE BETWEEN WUHAN HICONICS INTELLIGENT	ICB	29/01/2019	5.78	5.78	829,403	
E5	BRT buses	ZHENGZHOU YUTONG BUS CO., LTD.	ICB	12/09/2019	28.19	28.19	4,027,364	
E6	Station charging facilities	JOINT VENTURE BETWEEN BEIJING CHONG TAI	ICB	06/09/2019	11.49	11.49	1,824,240	
G19904	BRT buses	HUNAN CRRC TIMES ELECTRIC VEHICLE CO. LTD.	ICB	12/12/2018	\$2,269,790	\$2,269,790		2,269,790
Consulting Services								
CS1	Project management and capacity building	ENERGY AND ENVIRONMENTAL DEVELOPMENT	QCBS	12/02/2015	\$359,854	2.24	333,757	
CS1.1	External environmental monitoring	NIE MINGTAO	ICS	20/02/2014	0.74	0.72	107,456	
CS1.2	External resettlement monitoring	BINGFANG ZHONG	ICS	01/03/2014	1.00	0.97	146,824	
CS1.3	External gender and social monitoring	XUEMEI ZHANG	ICS	14/04/2015	0.48	0.44	66,439	
CS2	BRT institutional capacity building (BRT supervision)	WSP HONG KONG LTD. AND NAREE INT'L. LTD.	QCBS	26/04/2017	\$682,500	4.44	682,500	
CS5-1	International driver training	SHANGHAI WSP CONSULTING LTD.	Others	30/04/2019	\$57,769	\$57,769		57,769
CS5-2	National diver training	SHANGHAI WSP CONSULTING LTD.	Others	30/04/2019	\$66,344	\$66,344		66,344
CS6	International BRT efficiency operation training	SHANGHAI WSP CONSULTING LTD.	Others	30/04/2019	\$91,940	\$91,940		91,940
	Total						87,419,998	2,485,843

ICB = international competitive bidding, ICS = individual consultant selection, NCB = national competitive bidding, QCBS = quality- and cost-based selection.

Sources: Asian Development Bank and Project Management Office.

IMPLEMENTATION OF GENDER ACTION PLAN

A. Introduction

1. The project is in Fuzhou (prefectural level city) in Jiangxi Province. The project included five main outputs intended to substantially improve the urban transport system in Fuzhou: (i) bus rapid transit system, (ii) urban transport hub, (iii) Fenggang River greenway, (iv) station access roads, and (v) institutional strengthening and capacity building. The impact of the project will be an efficient, inclusive, and sustainable urban transport system in Jiangxi Fuzhou. The outcome of the project will be efficient multimodal access to the new main railway station.

B. Gender Issues and Institutional Setup

2. The project is categorized as effective gender mainstreaming and a gender action plan (GAP) was prepared with 19 activities and 6 quantitative targets. At appraisal stage, the poverty and social assessment was conducted and revealed that women's transport needs raised from their various social roles and patterns of mobility. Moreover, women were more likely than men to have personal safety concerns when using public transport. These revelations presented important implications for the physical design and operation of public transport systems. The GAP features include (i) ensuring women's equitable participation in project related public consultation; (ii) incorporating gender-responsive physical design features in the design of urban transport infrastructure; (iii) promoting increased employment opportunities for women; and (iv) building executing and implementing agencies' (EA/IA) institutional capacity for gender mainstreaming. The Fuzhou Investment and Development Company (FIDC) and the project management office (PMO) were responsible for the overall GAP implementation. One staff in the PMO was assigned to take charge in GAP implementation, with each EA/IA assigning one gender focal point, respectively. During project implementation, an individual consultant was engaged to assist the PMO and EA/IAs in the GAP implementation, delivering trainings to the FIDC and PMO staff as well as to the local officials on gender equity and GAP implementation. Data on implementation of the GAP were collected on a regular basis and six monitoring reports on GAP were submitted to the PMO and Asian Development Bank (ADB).

C. Project Gender Achievements

3. As presented in the GAP Matrix, the implementation of the GAP was successful: 100% of 12 activities were completed and 4 (100%) of 4 quantitative targets were fully achieved. The project gender results at completion are assessed as successful. The achievements are summarized into the following practical and strategic gender benefits.

D. Practical Gender Benefits

4. **Improved and increased access, mobility, and safety for women.** The project constructed a new urban transport hub with bus terminal and support facilities, built and operated a BRT system of 12.5 kilometer (km). As a result, the percentage of railway passenger using the BRT reached at least 30% in 2020. Share of person-trips by public transport increased from 9.1% in 2011 to 25% in 2020.¹ An updated modern urban transport system has helped improve people's mobility and enhanced accessibility to employment and economic opportunities for all residents,

¹ The increased share of person-trips from 9.1% in 2011 to 25% in 2020 indicated that women's usage and access to public transport has been solidly enhanced, as women make up the core group of public transport users.

greatly improving the accessibility of public transport and convenience of lives of local people, particularly women. Women are enjoying increased transport access to work and essential social services including health, education, heightened mobility, and travel safety in the project area with reduced cost and time. The average speed of the buses in the BRT corridor reached 23–28 km per hour. The improved bus rapid transit (BRT) system and the construction of a new transport hub brought significant conveniences for residents, particularly women in Fuzhou. Transfer time between BRT bus terminal and railway station platform has reduced to less than 5 minutes by 2020. An updated modern urban transport system has helped improve people's mobility and enhanced accessibility to employment and economic opportunities for all residents, greatly improving the accessibility of public transport and convenience of lives of local people, particularly women. Women are enjoying increased transport access to work and essential social services including health, education, heightened mobility, and travel safety in the project area with reduced cost and time.

5. Enhanced gender-sensitive infrastructure design in BRT system and transport hub infrastructures in Fuzhou. All 141 BRT buses in operation and the new transport hub were equipped with priority seating for people with special needs (pregnant women, parents with young children or prams, elderly, and people with disability). All 14 BRT stations were equipped with priority seating for people with special needs. "Help buttons" and security cameras on all BRT buses, at all BRT stations and the new transport hub were installed, enhancing the safety of women while traveling by buses. All BRT buses and stations, station access roads, Fenggang River greenway, and the new transport hub were equipped with good lighting system, ensuring that all these areas are well-lit, reducing safety risks for women. Special notice board announcing priority boarding for people with special needs were also installed in the transport hub. Public separate toilets were erected in bus terminal waiting areas, with 14 squats each, sufficiently equipped for passengers and visitors.

6. Women's active and equitable participation enhanced. Women's enhanced access to decision-making and their participation during consultations with people affected by the resettlements, as well as in project related workshops and trainings has contributed to increased women's equitable participation in community and infrastructural building decision-making processes. 324 women of 646 total participants (50.15%) took part in 8 public consultations on project design and implementation, and their view on resettlement. At these consultation meetings, villagers were consulted on the scope, compensation standards, and public notice of resettlement. As most of affected families' men work outside of their homes as migrant workers, women have become the main participants in confirmation of housing areas, signing of resettlement agreements, and registration of housing properties in the affected areas. Gender training for project staff has influenced participating village leaders to be gender sensitive in protecting women's rights in the resettlement processes.

E. Strategic Gender Benefits

7. Increased women's voice, leadership, and decision-making. As soon as the BRT system was in operation in 2019, an all-women driver's team was set up by the Fuzhou Municipal Bus Company to take charge for the operation of BRT bus line, a bold move for the company, and a positive sign of recognition of women's potential and contribution, and heightened respect for women from the company and society. A total of 34 women drivers were selected from the existing drivers and newly recruited drivers, based on merits, to manage and drive 17 BRT buses, fully in charge of the operation and maintenance of the fleet. Their proactive engagement in operating the BRT fleet has significantly strengthened gender equity feature in the entire sector.

The first all-female drivers' fleet in Fuzhou City has taken the BRT bus service with more gender sensitive approaches, safer driving and more considerate interactions for all passengers and visitors. The all-women driver fleet had become a 'Name Card' of Fuzhou and received high recognition and due respect from the public and the municipal government, securing men's increased support for women's participation and leadership in the public transport sector, and willingness to encourage and appreciate women's leadership. Interviews ² with the representatives of the all-women driver fleet confirmed that they are more respected, harnessing more self-confidence and more decision-making power and economic power. These women drivers earn an additional CNY300 per month than other drivers, a sign of importance attached by the city leadership to BRT women drivers.

8. **Human development enhancement.** Five annual trainings on gender equity, GAP implementation and monitoring for project staff including PMO and contractor staff, as well as staff from Chonggang township and other relevant stakeholders such as affected villagers, were conducted by the gender consultant. A total of 41 participants were took part in the trainings, of which 10 were women (24.39%). Among the 41 participants, 5 were from the PMO, 2 from the bus company, 2 from the transport hub, 2 from the greenery maintenance company, 5 village representatives affected by the resettlement, and 25 staff of the contractors. As part of the project capacity building, these trainings have strengthened their awareness in gender equity and management capacity in achieving project gender results.

9. **Women's economic empowerment.** The project has ensured improved access to better jobs and higher incomes for women. The BRT system, transport hub and bus terminal, station access roads, Fenggang River greenway have created a steady and long-term employment environment that led to enhanced economic empowerment for women. A total of 858 jobs were created during the project construction, among which 416 were women, accounting for 48.5% of the total. During the operation period, 119 new jobs were created including 58 (48.7%) taken by women, 8 of 14 (57.14%) greenery maintenance and landscaping jobs were filled by women, providing them good income with monthly salary of CNY4,000. Equal pay for equal work was applied both in construction and operation. During the construction period, the total yearly income generated for women through jobs including engineers, information collectors, cooks, construction workers and cleaners, reached about CNY34,944,000 (with average monthly income of CNY7,000). During the operation period, the total yearly income generated for women through jobs including midlevel managers in bus companies, greenery and landscaping workers, drivers, attendants, and cleaners, reached about CNY6,426,000 (with average monthly income of CNY4,500). The economic empowerment has enabled women in the project area to gain economic independence at home and became more confident and equal partners in the family affairs and community decision-making.

² Field interview with Ms. Xu Qing, Head of the All-women BRT Drivers' Fleet, Ms. Chen Qiaohua, Deputy Manager of the BRT sub-company, Mr. Xie Baozhang, Manager of the BRT sub-company, and Mr. Xu Wenpan, Office Manager of the BRT sub-company, 8 September 2021.

Case story 1: Economic Empowerment for Women conductor

Ms. Wang, in her late 30s, was a mother of two children, who now works in the Fuzhou Public Transport Company as the BRT station conductor. She stopped working when she gave birth to her second child and spent 3 years as a full-time mom taking care of the young child. The economic burdens of raising two children set in and she needed to find a job. She found out that the Bus Company was recruiting BRT station conductor and applied for the job and got it. It has been more than 1 year, and she liked the job, as it gives her a steady monthly income of CNY3,500, easing her family economic burden, while she has almost half day minding her children (it's a two person shifts in each station, with one conductor working for half day.) Ms. Wang was content with the support she's received, citing trainings on BRT equipment operation, work safety, labor law, and friendly and human-centered management. She said during the interview that the job has ensured that she has economic independence and contributes to the family in a positive way, "I feel good that I have this job."

^a Field interview with Ms. Wang Siyi, the station conductor from Fuzhou Public Transport Company, 8 September 2021.

10. The project was successful in completing and achieving 100% of 12 activities, and 4 (100%) of 4 quantitative targets (including 4 in the GAP and 1 overlapping targets in the DMF). Important features with direct gender benefits were included in the design and monitoring framework (DMF) and successfully achieved include: (i) lighting, security cameras, and help buttons were installed in all 19 BRT stations and vehicles to ensure the safety of women and other vulnerable users; (ii) all BRT stations and buses were installed with priority seating for people with special needs (pregnant women, parents with young children in prams, the elderly, people with disabilities); (iii) sufficient lighting, security cameras, and help buttons were installed in bus terminal to ensure the safety of women and other people with special needs; (iv) a total of 453 construction jobs were created under Fenggang River greenway, of which 264 (58.28%) were taken by women. Eight (57.14%) out of 14 of the greenery maintenance and landscaping jobs were filled by women; (v) A total of 41 key staff including 10 women (24.39%)³ of executing and implementing agencies and PMO were trained on project management, procurement, disbursement, safeguards, and gender requirements; and (vi) 1,018 (100%) BRT drivers and conductors, including 407 women (40%), were trained on women's safety needs.

F. Lessons Learned and Recommendations

11. Overall, the implementation of the GAP was successful in achieving the objectives. The relevance of gender issues to achieving the project objectives are strong, as demonstrated in the above analysis on the GAP implementation. The assignment of gender focal point staff by PMO and PIAs proved to be instrumental in ensuring effective monitoring of GAP implementation. Effective training on gender equality and GAP implementation has ensured that the PMO and PIAs were clear about actions and targets, and took due care of the GAP implementation, hence contributing to effective and efficient monitoring of the GAP. The highlight of an all-women driver fleet for BRT bus system could be documented and shared with wider audiences across the PRC as an innovation in achieving gender equity. The EA was supported by both project social and gender consultant and ADB through regular communications and training delivering detailed instruction and discussions on gender awareness, GAP implementation and data collection. During the coronavirus disease (COVID-19) pandemic, the online training had ensured continued ADB technical support on Gender equity efforts taken by the project. Prior to the PCR mission, ADB

³ Among the 41 participants, 5 were from the PMO (1 woman and 4 men), 2 from the bus company (1 woman and 1 man), 2 from the transport hub (1 woman and 1 man), 2 from the greenery maintenance company (1 woman and 1 man), 5 village representatives affected by the resettlement (2 women and 3 men), 25 staff of the contractors (4 women and 21 men).

specialist dedicated a solid two weeks' time to coordinate with the gender and social development consultant on data assessment and consolidation, paving the way for effective PCR mission and report. The lesson learned in this regard suggest more online personal advice session on top of training, and more interactive virtual meetings to enhance ADB guidance and support.

