



# Report and Recommendation of the President to the Board of Directors

---

Project Number: 45507  
February 2014

Proposed Loan  
People's Republic of China: Yunnan Chuxiong  
Urban Environment Improvement Project

Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 13 February 2014)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.1649
\$1.00	=	CNY6.0634

## ABBREVIATIONS

ADB	–	Asian Development Bank
CPG	–	Chuxiong Yi autonomous prefecture government
GMS	–	Greater Mekong Subregion
km	–	kilometer
O&M	–	operation and maintenance
PAM	–	project administration manual
PIU	–	project implementing unit
PRC	–	People's Republic of China
YPG	–	Yunnan provincial government

## NOTE

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

<b>Vice-President</b>	S. Groff, Operations 2
<b>Director General</b>	A. Konishi, East Asia Department (EARD)
<b>Directors</b>	D. Sharan, Urban and Social Sectors Division, EARD H. Sharif, People's Republic of China Resident Mission (PRCM), EARD
<b>Team leader</b>	S. Ishii, Urban Development Specialist, EARD
<b>Team members</b>	R. Benigno, Operations Assistant, EARD C. Chu, Senior Portfolio Management Officer, EARD M. Gupta, Principal Safeguards Specialist (Resettlement), EARD J. Huang, Senior Urban Development Specialist, Regional Sustainable Development Department S. Kawazu, Senior Counsel, Office of the General Counsel A. Morel, Environment Specialist, EARD W. Walker, Principal Social Development Specialist, EARD Y. Zhou, Associate Project Analyst, PRCM, EARD L. Zou, Senior Financial Management Specialist, EARD
<b>Peer reviewer</b>	R. Frauendorfer, Lead Urban Development Specialist, Southeast Asia Department

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

## CONTENTS

	<b>Page</b>
PROJECT AT A GLANCE	
I. THE PROPOSAL	1
II. THE PROJECT	1
A. Rationale	1
B. Impact and Outcome	3
C. Outputs	3
D. Investment and Financing Plans	4
E. Implementation Arrangements	5
III. DUE DILIGENCE	6
A. Technical	6
B. Economic and Financial	6
C. Governance	7
D. Poverty and Social	7
E. Safeguards	8
F. Risks and Mitigating Measures	9
IV. ASSURANCES	10
V. RECOMMENDATION	10
APPENDIXES	
1. Design and Monitoring Framework	11
2. List of Linked Documents	14

## PROJECT AT A GLANCE

<b>1. Project Name:</b> Yunnan Chuxiong Urban Environment Improvement Project		<b>2. Project Number:</b> 45507-003	
<b>3. Country:</b> China, People's Republic of		<b>4. Department/Division:</b> East Asia Department/Urban and Social Sectors Division	
<b>5. Sector Classification:</b>			
		<b>Sectors</b>	<b>Primary</b>
		Multisector	√
			<b>Subsectors</b>
			Irrigation, drainage, and flood protection
			Road transport
			Waste management
<b>6. Thematic Classification:</b>			
		<b>Themes</b>	<b>Primary</b>
		Economic growth	
		Environmental sustainability	√
		Regional cooperation and integration	
			<b>Subthemes</b>
			Promoting economic efficiency and enabling business environment
			Urban environmental improvement
			Trade and investments
<b>6a. Climate Change Impact</b>		<b>6b. Gender Mainstreaming</b>	
Adaptation		Gender equity theme (GEN)	
Low			
Mitigation		Effective gender mainstreaming (EGM)	
		√	
		Some gender elements (SGE)	
		No gender elements (NGE)	
<b>7. Targeting Classification:</b>			
<b>General Intervention</b>	<b>Targeted Intervention</b>		
	<b>Geographic dimensions of inclusive growth</b>	<b>Millennium development goals</b>	<b>Income poverty at household level</b>
		√ MDG7	
<b>8. Location Impact:</b>			
Urban		High	
<b>9. Project Risk Categorization:</b> Complex			
<b>10. Safeguards Categorization:</b>			
		Environment	A
		Involuntary resettlement	A
		Indigenous peoples	B
<b>11. ADB Financing:</b>			
<b>Sovereign/Nonsovereign</b>	<b>Modality</b>	<b>Source</b>	<b>Amount (\$ Million)</b>
Sovereign	Project loan	Ordinary capital resources	150.0
Total			150.0
<b>12. Cofinancing:</b>			
No Cofinancing available.			
<b>13. Counterpart Financing:</b>			
<b>Source</b>		<b>Amount (\$ Million)</b>	
Government		175.7	
Others		84.7	
Total		260.4	
<b>14. Aid Effectiveness:</b>			
Parallel project implementation unit		No	
Program-based approach		No	

## I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to the People's Republic of China (PRC) for the Yunnan Chuxiong Urban Environment Improvement Project.<sup>1</sup>

2. The project will support socially inclusive and environmentally sound development in three small and medium-sized cities in Chuxiong Municipality, Lufeng County, and Wuding County in Yunnan Province. It will (i) reduce flood risks and enhance public amenities, (ii) improve sanitation and public health, (iii) expand urban road networks, and (iv) promote public participation in urban development.<sup>2</sup> By supporting the development of three cities comprising the central Yunnan city cluster, the project will contribute to regional economic integration between the PRC and the other countries of the Greater Mekong Subregion (GMS).