Table A9: Gender Action Plan Achievements Matrix

Actions/Activities	Targets/Indicators	Achievements
Output 1: Bus Rapid Transit (BRT) system		
<p>1. BRT system physical design will include:</p>	<ul style="list-style-type: none"> • Priority seating for people with special needs (i.e., pregnant women, parents with young children or prams, elderly, and people with disability) in all buses and stations • Safe pedestrian access, including for people with special needs • Installation of 'help buttons' and security cameras on all BRT buses and at all stations • Well-lit buses and bus stations – <p>Aligned with DMF Output 1. "Lighting, security cameras, and help buttons installed in all BRT stations and vehicles to ensure the safety of women and other vulnerable users"</p> <p>"Priority seating for people with special needs (pregnant women, parents with young children in prams, the elderly, people with disabilities) in all BRT buses and stations"</p>	<p>Completed (100%)</p> <ul style="list-style-type: none"> • All 141 BRT buses in operation were equipped with priority seating for people with special needs (pregnant women, parents with young children or prams, elderly, and people with disability), located near the doors. All 14 BRT stations were equipped with priority seating for people with special needs. • Safe pedestrian access was constructed for people with special needs, with passes for blind equipped at each pedestrian passes, connecting the BRT stations. The detailed design for the access roads considered special needs for vulnerable people by designing extra zebra crossing pathways. • "Help buttons" and security cameras on all BRT buses and at all BRT stations were installed. • All BRT buses and stations were equipped with sound lighting system, security cameras, and help buttons the safety of women and other vulnerable users." Field observation proved that the BRT buses and bus stations are bright and well-lit at night and user friendly.
<p>2. Employ at least 25% women in new jobs including BRT drivers, ticketing and fare collection works, administration work)</p>	<p>QT1. 25% women in new jobs</p>	<p>Achieved (100%) A total of 65 new jobs were created, including BRT drivers, ticketing and fare collection works, administration etc., of which 32 (49.23%) were taken by women. Equal pay for same type of work have been applied, with average monthly salary of CNY4,500 for men and women.</p>

Actions/Activities	Targets/Indicators	Achievements
3. Ensure re-employment of female bus drivers from pre-existing bus routes which are replaced by the BRT system		<p>Completed</p> <ul style="list-style-type: none"> Out of a total of 300 drivers were affected by the introduction of BRT system, of which 81 were women and 219 were men. The bus company had made adequate arrangement for these affected drivers to transfer to other bus lines or stay in their current jobs. As a result of the rearrangement, 75 women of the 81 affected female workers are now working in the BRT sub-company and the rest of 6 were rearranged to work in the operation sub-company. Field interview with the bus company representatives confirmed all the affected drivers were reemploy in the company without loss of their jobs and decrease of their income. The company has ensured that equal pay for same type of work for men and women, with average monthly salary of CNY4,500 for men and women.
4. Ensure equal pay for work of equal value for all BRT jobs		<p>Completed</p> <p>The bus company, in accordance with the national labor laws including the Contract Law, ensured that equal pay for work of equal value for all BRT jobs, and the rights of women workers equally protected. Field interview with BRT women drivers and bus company manager confirmed the equal pay of equal value with an average monthly income of CNY4,500.</p>
Output 2: Urban transport hub and bus terminal		
5. Transport hub and bus terminal physical design will include:	<ul style="list-style-type: none"> Priority seating in waiting areas and accessible walkways for people with special needs (i.e., pregnant women, parents with young children or prams, elderly, people with disability) Installation of 'help buttons' in key locations Well-lit areas in and around the hub and terminal Higher capacity female toilets and bathrooms <p>Aligned with DMF Output 2. "Lighting, security cameras, and help buttons installed in bus terminal to ensure the safety of women and other</p>	<p>Completed</p> <ul style="list-style-type: none"> The new transport hub was equipped with 8 priority seats in each of the 2 waiting areas, for people with special needs (pregnant women, parents with young children or prams, elderly, and people with disability). Special notice board announcing priority boarding for people with special needs were also installed in the hub. A total of 192 Help Buttons were installed at the Station Affairs Room and safety doors for people with special needs, and fire extinguishers were placed at the two waiting areas. The transport hub and bus terminal were equipped with quality lighting system, security cameras, and help buttons in all bus terminal to ensure the safety of women and other vulnerable users." The detailed design for the access roads considered special needs for vulnerable people by designing extra zebra crossing pathways. Public separate toilets were erected in bus terminal waiting areas, with 14 squats each, sufficiently equipped for an estimated 2,565 women

Actions/Activities	Targets/Indicators	Achievements
	vulnerable users"	visitors, out of 5,700 total visitors daily (6 a.m. to 8 p.m.).
6. Employ at least 30% women in all kinds of new jobs (e.g., terminal attendants, cleaners)	QT2. 30% women in all kinds of new jobs	Achieved (100%) A total of 35 new jobs (terminal attendants, cleaners, and others) were created, including 15 jobs taken by women (42.86%).
Output 3: Fenggang River greenway		
7. Provide adequate number of male/female toilets in the greenway		Completed A total of 18 public toilets (separate toilets) were built along the Fenggang River Greenway, providing sufficient toilets for 80 visitors daily, of which over half (50%) are women. The toilets in the "greenway" were designed to accommodate needs for disabled and elderly people including women.
8. Ensure well-lit paths around and within the greenway after dark		Completed LED lights were installed along the Fenggang River embankment, providing well-lit paths around and in the greenway at night times, reducing safety risks for visitors, in particular women.
9. Employ at least 50% women in greenery maintenance and landscaping jobs	QT3. at least 50% women in greenery maintenance and landscaping jobs Aligned with DMF Output 3. 50% of the greenery maintenance and landscaping jobs were filled by women	Achieved (100%) <ul style="list-style-type: none"> During the construction period, a total of 453 construction jobs were created under Fenggang River greenway, of which 264 (58.28%) were taken by women. During the operation period, 8 women (57.14%) were employed to work in 14 greenery maintenance and landscaping jobs, responsible for mainly tree planting and weeding along the 4.5 km greenway constructed by the project.
Output 4: Station access roads		
10. Employ at least 20 % women in all types of new jobs at equal pay for work of equal value	QT4. Employ at least 20% women in all types of new jobs at equal pay for work of equal value	Achieved (100%) During the construction period of the station access roads, a total of 195 workers were employed, of which 62 (31.79%) were women, working as operators, archiver, construction worker, and cleaners. Equal pay for work of equal value was observed, with an average monthly salary between CNY6,000 to CNY8,000.
11. Ensure pedestrian walkways along access roads and crossings are accessible and safe - including for people with special needs -have sufficient roadside lighting		Completed Special tactile paving for blind was installed at the specially designed pedestrian crossing points and pedestrian walkways along access roads and crossings, with safety measures in place, such as concrete divisions and marked areas of crossings, ensuring access roads are accessible and safe for all pedestrians, particularly people with special needs. Sound and sufficient LED lighting facilities were installed along the access roads to strengthen the safety.

Actions/Activities	Targets/Indicators	Achievements
Output 5: Institutional strengthening and capacity building		
Recruit gender consultant(s) to support GAP implementation		Completed One Gender consultant was engaged and provided technical support to the PMO in the GAP implementation including training on gender equity, monitoring, and reporting of the GAP.
Appoint a project staff responsible for gender mainstreaming and GAP implementation and reporting.	Appoint a project staff responsible for gender mainstreaming and GAP implementation and reporting.	Completed One Gender Focal Point was assigned in the PMO, who is responsible for the overall coordination and supervision of the GAP implementation, monitoring, and reporting. In the meantime, each IA has also appointed their Gender Focal Points for GAP implementation, monitoring, and reporting, forming a team of 10 female Gender Focal Points (33.33%).
Provide GAP orientation/training to key EA/IA staff	Aligned with DMF Output 5: “Staff of executing and implementing agencies and PMO trained on project management, PPMS, procurement, disbursement, safeguards, and gender requirements.”	Completed During project implementation, the gender consultant delivered five trainings on gender equity, GAP implementation and monitoring for key project staff including PMO and contractor staff. A total of 41 participants were trained in 5 trainings, of which 10 were women (24.39%). ^a
12. Provide training for bus drivers and conductors on women's safety needs	Aligned with DMF Output 5: “BRT drivers and conductors trained on women's safety needs”	Completed The gender consultant delivered training for the managers of the bus company on road safety needs of women and supported these managers to provide cascade training for drivers and conductors they manage. Fuzhou Public Transport Company carried out monthly training for drivers on road safety and paid particular attention to safety relating to pregnant women, elderly, and people with disabilities. A total of 1,018 (100%) bus drivers and conductors were trained, including 407 women (39.99%). Field interview with female conductors confirmed that such training has improved her awareness and knowledge on better protection of women's safety at the BRT station.
Gender Design features of Resettlement Plans		
Ensure at least 50% female participation in public consultation	at least 50% female participation in public consultation	Achieved (100%) 324 women of 646 total participants took part in 8 project public consultations including public views on resettlement, accounting for 50.15% of the total. At these consultation meetings, villagers were consulted on the scope, compensation standards, and public notice of resettlement. The post consultation telephone interviews with 20 participants including 7 women (35%) presented a 100% satisfaction rate.

Actions/Activities	Targets/Indicators	Achievements
<p>Include 50% women in livelihood restoration training for affected people. To reach these targets IA will publicize these provisions during public consultations and will encourage the women to participate in the training.</p>	<p>50% women in livelihood restoration training for affected people</p>	<p>Achieved (100%)</p> <ul style="list-style-type: none"> • Livelihood restoration/skills training on welding, electrical work, cooking, planting, and animal husbandry was conducted by Linchuan Municipal Labor Bureau and Chonggang Township government for 210 affected people, of which 112 were women (53.33%). These training opportunities were communicated during public consultations and women's participation was encouraged. • The Fuzhou Labor Bureau also published and updated timely job information on its website, including shoemaking, garment-making, hotel service and gardening, which can be accessed by people affected by the resettlement, in particular women.
<p>Ensure that women and men are equally entitled to new house registration, and both names are reflected on titles if requested</p>		<p>Completed</p> <p>As most of affected families' men work outside of their homes as migrant workers, women have become the main participants in confirmation of housing areas, signing of resettlement agreements, and registration of housing properties in the affected areas. Gender training for project staff has influenced participating village leaders to be gender sensitive in protecting women's rights in the resettlement processes. After the capacity building training for project staff, village leaders have included women's equal rights in their entitlement to new house registration in their communications with affected villagers, both men and women. By the time of reporting, the individual household property ownership certificates are in the process which ensured that both names are reflected on titles if required. For details, see evaluation of Resettlement Plan.</p>
<p>Provide additional support to women whose farmland becomes remote from their home due to the displacement (e.g., transport allowances, training priority)</p>		<p>Completed</p> <p>Local government provided additional resettlement subsidy of CNY800 per household, in accordance with the municipal policy on appropriation of collectively owned lands in rural areas in Fuzhou. Details see evaluation of Resettlement Plan. Livelihood restoration/skills training on welding, electrician, cooking, planting, and animal husbandry was conducted by Linchuan Municipal Labor Bureau and Chonggang Township government for 210 affected people, of which 112 were women (53.33%).</p> <p>Field interviews with women affected by the resettlement revealed that the local government's planning to build a middle school near their resettlement area had created demands from large numbers of parents and children to rent apartments near the school. As a result, these women have</p>

Actions/Activities	Targets/Indicators	Achievements
		made steady and sufficient income from renting of rooms in their new houses, freeing them from working on farmland and doing migrant work. As Ms. Chen shared, she now makes about CNY60,000 annually from rent income, a strong economic income source that can sustain for years.

BRT = bus rapid transit, DMF = design and monitoring framework, EA = executing agency, GAP = gender action plan, IA = implementing agency, PMO = project management office, QT = quantitative target.

^a Among the 41 participants, 5 were from the PMO (1 woman and 4 men), 2 from the bus company (1 woman and 1 man), 2 from the transport hub (1 woman and 1 man), 2 from the greenery maintenance company (1 woman and 1 man), 5 village representatives affected by the resettlement (2 women and 3 men), 25 staff of the contractors (4 women and 21 men).

^b Field Interview with Ms. Chen Youfang, Ms. Zeng Xiaomei, and Mr. Gong Fulong from Zhujia Village, Chonggang Township, 8 September 2021.

Source: Asian Development Bank project completion mission.

ENVIRONMENT SAFEGUARD COMPLIANCE

A. Introduction

1. The project is an urban integrated infrastructure improvement project, involving the construction of four components: (i) four station access roads consisting of 9.1 kilometer (km) of new Class II road, to provide access to the new railway station and includes utilities, streetscape improvements and improved traffic management, (ii) upgraded public transport system consisting of 12.5 km of bus rapid transit (BRT) between the new station and the city center, (iii) an urban transport (multimodal) hub including new city bus/BRT, long-distance bus terminals, taxi facilities and parking for bicycles, motorcycle, and automobiles, and (iv) Fenggang River improvement and park development project to extend an existing park corridor along the river providing an urban “greenway” for nonmotorized transport linking the old city with the new station development area. The Global Environment Facility (GEF) grant expands and enhances the project outputs to reduce the energy consumption and carbon intensity of public transport. The GEF-financed activities include: (i) reducing the greenhouse gas intensity of bus operations, (ii) upgrading BRT buses to compressed natural gas, and (iii) providing compressed natural gas buses for BRT feeder services.

2. The Project is classified as category A for environment. The domestic environmental impact assessment (EIA) was prepared by the Jiangxi Provincial Environmental Science and Design Research Institute and submitted to the Fuzhou Environmental Protection Bureau (FEPB). The domestic EIA of the whole Project was approved by FEPB in 2012. An environmental impact assessment, including an environmental management plan (EMP) and an environmental monitoring plan in accordance with ADB’s Safeguard Policy Statement 2009 was prepared and disclosed on ADB website in May 2012. A set of comprehensive mitigation measures included in the domestic EIA went through a series of government consultation processes. Regarding the scope change of BRT corridor realignment, FEPB approved the updated domestic EIA report on 16 January 2016. The Addendum to EIA on the BRT corridor realignment was correspondingly prepared and disclosed on ADB website in September 2017.

3. The construction started in 2013 and the initial test operation was carried out from late December 2018 to December 2019. FEPB confirmed that domestic environmental completion checks and acceptance are required for this project. The completion and acceptance field review for environmental protection and soil erosion protection were respectively conducted. The Environmental Review and Acceptance Report was completed in April 2021, while the Soil Erosion Protection Review and Acceptance Report was completed in May 2021. The environmental acceptance is expected to proceed with disclosure and complete independent acceptance procedures by 2021.

B. Institutional Arrangements

4. PMO was established by the Fuzhou Municipal Government (FMG), the project executing agency, with overall responsibility for the environmental management of the Project, including fulfilling EMP implementation and environmental monitoring and reporting requirements. FIDC and Fuzhou Public Transport Company, the implementing agencies were responsible for daily project environmental management. The institutional arrangements for the Project’s environmental management as agreed at appraisal and as implemented are shown in Table A10.

Table A10: EMP Responsibilities and Summary of Implementation Status

Duties and Responsibilities Agreed at Project Appraisal	Implementation Status
Project Executing Agency: Fuzhou municipal government Overall responsibility of the project' environmental management, including EMP and EMOP	Complied. Established PMO and ensured proper implementation of project environmental management plan and environmental monitoring plan.
Project Implementing Agency: PMO/ FIDC and Fuzhou Public Transport Company	Complied. Environmental management team was established with two staff. During project construction, the environment, health and safety was closely coordinated in EMP implementation, including supervision of contractors' EMP performance and compliance. An environmental protection steering team, led by a deputy general manager of PIAs, was organized and provided close supervision for EMP implementation.
1. Establishment of environmental monitoring unit	Complied. All the bidding documents and contracts had environmental clauses and EMP provisions.
2. Environmental clauses and EMP provisions in all bidding documents	Complied. Detailed site-specific EMP including soil and water conservation and air pollution and noise control measures were prepared and approved by local EPB.
3. Preparation of EMP execution schedule for contractors	Complied. Regular site visits, inspections, and supervision were carried out.
4. Supervision of contractors to comply with the EMP provisions	Complied. Since bus rapid transit commercial operation began in late 2018, the IAs have been implementing environmental safeguards measures (engineering management units of these bureaus are responsible).
5. Implementation of operational phase EMP	Complied. There was close communication and cooperation in implementing mitigation measures with local EPB and other concerned bureaus.
6. Direct communication and cooperation with local government agencies for environmental protection and EMP and EMOP	Complied. An independent environmental monitor was engaged beginning in 2014, and provided annual environmental monitoring reports which indicate full compliance with applicable standards and the EMP.
7. Engagement of independent environmental monitors	Domestic construction supervision companies were involved in and closely supervised and managed construction. Supervision to ensure proper environmental management planning and execution was a priority concern and working area of those construction supervision companies.
8. Supervision engineering companies	Environmental management was taken seriously by contractors. Contractors implemented good environmental management practices, actively contacted relevant local authorities, and followed the agreed environmental management in their contracts.
9. Contractors	

EMP = environmental management plan, EMOP = environmental monitoring plan, EPB = environmental protection bureau, FIDC = Fuzhou Investment Development Company, IA = implementing agency PMO = project management office.

Source: Project Management Office.

C. Environmental Impacts and Mitigations

5. During project implementation, the site-specific environmental protection plan was substantially developed, and mitigation measures specified in the EIA/EMP were successfully implemented. By the project completion review mission, no unexpected adverse environmental impacts other than those predicted in the EMP were identified, and no occupational health and safety accidents occurred. The environmental protection measures undertaken during construction and operation are summarized below:

6. **Water and soil conservation.** *At construction stage*, soil-related impacts mitigation measures included such preventive and mitigation construction practices as minimizing areas of soil clearance, selecting less erodible materials, planting vegetative cover immediately after fill placement, and finishing discharge zones from drainage structures and channel embankments with riprap. A spill management plan for preventing contamination of soil from accidental spills of petroleum products and hazardous materials was developed and implemented. To prevent accidental leakage of petroleum products and hazardous substances, the management plan for soil pollution leakage was formulated and implemented. The total excavation volume of Fenggang River regulation subproject is 1,057,000 cubic meters (m³), of which 885,000 m³ were reused as backfill, and the remaining 172,000 m³ were disposed to the designated sites supervised by the Municipal sanitation Bureau. During operation, monitoring of stormwater runoff and soil is being carried out.

7. **Solid waste.** During construction, urban disposal site was used for dumping demolition waste. The construction solid waste was transported and disposed at the designated construction waste sites. A total of 560,000 m³ of demolition waste was generated from house demolition, 112,000 m³ of construction waste, mainly waste doors and windows, were classified, and handed over to the local environmental sanitation agencies for treatment, and 448,000 m³ of demolition waste, mainly cement and bricks, were transported and finally disposed at the landfill disposal approved by the Urban Management Bureau. During operation, maintenance of the urban road is organized, including to clean the roads and drainage systems, and to collect solid waste, etc.

8. **Surface and groundwater.** During construction, sewage and stormwater pipelines were designed to higher standards and ground sections under these pipeline networks were insulated. During construction of utility facilities, accumulated runoff or groundwater was pumped off the site and discharged into a permanent drainage system through silt traps. A groundwater channel was applied where the water table was expected to rise due to potential blocks in the groundwater flow. Water was regularly monitored during construction. During the operation stage, upgrading and construction of new roads with improved drainage systems reduce erosion from the roadway and result in water quality improvements.

9. **Air quality.** During construction, mitigation measures included environmentally friendly construction practices and best available pollution control measures. During operation, the waste gas pollution is mainly caused by the fuel waste gas of vehicles during road operation. Measures such as road pavement maintenance, vehicle speed limit and planting greening are taken to prevent ambient air pollution. According to operational air quality monitoring through 2017 to 2019, the air quality levels at all representative receptors complied with national standards in corresponding functional areas.

10. **Noise.** During construction, several mitigation measures was applied including source controls, site controls, schedule of construction time, baseline, and routine noise monitoring. During operation, according to operational noise monitoring from 2017 to 2019, the noise levels at all representative receptors complied with national standards in corresponding functional areas.

11. **Biodiversity.** The relevant requirements for ecological protection were strictly observed, all the green belt plants damaged during the road construction were transplanted, and the landscape greening design was incorporated into the project design. Before the implementation of Fenggang River reconstruction project, the original ecosystem was mainly characterized by artificial vegetation and crops, wild animals were mainly common animals in mountain streams and ditches, and aquatic fish were mainly grass carp, silver carp and crucian carp. According to

the investigation, no rare animals and plants were found. The biodiversity protection measures for Fenggang River subproject mainly include: (i) increasing the shape diversity of ecological islands, such as heart-shaped, moon shaped and U-shaped, so as to enrich the landscape diversity, prolong the stagnant time, effectively settle the sediments and purify the water quality; (ii) the vegetation configuration on gentle slope is mainly local tree species, and waterlogging resistant woody trees are selected near the water area; wet plants were mainly selected near the water area; (iii) building a natural river landscape, including gradually opening an S-shaped river channel according to the existing terrain, with special attention to the connection with the existing river channel; (iv) simulating the existing riverbed structure and built the channel terrain layer by layer to reduce the impact and erosion on the river bank; and (v) maintaining the original river runoff for a certain period to ensure the natural restoration of vegetation communities.

12. **Trees.** A tree management plan was developed and implemented by Bureau of Parks and Woods of Fuzhou. It included a site-specific, detailed tree inventory, as well as procedures and schedule for tree relocation and conditions for felling. The plan also defined the locations for trees to be moved, as well as procedures and monitoring to increase the survivability rate. During construction, the PMO appointed professional landscaping companies to remove and replant the trees. Along BRT route, where a total of 72 trees identified at appraisal, were well transplanted and all survived (100% survival rate). Professional gardeners were hired to take care of these trees. During operation, the trees have positive environmental impacts on urban landscapes, contributing to soil erosion control, improving air quality, and creating microclimate. To some extent, roadside trees also provide noise protection.

13. **Health and safety.** To ensure environment, health, and safety implementation, the contractors formulated the occupational health and safety plan, and designated the project managers to take full leadership responsibility for the occupational health and safety work in the whole process of project construction. The contractors regularly organized and hold routine project safety meetings, analyzed the on-site safety situation, and carried out occupational health and safety management system training for the workers. the personal protective helmets were distributed to the construction machinery operators in accordance with labor insurance standards. There are no major safety problems in the process of project implementation. For community health and safety, the traffic control and operation plans were prepared. The residents and businesses were informed in advance and clear signs were placed at the construction sites. During operation, the road safety action plan was prepared and an appropriate emergency response in the event of an accident or emergency were considered, having emergency prevention, preparedness, and response arrangements in place.

14. **Social issues and urban infrastructure.** At construction stage, the impacts on urban traffic were temporarily and managed, including close cooperation with the relevant urban infrastructure departments. Temporary electricity and water supply schemes were developed in coordination with relevant authorities to supply construction works with electricity and water. The PMO developed a traffic management plan to prevent congestion and traffic jams by consulting with the Traffic Police Department. Information on the urban construction status was provided through television, radio, and newspapers to the public. Bulletin boards were set up to publicize the objectives of the Project, construction timetable, and grievance hotline. Safety measures were adopted for pedestrians' and residents' safety and convenience. These included footbridges, fences, and appropriately situated lighting. In the operation stage, the project is anticipated to have positive impacts on the social environment and urban infrastructure.

15. **Cumulative and induced impacts.** In the operation stage, traffic volume on the main roads between the city center in the with-project case are much greater than the traffic volume in

the without-project case, while the speed of buses is increased and the percentage of bus users among commuters also increased. The BRT system also has positive impacts on traffic flow on the road and alleviates the adverse environmental impacts associated with increased traffic volume. In addition, FMG is carrying out citywide air pollution and noise monitoring. As a mitigation measure, a strategic approach aimed at reducing air pollution in Fuzhou is being implemented by FMG including shutting down several factories that emit large amounts of pollutants, reducing emissions from energy sources with severe air pollution, replacing public transport vehicles and taxis with clean energy, and strengthening afforestation of the mountain slopes around the city.

D. Environmental Management and Monitoring

16. Independent environmental monitors were engaged throughout the project construction stage to conduct regular site visits, monitoring of performance of environmental mitigation measures, and prepared EMRs. The EMRs recorded that the project implementing agencies also conducted regular site visits and inspections throughout construction stage, and closely cooperated with Fuzhou EPB and other relevant authorities for environmental monitoring, including water/air/acoustic quality, and soil erosion impact monitoring. A total of eleven EMRs were prepared and disclosed on ADB website during 2014 to 2020, which contained data on engineering progress, and environmental management status including implementation of mitigation measures, with a focus on water and soil conservation, air quality and noise control, recreation of habits for biodiversity, occupational and community safety management, and supervision and inspection records.

17. The environmental monitoring report shows that all subprojects of the project strictly comply with all environmental laws, regulations and procedures of the state, local and local governments, as well as ADB's Safeguard Policy Statement (2009). The mitigation and measures and monitoring program as defined in the EMP were effectively implemented. The external monitoring reports shown that the monitoring results of ambient air, water environment and acoustic environment met the requirements of corresponding standards without exceeding the standard. The construction and operation activities caused limited impact on the surrounding environmental quality and were prevented or reduced to an acceptable level. The environmental cost reached a total of CNY48,027,300, slightly exceeding the cost estimated at appraisal (CNY47,681,400), covering the cost for water and soil conservation measures at CNY38,027,300 (CNY39,165,800 was estimated), cost for environmental protection measures at CNY9,600,000 (CNY8,206,000 was estimated) and cost for environmental quality monitoring at CNY400,000 (CNY309,600 was estimated).

E. Environmental Benefits

18. **Greenhouse gas (GHG) emission reduction.** The changes in land use and population density associated with new urban development induced adverse cumulative effects on air quality and increased GHG emissions. However, the BRT greatly encouraged modal shift and contributed to a net reduction of emissions from a combination of mode shifting, improving average speeds in the corridor, and resulting in less idling times and stop-start driving, as well as establishing improved management practices. Additionally, GEF-funded activities contributed to reduction of GHGs emission by further refine of BRT infrastructure design, improved operation efficiency, eco-driving and maintenance, upgrading to electric buses, and catalytic effect on BRT feeder services.

19. For access roads, based on the traffic volume monitored in 2020, the first year for operation, the actual carbon dioxide (CO₂) emission was estimated at 1,695.18 tons per annum (t/a), far less than the estimated CO₂ emission of 15,332 t/a. The reason is mainly attributed to

the relatively low traffic volume before reaching fully road operational capacity. For the BRT subproject, the introduction of BRT and replacement of the current bus fleet with electric bus provided cleaner and more environmentally sustainable travel options. Over the 20 years project lifetime, the GHG savings for the 12.5 km BRT with associated infrastructure upgrades is estimated at 0.92 million tons, while the GHG avoided from the incremental GEF-funded activities (direct and indirect) is estimated at 0.53-0.66 million tons.

20. **Climate change mitigation and adaptation.** The Fenggang River greenway reduces the flood risk while creating a new urban park and encourages a shift to nonmotorized transport. Project development occupies an area that is principally agricultural and residential land, scattered woodland, and habitats along the Fenggang River. These habitats are modified and do not have significant biodiversity value but compensated for with the creation of habitats and features of value for biodiversity in the design of the park and river improvement works. A qualified design and survey institute was recruited to conduct the flood control evaluation from May 2020. According to the information provided by the Municipal Gardens Bureaus, the comprehensive evaluation on the Fenggang River flood control based on the river improvement project for phase I, II and III is undergoing, and the official evaluation results are expected to be provided by June 2022. According to the preliminary flood control assessment report for the proposed Fenggang River Wetland Park Project (located in the river beach at the intersection of Fenggang River, Linshui River and Fuhe River), the west embankment of Fuhe River (west embankment of the city) reaches class I protection level to meet the flood control requirements of the combination of embankment and reservoir with a return period of 50 years, and the current flood control capacity of Zhongzhou embankment reaches a return period of 20 years.

21. The climate change related mitigation measures were prospectively considered and undertaken during project implementation. A total of 9,460 m² water permeable bricks were adopted in Fenggang River wetland park, which are expected to contribute to the rainfall peak flow reduction and groundwater replenishment. Extensive greening was carried out along the station channel and transportation hub. The renovation and improvement of Fenggang River and the construction of the park provided a broad green area. The area of public open space was significantly expanded. And carbon footprint was calculated for the BRT passengers, and incentive measures were undertaken for carbon emission reduction.

F. Information Disclosure and Public Consultation

22. During project implementation, extensive public consultations were carried out to discuss project impacts, including environmental impacts. This included public consultation meetings, targeted consultation meetings, surveys, interviews, and information disclosure and feedback. Over 1,800 individuals (also including passengers and drivers), 90 business enterprises, and 360 government officials were consulted or surveyed. During project construction and trial operation, the EMRs indicated that close dialogue and communication were carried out with local authorities and affected communities. A traffic management plan to prevent congestion and traffic jams by consulting with the Traffic Police Department was developed and implemented during implementation. During project completion review, the consultation was conducted, and 62 questionnaires were distributed. Public opinions were well sought and considered in March 2021. The findings shows that the stakeholders have a clear understanding of the potential environmental impacts of the project and their concerns are mainly focused on air (41%) and acoustic quality (30%), as well as ecological environment (27%). 100% of the those surveyed support the project, and 97% of them satisfied with the current environmental situation of the project area. 98% of the those surveyed consider the project greatly improved the water

environment of the Fenggang River, and more than 40% of them consider the transportation situation was improved by the BRT subproject.

G. Grievance Redress Mechanism (GRM)

23. The GRM was operated in a functional way during project implementation. FIDC established a project complaint center (PCC) and appointed full-time personnel responsible for GRM operation. The officer took the lead in handling complaints and dispute mediation, maintaining complaint database and communicating with supervision engineers, Fuzhou EPB and complainants. The Fuzhou EPB also appointed an officer as the contact point with PCC. The PMO and the municipal government disclosed the GRM procedure and contact information of PCC. The entry points were distributed at the entrance of each construction site and contractor's site office. FIDC and the independent external environmental consultant routinely inspected all project sites and confirmed compliance of GRM implementation. Alternatively, the complaints could also be collected through the municipal public complaint hotline 12345 and environmental complaints hotline 12369 managed by FEPB. There were no outstanding complaints or issues of safeguard-related non-compliance against ADB's Safeguard Policy Statement (2009) and domestic regulations were reported to ADB.

H. Institutional Strengthening and Training

24. A capacity building and training program has been defined in the project EMP, which addresses training needs for project personnel. Two environmental trainings were conducted to the environmental staff from the PMO, IAs, the contractors, and other related units. The main contents of training include responsibilities, procedures for EMP implementation, monitoring requirement and reporting system, as well as GRM implementation.

I. Conclusion

25. Overall implementation of the project EMP is satisfactory. The institutional arrangements followed the original project design. The EMRs were prepared as agreed and provided relatively sufficient information on the EMP implementation. No unexpected adverse environmental issue other than predicted at appraisal was identified. The project contributed to positive cumulative effects of the urban development through providing improved public transport with a modal shift to reduce traffic congestion and emissions, and the new urban linear park amenity resources. Along with the comprehensive development of the river improvement projects in Fuzhou, the project is expected to play important role in increasing flood storage capacity, reducing flood risk of the urban expansion area and downstream areas. At the time of the project completion review mission, there was no pending environmental safeguards-related non-compliance issue.

LAND ACQUISITION AND RESETTLEMENT

A. Background

1. The project is category A for involuntary resettlement. A resettlement plan was prepared during project preparation in June 2012. During project implementation, the resettlement plan was updated based on detailed design in December 2013. Based on updated resettlement plan, a total of 1,941.4 *mu*¹ (129.4 hectares) of collective lands will be acquired permanently by the project, and 1,347 households will be affected by permanent land acquisition; a total of 155,642.5 square meter (m²) houses or buildings will be demolished and cause the relocation of 446 households with 1,628 persons. The project construction will not have temporary use of land since the land within the project area is sufficient for stacking construction materials or building temporary houses for workers. A total of CNY328.667 million were budgeted for land acquisition and resettlement activities in the updated resettlement plan.

B. Scope of Land Acquisition and Resettlement

2. According to resettlement monitoring reports, a total of 1,438.6 *mu* collective lands were acquired permanently, 25.9% less than 1,941.4 *mu* in the updated resettlement plan; a total of 126,337 m² residential houses were demolished and affected 461 households with 1,850 persons. The decrease of land acquisition and house demolition amount was due to narrowed scope of Fenggang River component and its greenway as well as exclusion of commercial development area from the transport hub. The variations in the numbers of affected people were due to underestimate during updating of resettlement plan. Table A11.1 presents the actual project impacts versus those numbers in the updated resettlement plan.

Table A11.1: Project Land Acquisition and Resettlement Impacts

Items	Unit	URP	Actual	Variation	Percentage
A. Permanent land acquisition	<i>mu</i>	1,941.40	1,438.60	-502.80	-25.9%
B. House demolition	m ²	155,642.50	126,337.00	-29,305.50	-18.8%
C. Affected Households					
C1. Land Acquisition	HH	1,347	1,438	91	6.8%
C2. House Demolition	HH	446	461	15	3.4%
D. Affected Persons					
D1. Land Acquisition	person	4,955	5,750	795	16.0%
D2. House Demolition	person	1,628	1,850	222	13.6%

HH = household, m² = square meter, URP = updated resettlement plan.

Sources: Updated resettlement plan, resettlement monitoring reports.

C. Resettlement Policy and Compensation Rates

3. Land acquisition and resettlement was implemented in line with the updated resettlement plan, ADB's Safeguards Policy Statement (2009), and the relevant domestic laws and regulations, including Land Administration Law (updated in 2004), and State Council Circular on the Decisions of Deepening Reform and Adminstrating Land Strictly (No. 28, 2004), and relevant regulations issued by Jiangxi province and Fuzhou City, including Implementation Project of Compensation for Farmer Housing Demolishment and Resettlement in New District of Fuzhou Municipality (No.25, 2009) and the Notice of Publicizing the Annual Average Output Values of New Land Acquisition in Uniform Amount and Comprehensive Land Price of Linchuan District (effective on 1 March, 2011). Since July 2016, a new policy on house compensation was issued to encourage

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

affected households to take cash compensation. The actual compensation rates for land acquisition are same as those in the updated resettlement plan; The implemented house compensation rates are same as planned if opted for in-kind compensation, but higher rates adopted in case of cash compensation (Table A11.2).

Table A11.2: Compensation Rates of Land Acquisition and Houses Demolition

Item		Unit	URP	Actual
Land	Paddy land	CNY/ <i>mu</i>	34,164	34,164
	Standard fishpond	CNY/ <i>mu</i>	34,164	34,164
	Vegetable land	CNY/ <i>mu</i>	34,164	34,164
	Dry land	CNY/ <i>mu</i>	22,890	22,890
	House plot	CNY/ <i>mu</i>	22,890	22,890
	Irrigation canal	CNY/ <i>mu</i>	35,614	35,614
House	Framed	CNY/m ²	730	n.a.
	Brick-concrete	CNY/m ²	610	610-2,408
	Brick-wood	CNY/m ²	440	440-2,238
	Earth-wood	CNY/m ²	320	n.a.
	Simple	CNY/m ²	250	n.a.

m² = square meter, *mu* = a Chinese unit of measurement (1 *mu* = 666.67 m²), n.a. = not applicable, URP = updated resettlement plan.

Sources: Updated resettlement plan, resettlement monitoring reports.

D. Resettlement Costs

4. According to the project management office (PMO), the implementation of land acquisition and resettlement cost a total of CNY285.33 million, which decreased by 13.2% than CNY328.667 million in the updated resettlement plan. Such a decrease is mainly due to the decreased amount of land acquisition and resettlement impacts resulted by narrowed scope of Fenggang River component and its greenway as well as exclusion of commercial development area from Transport Hub.

E. House Relocation and Income Restoration

5. A total of 461 households were relocated due to project construction, including 286 households in Zhujia village and 175 households in Xianxi village. The affected households were offered three resettlement options including apartment, house plot for self-construction, and cash compensation. Based on extensive consultation, a total of 338 households (73.3%) selected house plots for building own houses in resettlement sites; 73 households (15.8%) opted resettlement apartments; and 50 households (10.9%) chose cash compensation (Table A11.3). The resettlement apartments in Xiangshan garden and Xianxi village were allocated to affected households in June 2015 and December 2019, respectively. The resettlement house plots in Zhujia and Xianxi were allocated to affected households in 2019. The project completion review mission visited two resettlement sites and noted that around 80% of affected households in Xianxi and 90% in Zhujia have constructed new houses. Those affected households have not commenced construction are mainly because they have other properties or live with their children. Many affected households were entitled to have more than one apartment together with a piece of house plot. For those who have been resettled in the apartments, they will construct new houses in accordance with their individual plans. In addition, the skills training programs for affected households have been adjusted during project implementation since some skills training were no longer relevant and non-farm work are already available.

Table A11.3: Resettlement of Relocated Households

Item	Resettlement Options	Zhujia village	Xianxi village	Total	Percentage
1	Apartment	59	14	73	16%
2	House plot	227	111	338	73%
3	Cash compensation	0	50	50	11%
Total		286	175	461	100%

Source: Asian Development Bank.

6. A survey conducted by external monitor indicated that the average per capita income of sample households increased from CNY12,166 in 2014 to CNY17,303 in 2019, and this is equivalent to an average annual growth of 7.3%. The average incomes of sample households are above the Fuzhou municipal averages. Migrant workers and commuters in Fuzhou High-tech Zone are the major income sources and they contributed for over 90% of total household income. Besides, the income from endowment insurance program contributed to 6.3% of total income in 2019, while it was only 1.7% in 2014. All sample households had experienced income growth from 2014 to 2019. There were 13 households with per capita income below CNY10,000 in 2014, while there is only one household by 2019; and only two households that had per capita income of over CNY20,000 in 2014, while 11 households by 2019. All respondents are satisfied with their increased income during the project implementation.

Table A11.4: Income Restoration of Sampling Affected Households

Per capita income (CNY/person)	2014		2019	
	Household	Percentage (%)	Household	Percentage (%)
<5,000	1	3.2	0	0
5,001-10,000	12	38.7	1	3.2
10,001-15,000	9	29	12	38.7
15,001-20,000	7	22.6	7	22.6
> 20,000	2	6.5	11	35.5
Total	31	100	31	100

Source: Asian Development Bank.

F. Information Disclosure, Consultation, and Participation

7. Fuzhou municipal government established the project leading group and PMO in August 2011. The PMO resettlement office worked closely with Fuzhou City natural resources bureau, local district and township governments, and affected communities to engage in detailed measurement survey to confirm the final land acquisition and resettlement impacts, information disclosure of detailed compensation policies, consultation on compensation and resettlement agreements, financing and timely delivery of entitlements, construction of resettlement sites, as well as allocation of new apartments and house plots. In addition, the PMO has set up grievance redress mechanism to ensure transparent and effective. The final resettlement monitoring report indicates that no complaints have been received during implementation of land acquisition and resettlement.

G. Monitoring and Evaluation

8. An independent consultant was recruited as the external resettlement monitor to conduct monitoring and evaluation on implementation of land acquisition and resettlement for the project.

A total of 10 external resettlement monitoring reports were prepared and submitted to ADB from 2014 to 2019. The resettlement reports have provided key information on actual resettlement impacts, implementation progress, compensation delivery, house relocation and income restoration, resettlement costs, consultation, and participation. The final monitoring report concludes that the incomes of surveyed affected households have been restored and improved.

H. Lessons

9. The project offered a combination of three resettlement options including high-rise apartments, house plots for self-construction, and cash compensation, which met various demands from affected people. The locations of resettlement sites are very close to Fuzhou High-tech Zone, where is convenient for affected people to find jobs. It contributed to income restoration of affected households due to land acquisition.

STATUS OF COMPLIANCE WITH LOAN AND GRANT COVENANTS

Covenant	Reference in Legal Agreement	Status of Compliance
Particular Covenants		
<p>(a) The Borrower, through JPG and FMG, shall cause the Project to be carried out with due diligence and efficiency and in conformity with sound applicable technical, financial, business, and development practices.</p> <p>(b) In the carrying out of the Project and operation of the Project facilities, the Borrower shall perform, or cause to be performed, all obligations set forth in Schedule 5 to this Loan Agreement and the Project Agreement.</p>	<p>LA. Artl. IV. Section. 4.01 PA. Artl. II. Section 2.01(b) and (c)</p>	<p>Complied with. The Borrower caused JPG and FMG to carry out the project with due diligence and efficiency and conformity with sound applicable technical, financial, business, and development practices.</p> <p>Complied with. The Borrower caused JPG and FMG to perform all obligations set forth in the Loan Agreement and Project Agreement.</p>
The Borrower shall make available, or cause to be made available, promptly as needed, the funds, facilities, services, land and other resources, as required, in addition to the proceeds of the Loan, for the carrying out of the Project.	<p>LA. Artl. IV. Section 4.02 PA. Artl. II. Section 2.02</p>	<p>Complied with. FMG made available the funds, facilities, services, land and other resources as required by the project.</p>
JPG shall make the proceeds available to FMG through the onlending agreement upon terms and conditions acceptable to ADB. Except as ADB may otherwise agree, the terms for the proceeds of the Loan made available to FMG shall include (i) commitment charge and interest at the rates identical to those applied to the Loan; (ii) a repayment period including a grace period identical to those applied to the Loan; and (iii) FMG bearing the foreign exchange and interest rate variation risks of the proceeds of the Loan made available thereto.	<p>PA. Artl. II. Section 2.01(a)</p>	<p>Complied with. An onlending agreement for the ADB loan was made between JPG and FMG with the same terms and conditions of the ADB loan.</p>
The Borrower shall cause JPG and FMG to enable ADB's representatives to inspect the Project, the Goods and Works, and any relevant records and documents relating to the Project.	<p>LA. Artl. IV. Section 4.03</p>	<p>Complied with. JPG and FMG enabled ADB's representatives to inspect the project.</p>
The Borrower shall take all actions which shall be necessary on its part to enable JPG and FMG to perform their obligations under the Project Agreement, and shall not take or permit any action which would interfere with the performance of such obligations.	<p>LA. Artl. IV. Section 4.04</p>	<p>Complied with. The Borrower took all actions necessary to enable JPG and FMG to perform all obligations set forth in the Loan Agreement and Project Agreement.</p>
(a) In the carrying out of the Project, FMG shall employ competent and qualified consultants and contractors, acceptable	<p>PA. Artl. II. Section 2.03</p>	<p>Complied with. FMG employed competent and qualified consultants</p>

Covenant	Reference in Legal Agreement	Status of Compliance
<p>to ADB, to an extent and upon terms and conditions satisfactory to ADB.</p> <p>(b) Except as ADB may otherwise agree, FMG shall procure all items of expenditures to be financed out of the proceeds of the Loan in accordance with the provisions of Schedule 4 to the Loan Agreement. ADB may refuse to finance a contract where any such item has not been procured under procedures substantially in accordance with those agreed between the Borrower and ADB or where the terms and conditions of the contract are not satisfactory to ADB.</p>		<p>and contractors acceptable to ADB.</p> <p>Complied with. FMG procured all items of expenditures in accordance with the Loan Agreement.</p>
<p>FMG shall carry out the Project in accordance with plans, design standards, specifications, work schedules and construction methods acceptable to ADB. FMG shall furnish, or cause to be furnished, to ADB, promptly after their preparation, such plans, design standards, specifications and work schedules, and any material modifications subsequently made therein, in such detail as ADB shall reasonably request.</p>	<p>PA. Artl. II. Section 2.04</p>	<p>Complied with. FMG carried out the project in accordance with plans, design standards, specifications, work schedules and construction methods acceptable to ADB.</p>
<p>(a) FMG shall take out and maintain with responsible insurers, or make other arrangements satisfactory to ADB for, insurance against such risks and in such amounts as shall be consistent with sound practice.</p> <p>(b) Without limiting the generality of the foregoing, FMG undertakes to insure, or cause to be insured, the Goods to be imported for the Project against hazards incident to the acquisition, transportation and delivery thereof to the place of use or installation, and for such insurance any indemnity shall be payable in a currency freely usable to replace or repair such Goods.</p>	<p>PA. Artl. II. Section 2.05</p>	<p>Complied with. FMG took out and maintained responsible insurers and made arrangement satisfactory to ADB.</p> <p>Complied with. FMG caused the FIDC to insure the goods to be imported for the project against hazards incident to the acquisition, transportation, and delivery.</p>
<p>FMG shall maintain, or cause to be maintained, records and accounts adequate to identify the items of expenditure financed out of the proceeds of the Loan, to disclose the use thereof in the Project, to record the progress of the Project (including the cost thereof) and to reflect, in accordance with consistently maintained sound accounting principles, its operations and financial condition.</p>	<p>PA. Artl. II. Section 2.06</p>	<p>Complied with. A financial account was established and used for the project in accordance with consistently maintained sound accounting principles, its operations and financial condition.</p>
<p>(a) ADB, JPG and FMG shall cooperate fully to ensure that the purposes of the Loan will be accomplished.</p>	<p>PA. Artl. II. Section 2.07</p>	<p>Complied with. During implementation, ADB, JPG and FMG</p>

Covenant	Reference in Legal Agreement	Status of Compliance
<p>(b) JPG and FMG shall promptly inform ADB of any condition which interferes with, or threatens to interfere with, the progress of the Project, the performance of their obligations under this Project Agreement, or the accomplishment of the purposes of the Loan.</p> <p>(c) ADB, JPG and FMG shall from time to time, at the request of either party, exchange views through their representatives with regard to any matters relating to the Project, JPG, FMG and the Loan.</p>		<p>cooperated fully to ensure that the purpose of the loan is accomplished.</p>
<p>(a) FMG shall furnish to ADB all such reports and information as ADB shall reasonably request concerning (i) the Loan and the expenditure of the proceeds thereof; (ii) the items of expenditure financed out of such proceeds; (iii) the Project; (iv) the administration, operations and financial condition of FMG in connection with the implementation of the Project; and (v) any other matters relating to the purposes of the Loan.</p> <p>(b) Without limiting the generality of the foregoing, FMG shall furnish to ADB periodic reports on the execution of the Project and on the operation and management of the Project facilities. Such reports shall be submitted in such form and in such detail and within such a period as ADB shall reasonably request, and shall indicate, among other things, progress made and problems encountered during the period under review, steps taken or proposed to be taken to remedy these problems, and proposed program of activities and expected progress during the following period.</p> <p>(c) Promptly after physical completion of the Project, but in any event not later than 3 months thereafter or such later date as ADB may agree for this purpose, FMG shall prepare and furnish to ADB a report, in such form and in such detail as ADB shall reasonably request, on the execution and initial operation of the Project, including its cost, the performance by FMG of its obligations under this Project Agreement and the accomplishment of the purposes of the Loan.</p>	<p>PA. Artl. II. Section 2.08</p>	<p>Partially Complied with. The PMO submitted to ADB the annual audited financial statements and periodic project progress reports as required.</p> <p>An initial draft of the borrower's project completion report with seriously incomplete data and information was prepared in July 2020, which was about 7 months after the project physical completion. The project implementation consultant supplemented a major part of the required the data and information urged by ADB. However, no consolidated final report was prepared.</p>

Covenant	Reference in Legal Agreement	Status of Compliance
<p>(a) JPG and FMG shall (i) maintain separate accounts and records for the Project; (ii) prepare annual financial statements for the Project in accordance with financial reporting standards acceptable to ADB; (iii) have such financial statements audited annually by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB, in accordance with international standards for auditing or the national equivalent acceptable to ADB; (iv) as part of each such audit, have the auditors prepare a report (which includes the auditors' opinion on the financial statements, use of the Loan proceeds and compliance with the financial covenants of this Loan Agreement as well as on the use of the procedures for the imprest account and statement of expenditures) and management letter; and (v) furnish to ADB, no later than 6 months after the end of each related fiscal year, copies of such audited financial statements, audit report and management letter, all in the English language, and such other information concerning these documents and the audit thereof as ADB shall from time to time reasonably request.</p> <p>(b) ADB shall disclose on its website, the annual audited financial statements for the Project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt.</p> <p>(c) JPG and FMG shall enable ADB, upon ADB's request, to discuss the financial statements for the Project and their financial affairs where they relate to the Project with the auditors appointed pursuant to subsection (a)(iii) hereinabove, and shall authorize and require any representative of such auditors to participate in any such discussions requested by ADB. This is provided that such discussions shall be conducted only in the presence of an authorized officer of JPG and FMG, unless JPG and FMG shall otherwise agree.</p>	<p>PA. Artl. II. Section 2.09</p>	<p>Partially Complied with. FMG through the PMO established a separate financial account, which was audited annually by external auditors. The audited project financial statements were prepared in the requested formats and submitted to ADB timely except the reports of financial year 2013 and 2015 were delayed minorly. All audited financial statements were disclosed on the ADB's project website.</p>
<p>FMG shall enable ADB's representatives to inspect the Project, the Goods and Works and any relevant records and documents.</p>	<p>PA. Artl. II. Section 2.10</p>	<p>Complied with. FMG enabled ADB's representatives to inspect the project.</p>

Covenant	Reference in Legal Agreement	Status of Compliance
Except as ADB may otherwise agree, JPG and FMG shall apply the proceeds of the Loan to the financing of expenditures on the Project in accordance with the provisions of the Loan Agreement and this Project Agreement, and shall ensure that all items of expenditures financed out of such proceeds are used exclusively in the carrying out of the Project.	PA. Artl. II. Section 2.11	Complied with. The loan proceeds were disbursed in accordance with the Loan Agreement.
Implementation Arrangements		
The Borrower, through JPG, shall cause FMG to 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 FMG and ADB. In the event of any discrepancy between the PAM and this Loan Agreement, the provisions of this Loan Agreement shall prevail.	LA. Sch. 5. Para. 1	Complied with. The project was implemented in accordance with the detailed arrangements set forth in the PAM.
FMG shall ensure that the PMO is equipped with professionally skilled staff, reasonable office space, equipment, and adequate financial resources required for implementation of the Project throughout Project implementation.	PA. Sch. Para. 1	Complied with. During implementation, the PMO had six operating units, including planning and statistics, engineering and quality control, environmental and social safeguards, financial management and audits, and office administration. The PMO was led by a director who was assisted by a deputy director, project managers, and a group of technical staff.
Counterpart Financing		
The Borrower, through JPG, shall cause FMG to ensure that (a) all counterpart funds are made available to the Project Implementing Agency in a timely manner; and (b) operation and maintenance of all Project facilities is fully funded.	LA. Sch. 5. Para. 2	Complied with. FMG provided all counterpart funds required for project implementation. After project completion, the project operations and maintenance have been transferred to several government agencies with sufficient budget allocations.
Environment		
FMG shall 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) the Borrower's all applicable laws and	PA. Sch. Para. 2	Complied with. The FMG took overall responsibility for implementing the EMP. A safeguards unit was established in the PMO with

Covenant	Reference in Legal Agreement	Status of Compliance
regulations relating to environment, health and safety; (b) the environmental safeguards as set out in the Safeguard Policy Statement; and (c) all measures and requirements set forth in the EIA, EMP, and any corrective or preventive actions set forth in a Safeguards Monitoring Report.		dedicated staff. Related provisions of the EMP implementation were integrated into the civil works contracts. While changing the BRT alignment, the EIA was updated. The PMO, with assistance from the PMC, undertook quarterly compliance audits and evaluated performance against project environmental indicators. An individual consultant was recruited to carry out the external monitoring and provide trainings on the environmental safeguards. Regular environmental monitoring reports were disclosed on the ADB website.
Land Acquisition and Involuntary Resettlement		
FMG shall ensure, and cause the Project Implementing Agency to ensure, that all land and all rights-of-way required for the Project are made available to the Works contractor in a timely manner and all land acquisition and resettlement activities are implemented in compliance with (a) the Borrower's all applicable laws and regulations relating to land acquisition and involuntary resettlement; (b) the Involuntary Resettlement Safeguards; and (c) all measures and requirements set forth in the RP, and any corrective or preventive actions subsequently agreed upon with ADB.	PA. Sch. Para. 3	Complied with. The FIDC took the responsibility to carry out the LAR activities. The PMO's safeguard unit coordinated internal supervision and reporting of the LARP implementation with relevant local government agencies. The LAR activities were monitored both internally and externally.
FMG shall not award any Works contract which involves involuntary resettlement impacts until: (a) FMG has prepared and submitted to ADB the final RP based on the Project's detailed design and census of displaced persons, and obtained ADB's clearance of such RP; (b) FMG has incorporated the relevant provisions from the RP into the Works contract; and (c) resettlement site(s) for the Affected Persons have been agreed and approved for site development.	PA. Sch. Para. 4	Complied with. The LARP was updated based on detailed measurement survey. Related provisions were incorporated into the works contracts.
Without limiting the application of the Involuntary Resettlement Safeguards or the	PA. Sch. Para. 5	Complied with.

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<p>RP, FMG shall ensure, and cause the Project Implementing Agency to ensure, that no physical or economic displacement takes place in connection with the Project until:</p> <p>(a) compensation and other entitlements have been provided to the Affected Persons in accordance with the RP; and</p> <p>(b) a comprehensive income and livelihood restoration program including the Urban Pension Program for all Affected Persons has been established in accordance with the RP.</p>		<p>Compensation and other entitlements were provided to all affected households in accordance with the RPs. Livelihood restoration programs were implemented, including cash compensation, job opportunities, skill trainings, and endowment insurance of land loss farmers.</p>
Indigenous Peoples		
<p>FMG shall ensure that the Project does not have any indigenous peoples impacts, within the meaning of the Safeguard Policy Statement. In the event that the Project does have any such impact, FMG shall take all steps required to ensure that the Project complies with the Borrower's applicable laws and regulations and with the Safeguard Policy Statement.</p>	<p>PA. Sch. Para. 6</p>	<p>Complied with. The FIDC and the PMO monitored closely the project impacts on ethnic minorities throughout the project life cycle. There was no negative and direct impact identified.</p>
Human and Financial Resources to Implement Safeguards Requirements		
<p>FMG shall make available, and cause the Project Implementing Agency to make available, necessary budgetary and human resources to fully implement the EMP and the RP.</p>	<p>PA. Sch. Para. 7</p>	<p>Complied with. Necessary budgetary and human resources were made available to fully implement the EMP and the RP.</p>
Safeguards-Related Provisions in Bidding Documents and Works Contracts		
<p>FMG shall cause the Project Implementing Agency to ensure that all bidding documents and contracts for Works contain provisions that require contractors to:</p> <p>(a) comply with the measures relevant to the contractor set forth in the EIA, the EMP and the RP (to the extent they concern impacts on the Affected Persons during construction), and any corrective or preventive actions set forth in a Safeguards Monitoring Report</p> <p>(b) make available a budget for all such environmental and social measures</p> <p>(c) provide FMG and Project Implementing Agency with a written notice of any unanticipated environmental, or resettlement risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the EIA, the EMP and the RP</p> <p>(d) adequately record the condition of roads, agricultural land and other infrastructure</p>	<p>PA. Sch. Para. 8</p>	<p>Complied with. Provisions were included in all bidding documents for works contract to comply with the ADB's and government's safeguard policies. Budget was made available for all environmental and social measures.</p>

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<p>prior to starting to transport materials and construction; and</p> <p>(e) reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition as soon as possible and no later than the completion of construction</p>		
Safeguards Monitoring and Reporting		
<p>FMG shall do, or cause the Project Implementing Agency to do, the following:</p> <p>(a) submit (i) semiannual Safeguards Monitoring Reports during construction, and (ii) annual Safeguard Monitoring Reports for environment during operation of Project facilities, to ADB for review and disclose relevant information from such reports to Affected Persons promptly upon submission;</p> <p>(b) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the EIA, the EMP and the RP, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan;</p> <p>(c) not later than 3 months after the Effective Date, engage a qualified and experienced external environment expert under a selection process and terms of reference acceptable to ADB, to verify information produced through the Project monitoring process, and facilitate the carrying out of any verification activities by such external experts; and</p> <p>(d) report any actual or potential breach of compliance with the measures and requirements set forth in the EMP and the RP promptly after becoming aware of the breach.</p>	<p>PA. Sch. Para. 9</p>	<p>Complied with.</p> <p>The PMO, with assistance from the PMC, undertook quarterly compliance audits and evaluated performance against project environmental indicators, and submitted quarterly monitoring reports to the FIDC and ADB. An individual consultant was recruited to carry out the external monitoring and provide trainings on the environmental safeguards. Regular environmental monitoring reports were disclosed on the ADB website.</p> <p>The LAR activities were monitored both internally and externally. An individual resettlement consultant was engaged to aid and monitor the LARP implementation. Social monitoring reports were prepared and posted on the ADB website, which indicated that no grievance notification was received.</p>
Prohibited List of Investments		
<p>FMG shall ensure that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.</p>	<p>PA. Sch. Para. 10</p>	<p>Complied with.</p>
Gender Action Plan and Social Development Action Plan		
<p>FMG shall ensure, and cause the Project Implementing Agency to ensure, that the GAP is fully implemented in accordance with ADB's Gender and Development Policy (1998) including, but not limited to: (a) ensuring women's equitable participation in</p>	<p>PA. Sch. Para. 11</p>	<p>Complied with.</p> <p>To maximize positive gender impacts, the project was designed to meet ADB's <i>effective gender mainstreaming</i></p>

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Project related public consultation; (b) incorporating gender-responsive physical design features in the design of urban transport infrastructure; (c) promoting increased employment opportunities for women in landscape maintenance, new terminal attendance and cleaning jobs and as BRT bus drivers; and (d) building institutional capacity for gender mainstreaming. FMG shall ensure that the Project Implementing Agency monitors the Project's impact on women during Project implementation, and reports them in the Project performance management system.		categorization. A project gender action plan was prepared. During implementation, one staff in the PMO was appointed to monitor GAP implementation. The PMO had some female staff. The bidding documents for works contracts had a clause to prioritize employment of women and the poor.
FMG shall cause the Project Implementing Agencies to implement and monitor in a timely manner the SDAP. The SDAP shall include (a) traffic safety measures through better road safety facilities, driver training program, and community awareness program on traffic safety including schools (target children); (b) giving permanent employment opportunities from road department and landscape department; (c) improving access for local communities, such as setting up new bus lines linking new area and downtown; (d) providing health training for workers during the construction through both Center for Disease Control and the Project Implementing Agency; (e) protecting local communities from construction disturbances and ensuring safety through dust control, construction safety enhancement, and measures included in the EMP; (f) providing skills training and non-farm employment to affected people, particularly affected women and vulnerable people to facilitate their income and livelihood restoration for land loss and resettlement impacts and offer special assistance to vulnerable people; (g) ensuring same or better education for affected children due to displacement; and (h) providing pension insurance and social insurance for land loss farmers.	PA. Sch. Para. 12	Complied with. An individual consultant was recruited to monitor the GAP implementation, and provide trainings to the FIDC and PMO staff as well as to the local officials on gender equity and GAP objectives. A survey for project beneficiary was conducted. Project implementation created substantial employment opportunities for women, like catering, unskilled construction labor, road maintenance, etc. with the gender ratio of employments about 20%.
Work Contract		
FMG shall cause the Project Implementing Agency to ensure that the bidding document for Works contracts include provisions to require the contractors to (a) prioritize employment of women and the poor; (b) provide equal pay for equal work; (c) provide the timely payment of wages; (d) use local	PA. Sch. Para. 13	Complied with. A GAP was prepared with the focus on (i) ensuring women's equitable participation in public consultation regarding the project, (ii) incorporating

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unskilled labor, as applicable, (e) comply with core labor standards and the applicable labor laws and regulations, including stipulations related to employment; and (f) not employ child labor. FMG shall cause the Project Implementing Agency to ensure that records of labor employment are properly maintained and tracked in the Project performance monitoring system.		gender-responsive features in the design of urban transport infrastructure that will benefit all vulnerable users, and (iii) promoting increased employment opportunities for women and building institutional capacity for gender mainstreaming.
FMG shall cause the Project Implementing Agency to ensure that the Work contractors (a) implement an HIV/AIDS awareness and prevention training for all employees; (b) provide necessary measures to ensure the safety and health of its employees; (c) together with the local health bureaus, disseminate information on the risks, hazards, impacts and prevention know-how on HIV/AIDS among the staff, workers on the construction sites and the local community by means of information disclosure, education and consultation; and (d) observe local customs concerning acceptable behavior toward the local population.	PA. Sch. Para. 14	Complied with. The project was designed to meet the transport requirements of the rapidly growing urban areas of Fuzhou. Vulnerable groups affected by the project received special assistance. A sustainable integrated public transport system was created including road safety measures. A social development action plan was prepared and implemented to ensure that local people are protected from construction disturbances and health risks like HIV/AIDS.
Public Awareness		
FMG shall undertake public awareness campaigns through information disclosure, education and consultation on the Project and its benefits, including, but not limited to, information related to the RP, EMP, GAP and SDAP.	PA. Sch. Para. 15	Complied with. Public awareness campaigns were undertaken by FMG.
Grievance Redress Mechanism		
FMG shall ensure that, within 2 months of the Effective Date, grievance redress mechanisms, acceptable to ADB and in accordance with the PAM, EIA and RP respectively, are established for environmental, social and other matters arising out of the Project, and functioning effectively to (a) review and document eligible complaints of Project stakeholders; (b) proactively address grievances; (c) provide the complainants with notice of the chosen mechanism/action; and (d) prepare periodic reports to summarize (i) the number of complaints received and resolved, (ii) chosen actions, and (iii) final outcomes of the grievances and make these reports available to ADB. Eligible complaints shall (a) be those related to the Project and on (i)	PA. Sch. Para. 16	Complied with. Grievance redress mechanisms were established to address affected people's concerns. Environmental and social monitoring reports were prepared and posted on the ADB website, which indicated that no grievance notification was received.

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any of the service providers, and (ii) any person responsible for carrying out the Project; and (b) include (i) grievances due to any safeguards; (ii) social and/or economic issues, and (iii) complaints on misuse of funds and other irregularities.		
Onlending Arrangement		
JPG shall ensure that no disbursement is made to FMG until an appropriate onlending arrangement with FMG has been in place.	PA. Sch. Para. 17	Complied with. Onlending agreements of the ADB loan were signed prior to any disbursement of the ADB loan proceeds.
Urban Transport		
FMG shall cause the Project Implementing Agency to cooperate with all relevant agencies to promote public transport and BRT, and traffic safety provisions for all roads constructed under the Project, including the provision of public transport and BRT, adequate traffic and safety signage, signal lamps, median separators, traffic control and other necessary facilities. FMG shall develop appropriate measures to nurture public transport and BRT services, and to involve all concerned agencies to improve utility management along urban roads. FMG shall ensure that traffic safety education activities are conducted through schools, radio and television broadcast and traffic safety booklets to enhance the local awareness of traffic safety.	PA. Sch. Para. 18	Complied with. The project was designed to meet the transport requirements of the rapidly growing urban areas of Fuzhou. During implementation, safety audits of the project roads were carried out. The project design was enhanced with adequate traffic safety features. Upon project completion, a sustainable integrated public transport system was created including road safety measures.
Design and Construction Quality and Management		
Prior to the construction of the urban infrastructures under the Project, FMG shall cause the Project Implementing Agency to complete and submit to ADB for review, the detailed designs of such infrastructures, and ensure that adequate risk mitigation is fully incorporated in the Project designs in accordance with all relevant national, municipal and local design codes and standards. FMG shall cause the Project Implementing Agency to ensure that all Works under the Project are designed and constructed in accordance with national standards and specifications and that the construction supervision, quality control, contract management, and completion inspection and acceptance procedures shall be in accordance with all applicable national laws and municipal and local regulations.	PA. Sch. Para. 19	Complied with. All works under the project were designed and constructed in accordance with national standards and specifications. The engineering designs of the project facilities were enhanced to incorporate adequate traffic safety features. Quality control, contract management, and completion inspections were conducted during project implementation.

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FMG shall ensure that a qualified design institute with experience in designing and implementing high quality BRT systems within the territory of the Borrower is selected to conduct detailed design for the BRT system in Fuzhou. Prior to finalizing the detailed design contract for the BRT system, FMG shall submit the name and qualifications of the proposed detailed designer for the BRT system to ADB for its concurrence.	PA. Sch. Para. 20	Complied with. Qualified design institutes were selected to conduct the BRT design.
FMG shall ensure that a road safety audit is carried out on all detailed designs for the station access roads and pedestrian improvements for BRT station access. The road safety audit report shall be submitted, in English, to ADB prior to bidding for the concerned Works.	PA. Sch. Para. 21	Complied with. During design, road safety audit was carried out on all station access roads and the BRT access.
Governance and Anticorruption		
JPG and FMG (a) acknowledges ADB's right to investigate, directly or through its agents, any alleged corrupt, fraudulent, collusive or coercive practices relating to the Project; and (b) agrees to cooperate, and shall cause the Project Implementing Agency, and all other government offices, organizations and entities involving in implementing the Project to cooperate, fully with any such investigation and to extend all necessary assistance, including providing access to all relevant books and records, as may be necessary for the satisfactory completion of any such investigation. In particular, JPG and FMG shall ensure that (a) periodic inspections of the Project contractors' activities related to fund withdrawals and settlements are carried out; (b) relevant provisions of ADB's Anticorruption Policy (1998, as amended to date) are included in all bidding documents for the Project; and (c) contracts, financed under the Project, include provisions specifying the right of ADB to audit and examine the records and accounts of JPG, FMG, the Project Implementing Agency, PMO, contractors, suppliers, consultants, and other service providers as they relate to the Project.	PA. Sch. Para. 22	Complied with. JPG and FMG acknowledged ADB's right to investigate any alleged corrupt, fraudulent, collusive, or coercive practices relating the project. All related government agencies fully cooperated with any such investigations.
FMG shall, through the Project Implementing Agency' publicly-accessible website, disclose information about various project matters, including general project information, procurement, Project progress, and contact details in the English and	PA. Sch. Para. 23	Complied with. As suggested, a website was established (with some delays) for the project to disclose project related information. ADB official

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Chinese languages. The website shall also provide a link to ADB's Integrity Unit (http://www.adb.org/Integrity/complaint.asp) for reporting to ADB any grievances or allegations of corrupt practices arising out of the project and project activities. With regard to procurement, the website shall include information on the list of participating bidders, name of the winning bidder, basic details on bidding procedures adopted amount of contract awarded, and the list of Goods, Works and Consulting Services procured.		website which includes the link of ADB's Integrity Unit is provided on the website.
GEF Grant		
The Recipient shall perform, or cause to be performed, all obligations set forth in Schedule 4 of the Grant Agreement.	GA Article IV Section 4.01	Complied with. The recipient performed its obligations adequately.
<p>(a) The Recipient shall cause FMG to: (i) maintain separate accounts and records for the Project; (ii) prepare annual financial statements for the Project in accordance with financial reporting standards acceptable to ADB; (iii) have such financial statements audited annually by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB, in accordance with international standards for auditing or the national equivalent acceptable to ADB; (iv) as part of each such audit, have the auditors prepare a report (which includes the auditor's opinion on the financial statements, use of the Grant proceeds and compliance with the financial covenants of the Grant Agreement) and a management letter; and (v) furnish to ADB, no later than 6 months after the end of each related fiscal year, copies of such audited financial statements, audit report and management letter, all in the English language, and such other information concerning these documents and the audit thereof as ADB shall from time to time reasonably request.</p> <p>(b) ADB shall disclose the annual audited financial statements for the Project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website.</p> <p>The Recipient, through FMG, shall enable ADB, upon ADB's request, to discuss the</p>	GA Article IV Section 4.02	<p>Complied with.</p> <p>(a) The combined grant and loan accounts were audited and audit reports were submitted timely.</p> <p>(b) Confirmed.</p> <p>(c) The GA was duly implemented.</p>

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financial statements for the Project and FMG's financial affairs where they relate to the Project with the auditors appointed pursuant to subsection (a)(iii) hereinabove, and shall authorize and require any representative of such auditors to participate in any such discussions requested by ADB. This is provided that such discussions shall be conducted only in the presence of an authorized officer of the Recipient, unless the Recipient shall otherwise agree.		
The Recipient shall enable ADB's representatives to inspect the Project, the Goods, and any relevant records and documents.	GA Article IV Section 4.03	Complied with. FMG enabled ADB's representatives to inspect the project.
The Recipient acknowledges and agrees that this Grant Agreement is entered into by ADB, not in its individual capacity, but as grant administrator for GEF. Accordingly, the Recipient agrees that (a) it may only withdraw Grant proceeds to the extent that ADB has received proceeds for the Grant from GEF, and (b) that ADB does not assume any obligations or responsibilities of GEF in respect of the Project or the Grant other than those set out in this Grant Agreement.	GA Article IV Section 4.04	Complied with.
Implementation Arrangements		
The Recipient shall cause FMG to 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 FMG and ADB. In the event of any discrepancy between the PAM and this Grant Agreement, the provisions of this Grant Agreement shall prevail.	GA Sch.4, Para. 1	Complied with. The project was implemented in accordance with the detailed arrangements set forth in the PAM.
The Recipient shall cause FMG to (a) comply with ADB's Anticorruption Policy (1998, as amended to date) and acknowledge that ADB reserves the right to investigate directly, or through its agents, any alleged corrupt, fraudulent, collusive or coercive practice relating to the Project; and (b) cooperate with any such investigation and extend all necessary assistance for satisfactory completion of such investigation.	GA Sch.4, Para. 2	Complied with. FMG complied with ADB's Anticorruption Policy and acknowledged ADB's rights investigate any alleged corrupt, fraudulent, collusive or coercive practices relating the project. All related government agencies fully cooperated with any such investigations.
The Recipient shall cause FMG to ensure that the anticorruption provisions acceptable to ADB are included in all bidding documents and contracts, including provisions specifying the right of ADB to	GA Sch.4, Para. 3	Complied with. ADB Anticorruption requirements were complied with and incorporated into bidding documents.

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audit and examine the records and accounts of the executing and implementing agencies and all contractors, suppliers, consultants, and other service providers as they relate to the Project.		
The Recipient shall cause FMG to ensure that (a) FMG comply with applicable laws and regulations of the Recipient on combating money laundering and financing of terrorism; and (b) Grant proceeds are not used, directly or indirectly, in money laundering or financing of terrorism.	GA Sch.4, Para. 4	Complied with.
Communication and Visibility		
The Recipient shall, and shall cause FMG to, comply with the Communication and Visibility Guidelines of GEF; and in particular, the Recipient shall cause FMG to include a GEF logo in all relevant Project publications and on any equipment or facility funded by GEF. For the purposes of this provision, "Communication and Visibility Guidelines of GEF" means the communication and visibility guidelines for external actions funded by the GEF included in the communication and visibility policy approved by the GEF Council in May 2011, as amended from time to time.	GA Sch.4, Para. 5	Complied with.

ADB = Asian Development Bank, Artl – Article, BRT = bus rapid transit, EIA = environmental impact assessment, EMP = environmental management plan, FIDC = Fuzhou Investment Development Company, FMG = Fuzhou Municipal Government, GA = grant agreement, GAP = gender action plan, GEF = Global Environment Facility, JPG = Jiangxi Provincial Government, LA = loan agreement, LAR = land acquisition and resettlement, LARP = land acquisition and resettlement plan, PA = project agreement, PAM = project administration manual, PMC = project management consultants, PMO = project management office, RP = resettlement plan, SDAP = social development action plan.

Source: Asian Development Bank project completion mission.

ECONOMIC REEVALUATION

A. Introduction

1. The Asian Development Bank (ADB) project completion review mission conducted an economic reevaluation of the project using similar methodology as that at appraisal with updated data. In the “without-project” case, it was assumed that the project was not implemented. In the “with-project” case, the project was implemented, which has provided a well-designed multimodal transport infrastructure and integrated public transport services in Fuzhou, and the operation of the project has brought substantial economic benefits to the city. A traffic analysis compared the actual traffic with those projected at appraisal, and the traffic forecast was adjusted accordingly. Economic benefits were recalculated by comparing the “with-project” and “without-project” cases. Consequently, economic internal rate of return (EIRR) for the project was recalculated and its sensitivities were tested.

B. The Project

2. Fuzhou is a prefectural level city in Jiangxi Province of the People’s Republic of China (PRC). At appraisal, Fuzhou Municipality lagged nearby provinces and remains relatively poor. A new Xiangpu High-Speed Railway was under construction, which passes through Fuzhou City. With opening of the high-speed railway, Fuzhou would be better connected to fast-growing and relatively prosperous cities in the eastern PRC. The opening of the new railway would also offer significant opportunities to improve the economy in the region. The new railway station is 6 kilometer (km) south of the city center and 2 km from the new developed city area, which would become Fuzhou’s southern gateway and to anchor a new development area. The project was to better link the railway station and surrounding areas to Fuzhou City with well-designed multimodal transport infrastructure and integrated public transport services. This would 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 poverty reduction, and encourage a shift to modes of travel with lower and even zero emissions.

3. Upon completion, the project’s physical outputs included:

- (i) a bus rapid transit (BRT) system of 12.5 kilometers (km) was constructed and opened to traffic. The BRT system also includes intelligent dispatching, ticketing, security door, and passenger guidance systems. Total 133 electric BRT buses (10.5 meters) were purchased and operated, and BRT bus maintenance and charging equipment were also procured under the project.
- (ii) a new urban transport hub near the new railway station was constructed and opened to traffic, including a bus company headquarter building, bus inspection and maintenance workshop, bus parking and charging areas, bus terminals with 4 bus bays and BRT ticketing facilities, and public parking lots for cars, motorcycles, bicycles, and pedestrian walkways linking the bus terminals with the railway station.
- (iii) four sections of station access roads of totaling 10.2 km were newly constructed, which are with the red line width of 55–70 meters including 6 carriage lanes for motorized vehicle, pedestrian and nonmotorized vehicle lanes, as well as underground utilities and greenbelt. About 496 meter of the roads in front of the railway station was constructed as underground tunnel.

- (iv) A green park near the railway station and along the Fenggang River was constructed with total 10.7 million square meter (m²), including (i) embankment of 4.5 km with strengthened flood control, (ii) square and roads of 84,000 m², and (iii) greening areas of 960,000 m². The park roads are with lighting and rest areas. A bicycle lane of 303 meters was also constructed in the park, which links the railway station with the city center.

4. The project started construction in 2013 and the project implementation was with some delays. With joint efforts, the transport hub and the “greenway” were fully completed in January 2019; the BRT system was completed and put in operation in March 2019; all access roads were completed before the end of 2019;¹ and all BRT facilities and buses were delivered before November 2019. The completion and operation of the project facilities has achieved its objectives anticipated, including reducing transport costs for passengers, increasing the efficiency and attractiveness of the public transport system, expanding travel opportunities and regional accessibility to jobs and services, promoting sustainable urbanization and poverty reduction, and encouraging a shift to modes of travel with lower and even zero emissions. Substantial economic benefits have been brought and will be brought by the project.

C. Project Operation and Traffic

5. Upon completion, the operation and maintenance of the BRT systems was delegated to the Fuzhou Public Transport Company (FPTC). In April–May of 2019, an international consulting firm, hired by Fuzhou Municipal Government, carried out a perform evaluation of the BRT system in Fuzhou.² A survey and assessment of the first phase (north section of 5.5 km) was conducted. The survey indicated that the BRT traffic was about 58,000 person-rides per day. During the ADB’s project completion review mission, it was told that the BRT traffic in 2020 would be at least 60,000 person-rides despite the influence of the coronavirus disease (COVID-19) pandemic. In comparing with the traffic forecast at appraisal, the actual traffic level was about double than that at appraisal (28,976 person-rides in 2020). Accordingly, the traffic forecast at appraisal was adjusted according to the actual traffic and fast socioeconomic development in Fuzhou, at 8% in 2020–2025, 5% in 2026–2030, and 3% in 2031 and onwards.

6. The transport hub is also operated and maintained by the FPTC. Currently, there are two BRT routes and several non-BRT routes start/end at the transport hub. Most of the bus passengers are from/to the railway stations. It was told and observed that at least 4,500 passengers take the bus at the transport hub (in and out). Along with the fast socioeconomic development and railway operations and service expansion, it was expected that the bus passengers at the transport hub would increase at 10% in 2020–2025, 5% in 2026–2030, and 3% in 2031 and onwards. Meanwhile, most of the BRT buses are parked, charged, and maintained at the transport hub.

7. The railway access roads are in front of the railway station in a new development area in Fuzhou. The operation and maintenance (O&M) would be delegated to Fuzhou City and Linchuan District Urban Infrastructure Management Service Center.³ Currently, the traffic on the project roads is still in low level. It was expected that the traffic in annual average daily traffic would increase to 3,500 vehicles per day in 2030 and 5,500 vehicles per day in 2040.

¹ The construction for some project access roads was delayed by overall urban utilities development under the project roads and upgrading of the green belt along the roads.

² 2019. *Operation Effectiveness Evaluation of the BRT System in Fuzhou*. Far East Mobility.

³ Some station access roads are in still in the defect liability period (one year).

8. It is arranged that the O&M of Fenggang River “greenway” would be delegated to Fuzhou Garden and Forest Administration Bureau with the fund from municipal fiscal budget. By then, the facilities will be maintained and service might be expanded according to actual needs and budget availability. It was noticed, a large scale of land/real estate development was undergoing, which took the advantages of the transport and environment condition improved under the project.

D. Project Cost

9. The project costs comprised investment capital costs, and the O&M costs. Comparing with the cost estimations at appraisal, the actual project cost was about 11.9% lower and the project construction period extended from original 5 years to 7 years (2013–2019). The actual annual investment costs for the project were used in the economic reevaluation. The actual O&M costs for the BRT system were provided by the FPTC. The O&M costs for the other project components were estimated at 1%–3% of the capital costs. It was assumed that such O&M cost would increase by 2%–3% per year in consideration of the traffic growth and the facility condition deterioration. The periodic maintenance costs were assumed to have occurred (i) every 5 years for rehabilitating the BRT stations and 10 years for replacing the buses at the costs of 5% and 10% of the capital costs, (ii) every 10 years for the transport hub (building and equipment) at 5% of the capital cost, (iii) every 5 years for the access roads (resurfacing) at 5% of the capital cost, and (iv) every 3 years for the “greenway” at 10% of the capital costs.

10. Such financial annual capital costs and annual O&M costs were converted into economic costs using the average conversion factor of 0.89 adopted from the project appraisal document, which excluded the costs for tax and financial charges of the loans, used shadow price for low-skilled labors (0.8), and applied weighted average standard conversion factor for the civil works costs.

E. Economic Benefits

11. As that at appraisal, the following main economic benefits were captured and estimated in the economic reevaluation.

12. **Vehicle operation cost (VOC) reduction.** All the BRT buses are electric powered that the energy cost is much lower than using diesel or compressed natural gas, about CNY0.80 lower per vehicle-km; all BRT bus are new which need minor daily maintenance and the battery will be replaced by the supplies (within the purchasing price); the BRT bus is operated by only a driver and no conductor on board (some staff work at the stations). All of these have reduced substantially the vehicle operation costs. The station access roads were newly constructed. Before the project roads, most of the existing traffic used other roads with poor conditions and longer distance (it was in rural area). With the project roads, the diverted traffic may run at much fast speeds on the much smoother roads. Hence, the VOC for those vehicles reduced substantially, at average CNY3.00 per vehicle-km.

13. **Passenger time cost saving.** The BRT buses run along closed and dedicated BRT lanes. The average bus speed currently is about 23–28 km per hour, which is much higher than that before the project (about 15–20 km per hour). Meanwhile, the passengers transit at same stations among the 10 bus routes. Such the passenger time for travel and transit was saved at least 5 minutes each passenger. At the transport hub, the buses start/from the bus bays, where is very near the railway station and is facilitated with a pedestrian walkway. The passengers may save at least 5 minutes each while walk between the railway station and the bus terminals. Due to

better road condition and faster vehicle speeds, the passenger traveling time costs on the station access roads were also significantly reduced. The gross domestic product per capita in 2019 was used as the basis to estimate the passenger time cost, at CNY16.8 per hour.

14. **Emission reduction.** All of the BRT buses are electric powered. In comparing with the buses using diesel or compressed natural gas, the electric buses generate zero emissions. It was estimated that the carbon dioxide reduction was about 1,856 ton in 2020 and 2,747 ton in 2030. The ADB suggested price for carbon dioxide trading of \$36.3 per ton in 2016 with 2% annual increase rate was applied to estimate related benefits.

15. **Bus maintenance cost reduction.** The transport hub has a bus maintenance workshop with inspection and maintenance facilities. The buses may get timely inspection and repairs, which reduced the overall maintenance costs. It was assumed that half of the BRT buses could get timely inspection and maintenance a year with reduced cost of CNY1,000 per bus. The transport hub has a large bus parking lot which may avoid some bus damages than parking along the roadsides.

16. **Flood control improvement.** Under the project, the embankment of 4.5 km of the Fenggang River was strengthened with better flood control capability. As that at appraisal, it was assumed that at least CNY8.2 million per year might be saved from the flood damages.

17. **Land development promotion.** The transport hub has reserved about 40 mu of land to be commercially developed,⁴ like public parking lot, business, transport services, and other transport-oriented-development. The improvement in transport conditions and environment has also promoted the land and real estate development in the project areas, including along the BRT corridor and surrounding areas of the “greenway,” estimated at least 800 mu of direct impacted areas. The land price in Fuzhou was about CNY5.0 million per mu in 2020. It was assumed that half of the price was contributed by improved transport and living conditions. It was assumed that economic benefits related to the land and real estate development would be realized in 10 years.

F. Economic Internal Rate of Return and Sensitivity Analysis

18. Based on the assumptions and parameters above, the EIRR was recalculated for a period of 27 years (2013–2039), including 8 years for project implementation and 22 years for operation (with some overlaps of construction and operation periods). 30% of the capital cost was considered as the residual value of the project assets, which was added to the last calculation year. The EIRR was recalculated at 16.9%, which is higher than what calculated at appraisal (14.0%). The higher EIRR was mainly due to a lower capital cost and higher BRT traffic level. The recalculated EIRR is above the ADB recommended discount rate of 12% at appraisal. The project is therefore considered to be continuously economically viable. The details of the economic reevaluation are in Table A13.2.

19. The EIRR was subjected to sensitivity analysis to test different scenarios of the O&M costs and benefits. The sensitivity analysis results indicated that the project continued to be economically viable for most tested scenarios. If a 20% maintenance cost increase would be combined with a 20% benefit reduction, the EIRR would be still 13.1% for the project. The sensitivity analysis also showed that the EIRR was more sensitive to changes in economic benefits. For this reason, the project operators need to keep the project assets in good condition and facilitate the fast-growing traffic demand, especially the BRT traffic. FMG should continuously

⁴ A mu is a Chinese unit of measurement (1 mu = 666.67 m²).

support and promote the public transport development in Fuzhou. The results of the sensitivity analysis are in the following table.

Table A13.1: Sensitivity of the EIRR

Case	Tests		EIRR (%)	<u>ENPV@12%</u> <u>(CNY million)</u>
	O&M Cost	Benefits		
Base Case			16.9%	927.15
Changes (+/-)	+10%		16.7%	885.60
	+20%		16.4%	844.05
		+10%	18.4%	1,208.11
		+20%	19.7%	1,489.07
		-10%	15.3%	646.18
		-20%	13.6%	365.22
	10%	-10%	15.1%	604.64
	20%	-20%	13.1%	282.13
Switching Point	+192%		12.0%	
		-28%	12.0%	

EIRR = economic internal rate of return, ENPV = economic net present value, O&M = operation and maintenance.

Source: Asian Development Bank project completion review mission.

Table A13.2: Economic Reevaluation for the Project Roads
(CNY million)

	Cost			Benefit							Net Benefit	Present Value
	Capital	O&M	Total	VOC	Time	Emission	Maintain	Flood	Develop	Total		
2013	56.34		56.34								-56.34	-124.54
2014	103.72		103.72								-103.72	-204.72
2015	28.59		28.59								-28.59	-50.38
2016	174.59		174.59								-174.59	-274.72
2017	161.61		161.61								-161.61	-227.05
2018	341.33	1.09	342.42								-342.42	-429.53
2019	40.54	26.42	66.96	12.20	54.98	0.45	0.07	14.68		82.39	15.43	17.28
2020	277.83	31.89	309.72	20.39	65.83	0.47	0.07	15.57		102.33	-207.39	-207.39
2021		33.43	33.43	22.13	74.89	0.51	0.07	16.50	197.25	311.36	277.92	248.15
2022	11.82	34.13	45.95	24.03	85.20	0.54	0.08	17.49	197.25	324.59	278.64	222.13
2023	-	35.06	35.06	26.10	96.94	0.58	0.08	18.54	197.25	339.49	304.43	216.69
2024	22.55	33.06	55.62	28.36	110.29	0.62	0.08	19.65	197.25	356.26	300.64	191.06
2025	29.91	33.44	63.36	30.83	125.49	0.67	0.08	20.83	197.25	375.15	311.79	176.92
2026	-	34.36	34.36	32.75	129.76	0.70	0.09	22.08	197.25	382.62	348.26	176.44
2027	-	35.29	35.29	34.79	140.89	0.74	0.09	23.41	197.25	397.16	361.87	163.69
2028	11.82	36.04	47.86	36.98	152.99	0.77	0.09	24.81	197.25	412.90	365.04	147.43
2029	70.67	32.88	103.55	39.32	166.14	0.81	0.09	26.30	197.25	429.93	326.37	117.69
2030	18.09	33.40	51.49	41.83	180.45	0.86	0.10	27.88	197.25	448.36	396.87	127.78
2031	11.82	34.09	45.91	43.50	192.01	0.89	0.10	29.55		266.04	220.13	63.28
2032	-	35.02	35.02	45.23	204.31	0.93	0.10	31.32		281.90	246.88	63.37
2033	-	35.98	35.98	47.05	217.42	0.96	0.11	33.20		298.74	262.76	60.22
2034	34.38	33.00	67.37	48.94	231.38	1.00	0.11	35.19		316.63	249.25	51.00
2035	18.09	33.52	51.61	50.92	246.25	1.04	0.11	37.30		335.63	284.02	51.89
2036	-	34.43	34.43	52.99	262.08	1.08	0.12	39.54		355.81	321.38	52.42
2037	11.82	35.15	46.97	55.14	278.95	1.13	0.12	41.92		377.26	330.28	48.10
2038	-	36.11	36.11	57.39	296.92	1.17	0.12	44.43		400.04	363.93	47.33
2039	-284.69	36.70	-247.99	59.74	316.07	1.22	0.13	47.10		424.25	672.24	78.05

Net Present Value: 927.15
Internal Rate of Return: **16.9%**
Discount Rate: 12%

O&M = operation and maintenance, VOC = vehicle operation cost.
Source: Asian Development Bank project completion review mission.

FINANCIAL REEVALUATION

1. Under the project, the bus rapid transit (BRT) system generates revenues through ticketing to the bus passengers. The financial internal rate of return (FIRR) of the BRT system was recalculated based on actual project capital costs, operation and maintenance (O&M) costs, and revenues of the BRT operations, provided by the BRT operator – Fuzhou Public Transport Company. Following are the major assumptions used in the FIRR recalculation:

- (i) The capital costs included all capital expenditures related to the civil works, electronic engineering, BRT buses, charging and maintenance equipment, and related consulting services, but excluded the financial charges for the loan.
- (ii) Actual O&M costs of the operator in 2019 and 2020 were used as the basis. The O&M costs were kept at constant prices, and a 3% increase per year was added to account for traffic increases and the BRT facility deterioration. The periodic maintenance cost was assumed to have occurred every 5 years for rehabilitating the stations at 5% of the capital costs, and every 10 years for replacing the BRT buses at 10% of the capital cost.
- (iii) The operating revenues were estimated based on the BRT traffic and the average ticket price of CNY1.3 per person-ride.¹ It was assumed that the revenue level would increase along with the traffic growth each year at 8% in 2021–2025, 5% in 2026–2030, and 3% in 2031 and onwards.
- (iv) Extra revenue was also considered, which were generated from mainly advertisement, bus renting, and commercial activities. Actual extra revenue of the BRT operation, CNY6.7 million in 2019 and 2020, was used with assumptions of 10% annual increase for 2021–2025, 8% for 2026–2030, and 5% for 2031 and onwards.
- (v) Government subsidy for the BRT operation was considered, which would only cover the costs for the capital investments (rehabilitating the BRT stations and purchasing new buses).
- (vi) The corporative tax rate of 3.3% for the transport sector in People's Republic of China was applied to the total revenue.

2. Based on the assumptions and parameters above, the FIRR was recalculated for a period of 26 years (2014–2039), including 7 years for project implementation and 21 years for operation (with some overlaps of construction and operation periods). 20% of the capital cost was considered as the residual value of the BRT properties, which was added to the last calculation year. The FIRR was recalculated at 3.24% before tax and 2.99% after tax. The recalculated FIRR is higher than the weighted average cost of capital of 2.86% for the project, which was recalculated at project completion. Therefore, the BRT system is financially viable. The FIRR at appraisal, 7.5% before corporate income tax and 5.2% after tax, were higher than at completion mainly due to a passenger traffic forecast at appraisal more optimistic than is actual bus ridership. Table A14.2 presents the cash flows of the FIRR recalculations. In comparing with the FIRR at appraisal (7.5% before tax and 5.2% after tax), the recalculated FIRRs are lower, which were mainly caused by lower ticket price applied.

3. Additionally, the FIRR was subject to sensitivity tests. Combining a 10% increase in O&M costs and a 10% decrease in revenue, the FIRR was at 0.94% before tax and 0.72% after tax. The test results indicated that the FIRR was very sensitive to the revenue changes. Therefore, the Fuzhou Public Transport Company should improve their working efficiencies and explore

¹ In Fuzhou, single price is applied for the public bus passengers at CNY1.00 in winter and CNY2.00 in summer (using air conditioning). Free of charge is applied to senior citizens and favorable ticket prices were applied to the students and teachers.

more revenue sources to ensure sufficient revenue to cover the O&M costs. Meanwhile, the municipal government should continue to financially support the operation and development of the public transport in Fuzhou. The results of sensitivity analysis are in the following table.

Table A14.1: Sensitivity Tests

Case	Tests		FIRR (%)	
	O&M Cost	Revenue	Before Tax	After Tax
Base Case			3.24%	2.99%
Changes (+/-)	10%		2.39%	2.15%
	20%		1.50%	1.27%
		10%	4.52%	4.26%
		20%	5.73%	5.45%
		-10%	1.86%	1.63%
		-20%	0.36%	0.14%
	10%	-10%	0.94%	0.72%
	20%	-20%	-1.70%	1.89%

FIRR = financial internal rate of return, O&M = operation and maintenance.

Source: Asian Development Bank project completion review mission.

Table A14.2: Financial Reevaluation for the BRT System
(CNY million)

Year	Cost			Revenue				Profit	Tax	Net Profit
	Capital	O&M	Total	Ticket	Other	Subsidy	Total			
2014	1.27		1.27					-1.27		-1.27
2015	0.18		0.18					-0.18		-0.18
2016	0.09		0.09					-0.09		-0.09
2017	0.38		0.38					-0.38		-0.38
2018	294.08		294.08					-294.08		-294.08
2019	182.10	21.61	203.71	27.52	3.02		30.54	-173.18		-173.18
2020	28.16	26.42	54.58	30.27	3.69		33.96	-20.62		-20.62
2021		27.21	27.21	32.69	4.05		36.75	9.54	0.31	9.22
2022		28.03	28.03	35.31	4.46		39.77	11.74	0.39	11.36
2023		28.87	28.87	38.14	4.90		43.04	14.17	0.47	13.71
2024	25.31	26.42	51.73	41.19	5.40	25.31	71.89	20.16	0.67	19.50
2025		27.21	27.21	44.48	5.93		50.42	23.21	0.77	22.44
2026		28.03	28.03	46.71	6.41		53.11	25.09	0.83	24.26
2027		28.87	28.87	49.04	6.92		55.96	27.10	0.89	26.20
2028		29.73	29.73	51.49	7.48		58.97	29.24	0.96	28.27
2029	75.94	26.42	102.36	54.07	8.07	75.94	138.08	35.72	1.18	34.55
2030		27.21	27.21	56.77	8.72		65.49	38.28	1.26	37.02
2031		28.03	28.03	58.47	9.16		67.63	39.60	1.31	38.30
2032		28.87	28.87	60.23	9.61		69.84	40.98	1.35	39.62
2033		29.73	29.73	62.03	10.09		72.13	42.40	1.40	41.00
2034	25.31	26.42	51.73	63.90	10.60	25.31	99.81	48.08	1.59	46.49
2035		27.21	27.21	65.81	11.13		76.94	49.73	1.64	48.09
2036		28.03	28.03	67.79	11.69		79.47	51.45	1.70	49.75
2037		28.87	28.87	69.82	12.27		82.09	53.22	1.76	51.47
2038		29.73	29.73	71.92	12.88		84.80	55.07	1.82	53.25
2039	-25.31	30.62	5.31	74.07	13.53	75.94	163.54	158.23	5.22	153.01

(before tax)

(after tax)

Financial Net Present Value:	27.16	9.36
Financial Internal Rate of Return:	3.24%	2.99%
WACC:	2.86%	2.86%

O&M = operation and maintenance, WACC = weight average cost of capital.
Source: Asian Development Bank project completion review mission.

CONTRIBUTION TO ADB RESULTS FRAMEWORK

No.	Result Framework Indicator	Target	Achievement	Methods/Comments
1	Beneficiaries from road projects (number in million) Of which, women beneficiaries Of which, urban poor Of which, rural poor	0.45 0.22 0.02 0.01	1.09 0.52 n.a. n.a.	Beneficiaries of the project area.
2	Urban rail- and bus-based mass transit systems built or upgraded (kilometers)	A BRT system of 12.2 km would be built	A BRT system of 12.5 km was built	A BRT system of 12.5 km was constructed and opened to traffic in March 2019, which runs from the north to the south of Fuzhou City with 19 stations (14 island-style, 3 pairs of roadside, and 2 main stations at the ends). The BRT system also includes intelligent dispatching, ticketing, security door, and passenger guidance systems.
3	Roads built or upgraded (kilometers)	Station access roads of 10.2 km would be constructed	Station access roads of 10.2 km were constructed	4 sections of station access roads of totaling 10.2 km were newly constructed, which are with the red line width of 55–70 meters including 6 carriage lanes for motorized vehicle, pedestrian and nonmotorized vehicle lanes, as well as underground utilities and greenbelt.
4	Use of roads built or upgraded (average daily vehicle-kilometers in the first full year of operation)	No target was provided at appraisal	AADT 16,320 vehicles-km in 2020	The station access roads were fully completed in 2019. In the first fully operation year (2020), the traffic was about 1,600 vehicles per day.

AADT = annual average daily traffic, BRT = bus rapid transit, km = kilometer, n.a.=. not available.

Source: Asian Development Bank.

GRANT TERMINAL EVALUATION REPORT

A. Background

1. The Chief Executive Officer of the Global Environment Facility (GEF) endorsed a grant in the amount of \$2,546,300 for the Jiangxi Fuzhou Urban Integrated Infrastructure Improvement Project on 10 September 2013. As the implementing agency, the Asian Development Bank (ADB) approved the grant on 14 May 2014. The GEF grant agreement was signed on 4 June 2015 and became effective on 9 July 2015. The grant was implemented together with the ADB loan project (the baseline project) throughout five years from 2015 to 2019. It was closed on 28 December 2020. Cost details and project phasing information are presented in the Data Annex (Annex A).

2. The project was strongly aligned with, and supportive of, the GEF's objective of promote energy efficient, low-carbon transport and urban systems for the climate change mitigation strategy.

3. The Project comprised the following outputs:

- (i) Component 1: Reducing the greenhouse gas (GHG) intensity of bus operations.
 - (a) Bus Rapid Transit (BRT) system operational efficiency. Alleviating congestion levels at BRT stations through design and operational measures.
 - (b) Maintenance training. Providing maintenance training and preparing a maintenance manual and schedules to ensure that the new buses achieve maximum fuel efficiency and remain in good condition for many years.
 - (c) Driver Training. Providing training for drivers in ways to minimize fuel consumption ('eco-driving') and preparing a driver training manual.
 - (d) Feasibility study for production in Fuzhou of compressed natural gas (CNG) from bio-methane. Studying the feasibility of converting bio-methane from waste materials (such as agricultural waste or waste dumps) into CNG fuel for buses in Fuzhou.
- (ii) Component 2: Upgrade BRT buses to CNG. Providing the incremental cost of upgrading the 51 BRT buses to be procured from diesel to advanced technology CNG.
- (iii) Component 3: CNG Buses for BRT Feeder Services. Providing the full cost of around 10 new CNG buses to replace older, highly polluting vehicles operating on two existing routes that will link with the BRT service.

B. Terms of Reference

4. The GEF grant was integrated with the baseline investment project, and thus the terminal evaluation has been carried out as an integral part of the whole project completion process. Preparation of this terminal evaluation report (TER) has followed the same methodology applied for preparation of the project completion report, which included field investigation, stakeholder consultations, and desk review of the executing agency's project completion report and project performance monitoring system (PPMS) reports regarding the project targets and indicators as set forth in the design and monitoring framework. Actual project costs and financing plan were reviewed. In addition, the TER incorporates findings from a review and updating of the GEF tracking tools, which included (i) management effectiveness tracking tools; (ii) threat assessments; and (iii) financial sustainability scorecards. ADB conducted 14 review missions over the project

implementation, starting with an inception mission in May 2013, and culminating with a project completion review mission in September 2021. The GEF focal point (i.e., Ministry of Finance) was engaged through regular reporting/consultation and commented on the draft final project completion report.

C. Implementation

5. Fuzhou Municipal Government (FMG) was the executing agency (EA) for the project. A Fuzhou Municipal Project Leading Group was established for providing overall leadership, policy guidance, and institutional coordination as required for project preparation and implementation. The Fuzhou Investment Development Company Ltd. (FIDC) was the implementing agency (IA) to carry out day-to-day project implementation and provide coordination support for the project management. A Project Management Office (PMO) for the ADB loan was established under the FIDC to assist the Fuzhou Municipal Project Leading Group with policy guidance, institutional coordination and overall monitoring of project progress and implementation in accordance with the loan and grant agreements, as well as to carry out the project management.

6. The grant was initially expected to be completed in five years. However, the EA proposed to change the alignment of the BRT in 2013 after project approval. The midterm review mission in May 2016 discussed implementation issues and agreed on actions to enhance project progress including the BRT realignment and its construction. ADB approved the realignment and other adjustments as a minor change on 18 July 2016. The loan closing was extended by 1.5 years on 21 April 2017. The closing of the grant was extended to 31 December 2019 accordingly on 7 August 2017.

7. In December 2017, the EA requested to change the BRT and feeder buses from CNG to electric as the national government is promoting use of electric buses and requesting that all the buses should be replaced to electric by 2020. Following the change of bus type, the consulting services for feasibility study for production in Fuzhou of CNG from bio-methane was unnecessary. In addition, the maintenance training of new buses would be as a part of the bus procurement instead of separate consulting service contract. ADB approved the request on 8 December 2017.

8. The electric buses were procured through international competitive bidding in December 2018. A total 29 electric buses financed by the grant were supplied and operational, and the maintenance training for 154 staff of the bus company was provided.

9. Consulting service selections for the driver training and the BRT system operational efficiency were concluded in July 2019. One international consultant and one national consultant for the driver training were recruited and training for 168 drivers were provided. The international consultant for BRT system operational efficiency timely delivered the optimized BRT operating plan, operation, management plan, contingency plan for work safety, and the project operation report.

D. Relevance, Effectiveness, and Impact

1. Relevance

10. The project is relevant. As originally detailed in the GEF CEO endorsement, the project was strongly aligned with GEF-5's climate change strategy, and, with the key expected outcomes of Climate Change Mitigation Objective 4 (CCM-4). The baseline project helped to transform

transport and urban systems in Jiangxi Fuzhou by implementing a BRT-based mass transit system linked to transit-oriented development of the city. The GEF-financed activities worked synergistically with the baseline project to further reduce GHG emissions from the public transport system by (i) instilling energy efficiency and low carbon principles into all aspects of public transport operation and management; and (ii) supporting the incremental cost of introducing less-GHG-intensive buses to operate on the baseline BRT project and feeder services.

11. The PRC is a signatory to major international conventions on climate change conventions and has enshrined climate change as a major issue in national strategies and plans. The PRC had also formulated China's National Climate Change Program outlining objectives, basic principles, key areas of actions, and policies and measures to address climate change. In this context, the PRC had announced a target of a 40%–45% reduction in the carbon intensity of its economy by 2020. As the PRC continues to fight climate change and reduce its carbon emissions, the PRC announced at the United Nations General Assembly in September 2020 that the PRC aims to peak its carbon dioxide emissions by 2030 and achieve carbon neutrality by 2060. In the fourteenth Five-Year Plan (2021–2025) for National Economic and Social Development and the Long-Range Objectives through the Year 2035, achieving new progress in ecological conservation, green transformation production and life style, rational allocation and efficient utilization of energy and resources, reduction of emissions of major pollutants, and improvement of the ecological environment have been set as the major objectives for the economic and social development of the future five-year among others.

12. Fuzhou is a medium size city in Jiangxi Province and its population increased from 3.9 million in 2011 to 4.1 million in 2019. Fuzhou was accentuated by the state of its transport system, which was inadequate to meet the increasing demand from its population. The baseline project has developed a well-designed multimodal transport infrastructure and integrated public transport services in the city, which has reduced transport costs and time, increased the efficiency and attractiveness of the public transport system, and improved regional accessibility to jobs and services. The GEF-funded activities added value by rounding out the baseline project into an integrated package that increased GHG savings benefits. It created a balanced and synergistic response toward achieving a low carbon transport/urban system.

13. The factors described above indicate that the project is highly relevant and fully consistent with the developing strategies of GEF, the PRC national government, and Fuzhou City.

2. Effectiveness

14. The project was effective in achieving its intended outcome of efficient multimodal access to the new main railway station. All outcome indicators have been achieved. The outputs of (i) BRT system, (ii) urban transport hub, (iii) Fenggang River greenway, (iv) station access roads, and (v) institutional strengthening and capacity building have been delivered with achievements of respective performance indicators.

3. Impact

15. With the achievements of project outcome and outputs, all three performance indicators of project impact were achieved: (i) the share of person-trips by public transport increased to 25% in 2020 and exceeded the target of 18%, (ii) the percentage of railway passenger using the BRT

reached the target of 30% in 2020, and (iii) the average concentrations of carbon monoxide (CO)¹ and nitrogen dioxide (NO₂)² in Fuzhou stayed at the levels of 2012 until 2020.

E. Global Environmental Benefits and Catalytic Role

16. An estimate of total and incremental benefits has been recalculated for the baseline project and incremental activities in term of GHG emissions avoided at completion. To the extent possible, the recalculation used same approach of ASIF (Activity x Share x Intensity x Fuel), and methods and parameters consistent with the GEF Manual for Calculating Greenhouse Gas benefits for GEF Transportation Projects and Transport Emissions Evaluation Models for Projects as the estimate in the GEF CEO endorsement. Project lifetime is assumed to be 20 years for major infrastructure and 10 years for other interventions. Total GHG emissions³ avoided (direct and indirect) are estimated to be some 1.46 to 1.58 million tons over the project lifetime.

Table A16.1: GHG Emissions Avoided (million tons)

Indicator	Baseline Project		GEF Incremental Impact		Total	
	Appraisal	Actual	Appraisal	Actual	Appraisal	Actual
Lifetime Direct	0.920	0.922	0.08	0.065	1.000	0.987
Lifetime Direct Post-Project	-		-		-	
Lifetime Indirect – Bottom-up	-		0.940	0.469	0.940	0.469
Lifetime Indirect – Top-down	-		1.570	0.592	1.570	0.592650

GEF = Global Environment Facility, GHG = greenhouse gas.

Source: Asian Development Bank project completion review mission.

F. GEF Tracking Tools

17. Tracking tool for climate change mitigation projects was used to monitor progress of the project. Upon completion, the tracking tool was updated with terminal results. The key indicators on global environmental benefits are highlighted below.

Objective 1: Transfer of Innovative Technologies. Not applicable.

Objective 2: Energy Efficiency. Not applicable.

Objective 3: Renewable Energy. Not applicable.

Objective 4: Transport and Urban Systems. A BRT system was constructed and opened to traffic, including public rapid transit of 12.5 kilometer (km) and nonmotorized transport of 10 km. 133 lower GHG emission vehicles (electric buses) were purchased and in operation, which include 104 buses financed by the loan and 29 buses financed by the grant. Vehicle maintenance training and bus driver training were conducted. The optimized BRT operating plan, operation, management plan, contingency plan for work safety for the BRT system

¹ The local government only started disclosing the parameter of carbon monoxide from 2015. According to the provincial Environmental Quality Reports from 2015 to 2020, the average concentrations of CO in Fuzhou has significantly decreased from 1.7 mg/ m³ (2015) to 1.0 mg/m³ (2020) with over 40% decline.

² According to the provincial Environmental Quality Reports from 2012 to 2020, the average NO₂ concentrations has substantially decreased from 0.22 mg/m³ (2012) to 0.16 mg/m³ (2020) with 27% decline. Despite exceptional fluctuation in less than 10% (0.23 mg/ m³ in 2013 and 0.24 mg/ m³ in 2018), the overall trend has been falling.

³ The reevaluation results are mainly affected by the performance on the BRT operational efficiency, Eco-driving and maintenance, upgrade to new energy resources, and feeder buses. The increased numbers of the BRT buses (from 51 to 83) and the canceled bio-methane adoption mainly attribute to the variation from the estimated results at appraisal, which was at 1.935 to 2.564 million tons.

operational efficiency were developed and implemented. Transport efficiency in terms of vehicle, fuel, and network efficiency was significantly improved. About 500,000 people benefited from the improved transport and urban systems. The total GHG emissions avoided (direct and indirect) are estimated as indicated in para. 16.

Objective 5: Land Use, Land Use Change and Forestry (LULUCF). Not applicable.

Objective 6: Enabling Activities. Not applicable.

G. Sustainability

18. The sustainability of the grant is rated likely sustainable by considering its financial, sociopolitical, institutional framework and governance, and environment risks.

19. **Financial.** There is no financial risk of the project. In the PRC, most public transport operators are state-owned enterprises with the tariff determined by the city governments. The bus operation is generally nonprofit, which is partially supported by local government subsidies. The operation of the BRT system generates revenues through ticketing to passengers. The financial internal rate of return (FIRR) of the BRT system was reevaluated at 3.24% before tax and 2.99% after taxes, which were based on actual capital costs, prevailing operation and maintenance (O&M) costs, and estimations of the revenues. The recalculated FIRR was higher than the weighted average cost of capital of 2.86% recalculated at project completion. The project is considered financially viable. Additionally, the FIRR was subject to sensitivity tests. Combining a 10% increase in O&M costs and a 10% decrease in revenue, the FIRR was at 0.94% before tax and 0.72% after tax for the whole project.

20. The BRT-based mass transit system improved public transport operation efficiency. In addition, the institutional capacity building program including activities for improving BRT system operational efficiency as well as the vehicle maintenance training and bus driver training improved the operation efficiency and reduced the O&M cost, which will certainly alleviate financial pressures of the city governments and the public bus operator.

21. **Sociopolitical.** As indicated in paras.12 and 13, that the project is highly relevant and fully consistent with the developing strategies the PRC national government and Fuzhou City. In the PRC's Five-Year Plan, it specially indicates to promote low-carbon transport development, increase public transport priority, enhance rail transport, encourage green travel, and implement new energy vehicle promotion plan. Reducing vehicle emission, alleviating urban traffic congestion, and improving urban transport operation efficiency are also the urgent task to meet people's necessity for all level governments. No land acquisition and resettlement were needed for the GEF grant components. All land acquisition and resettlement which affected people of the baseline project were compensated and/or well resettled with their lives fully restored. The project did not affect any indigenous people. Above findings indicate that sociopolitical risks to project sustainability are low.

22. **Institutional framework and governance.** As already noted above, the project is strongly aligned with initiatives and strategies of both national and municipal government. The project was implemented using the existing institutional arrangements. The implementing agency is the municipal public investment and management vehicle and the parent company of the only public transport operator in Fuzhou. It has a permanent cadre of staff and well-defined mandate for promoting efficient, low emission, and energy saving public transportation. It is considered as a great advantage for the project's sustainability and any future projects in the same category. The

institutional framework and governance risk is considered low.

23. **Environment.** The implementation of the GEF grant has no environment risk but will contribute to the environmental improvement. For the baseline project, adverse environmental impacts were mitigated adequately throughout implementation. No complain was received from the stakeholders. Given the canceled bio-methane adoption, the overall reduction in GHG emissions was affected in a variation range of 25%-38% of the targeted reduction (1.935–2.564 million tons). However, except to the aspect of GHG saving from bio-methane, GHG saving from other aspect, including the BRT operational efficiency, Eco-diving and maintenance, upgrade to new energy resources, and feeder buses catalyzing, were generally the target of overall reduction in GHG emissions has been achieved. Based on the recalculation results, total GHG emissions avoided (direct and indirect) reached 1.665 to reached 1.46–1.58 million tons over the project lifetime. Overall, the environmental risks to project sustainability are considered low.

H. Monitoring and Evaluation Framework and Institutional Arrangements

24. Monitoring and evaluation (M&E) for the project conformed to both GEF and ADB guidelines for project implementation and M&E. The Project followed the standard M&E procedures, reporting, and supervisory arrangements prescribed by ADB. To monitor the progress of the project in achieving the planned outcome and outputs, at the start of project implementation, PMO, with support from the project implementation consultants, developed a comprehensive PPMS and procedures to generate data systematically on project outcome, inputs, and outputs of each investment output, as well as the agreed upon project performance indicators. These were used to measure the project impact, outcome, outputs, and compliance with ADB safeguard requirements. Baseline data were acquired and updates to the baseline were obtained at requisite time intervals.

25. The key performance parameters were monitored under the PPMS. In addition to regular monitoring, project performance was periodically reviewed jointly by ADB and the Government, to assess implementation performance and achievement of progress toward project outcomes and outputs, financial progress, and to identify issues and constraints affecting implementation. ADB and the Government conducted a midterm review of the project in September 2016 to assess implementation status and take appropriate measures to optimize project performance and ensure achievement of the Project's expected impact and outcomes. The current terminal evaluation represents the concluding step in the required M&E activities.

I. Rating

26. The grant is rated satisfactory. The project was successful in achieving its intended targets, which have helped to establish enabling conditions that are believed to set the stage for realizing the stated impact objective of the project, namely, an efficient, inclusive, and sustainable urban transport system in Jiangxi Fuzhou. The project has demonstrated its relevance, effectiveness, and impact, and has shown a reasonable likelihood that its benefits will be sustainable over the long-term. The project successfully delivered many important results, all of which contributed to the satisfactory rating.

27. The project has made a significant contribution to GEF's strategic objectives, and to Global Environmental Benefits. Furthermore, it is expected that the project can continue to yield important benefits, given the relatively low risks to its sustainability. Finally, it is hoped that lessons from the project can be applied, and that the interventions which were successfully implemented

under the project can be replicated and scaled up in other locations.

Table A16.2: Overall Ratings

Criteria	Rating
Relevance	Relevant
Effectiveness	Effective
Efficiency	Efficient
Sustainability	Likely sustainable
Overall Assessment	Successful

ANNEX A - PROJECT DATA SHEET

I. Project Identification

GEF Project ID: 5411

GEF Agency Project ID: 44007-013

Country: People's Republic of China

Project Title: Asian Sustainable Transport and Urban Development Program (ASTUD):
Jiangxi Fuzhou Urban Integrated Infrastructure Improvement Project

GEF Agency: Asian Development Bank

II. Dates

Milestone	Expected Date	Actual Date
CEO endorsement	--	10 September 2013
Agency approval date	--	14 May 2014
Implementation start	30 September 2014	9 July 2015
Midterm review	--	23–30 May 2016
Project completion	31 December 2017	31 December 2019
Terminal evaluation completion	31 December 2018	6–10 September 2021
Project closing	--	28 December 2020

Source: Asian Development Bank.

III. Project Framework

Project Component	Activity type (TA or INV)	GEF Financing (\$ million)		Cofinancing (\$ million)	
		Appraisal	Actual	Appraisal	Actual
1. Jiangxi Fuzhou Urban Integrated Infrastructure Improvement Project (Baseline Project)	INV	0.00	0.00	204.13	156.05
2. Jiangxi Fuzhou Urban Integrated Infrastructure Improvement Project (Baseline Project)	TA	0.00	0.00	3.43	1.34
3. Improving the GHG intensity of bus operations	TA	0.55	0.22	1.06	0.00
4. Upgrade BRT buses to CNG	INV	0.90	2.27	8.51	34.92
5. CNG Buses for BRT Feeder Services	INV	1.10		0.00	
Project Management Cost		0.00	0	9.33	4.79
Total		2.55	2.49	226.46	197.10

BRT= bus rapid transit, CNG = compressed natural gas, GEF = Global Environment Fund, GHG= greenhouse gas, INV= investment, TA= technical assistance.

IV. Cofinancing (\$ million)

Source	Financing Type	Appraisal	Actual
Local Government	Grant	126.46	106.38
GEF Agency (ADB)	Hard-loan	100.00	90.72
Total		226.16	197.10

GEF = Global Environment Facility.