## II. THE PROJECT

### A. Rationale

3. Yunnan, one of the 12 less-developed municipality, provinces and autonomous regions targeted under the PRC's Western Development Strategy, is landlocked, mountainous, and hilly. Sharing 4,060 kilometers (km) of border with the Lao People's Democratic Republic, Myanmar and Viet Nam, its location provides it with a particular geographical advantage of emerging as an important national transport and trade gateway for the western inland PRC to connect with the neighboring countries of the GMS. Because of this, Yunnan is endowed with an opportunity to support the PRC's greater geographical balance in social and economic development across the country. Since 2001, it has added 55,099 km of national roads and highways to expand the transportation links within Yunnan as well as with those neighboring GMS countries.<sup>3</sup> Despite its development potential, Yunnan's economy has grown more slowly than those of the other Western inland provinces and autonomous regions. The provincial per capita gross domestic product in 2012 was \$3,505, only 58% of the PRC average of \$6,093. Although the provincial capital of Kunming is strategically located at the junction of three major GMS transport corridors, Yunnan's share in the PRC's trade with the other GMS countries declined steadily from 20% to 16% during 2001–2012.<sup>4</sup>

4. A key constraint on Yunnan's socioeconomic growth and economic integration into the GMS is its low urbanization rate and the poor competitiveness of its second- and third-tier cities.<sup>5</sup> Despite rapid development in the capital city of Kunming, many of the province's small and medium-sized cities suffer from inadequate basic infrastructure and remain isolated economically. Under its 12th five-year plan covering 2011–2015, Yunnan aims to stimulate its socioeconomic growth by developing clusters of cities with a variety of industries and commercial activities to create economic growth poles. Yunnan needs a strong support to develop economically and commercially competitive second- and third-tier cities and their city clusters to transform the regional transport corridors already established through the province's

---

<sup>1</sup> The design and monitoring framework is in Appendix 1.

<sup>2</sup> The Asian Development Bank (ADB) provided technical assistance to prepare the project: ADB. 2011. *Technical Assistance to the People's Republic of China for Preparing the Yunnan Chuxiong Urban Infrastructure Development Project*. Manila (TA 7891-PRC).

<sup>3</sup> Yunnan Bureau of Statistics. 2013. *Yunnan Statistical Year Book 2013*. Kunming.

<sup>4</sup> Kunming is located on the northern, eastern, and north–south corridors of the GMS. During 2001–2012, annual trade between the PRC and other GMS countries increased from \$10.8 billion to \$131.8 billion. Yunnan's share grew from \$2.2 billion to \$21.0 billion over the same period.

<sup>5</sup> Yunnan urbanization rate was 39% in 2012, compared with the national average of 53%.

rapid highway expansion program into corridors of economic development.

5. The three project cities are key centers of the Chuxiong Yi autonomous prefecture, which lies 165 km west of Kunming. The prefecture is especially important to government efforts to (i) strengthen socioeconomic links between Kunming and the surrounding small and medium-sized cities and thereby enhance the overall economic competitiveness of the central Yunnan city cluster, and (ii) promote regional economic cooperation between Yunnan and the other GMS countries, since the prefecture is a western gateway to Myanmar.<sup>6</sup> However, urban expansion has been limited in the three cities by their predominantly hilly and mountainous terrain. Like other small and medium-sized centers in the province, living conditions and their business and investment environments have been degraded by inadequate flood management and poor sanitation services. Their weak urban infrastructure is holding back not only socioeconomic development for their residents but also wider regional economic integration across the province.<sup>7</sup>

6. The Yunnan Chuxiong Urban Environment Improvement Project will provide Asian Development Bank (ADB) lending for second- and third-tier city development of the province through various new approaches. It will include measures to address the frequent flooding in three cities and their surrounding agricultural lands that currently restricts their city expansion and economic development. Although the PRC generally relies heavily on engineering measures to contain flooding, the project will adopt an ecologically sound, climate resilient design that will balance engineering measures with river ecosystem conservation and the enhancement of public amenities. Based on international good practice, it will also introduce the use of storm water detention ponds in Yunnan to mitigate downstream impacts and pollution from storm water runoff.<sup>8</sup> The poor sanitation in the project cities results from their inability to handle the growing amounts of solid waste and their inadequate sewage pipeline networks. The project will help each city develop comprehensive solid waste management plans and will raise public awareness of the need to reduce, reuse, and recycle waste. The project will also demonstrate how construction of city roads with added functions of harvesting rainwater and intercepting sewage from surrounding villages can improve the city environment. The roads will also be equipped with energy-saving streetlights. The project will strongly encourage the public to participate in river landscaping and city planning to reflect public priorities.

7. The project is in line with ADB's country partnership strategy, 2011–2015 for the PRC.<sup>9</sup> It aligns with ADB's water operational plan by incorporating socially inclusive and integrated water resource management principles.<sup>10</sup> It is also in line with the aims of ADB's urban operational plan to enhance the competitiveness and livability of cities through urban development.<sup>11</sup> By promoting sustainable urbanization and a better balance in the currently uneven growth and development of the PRC's regions, the project also supports the PRC's 12th Five-Year Plan,

---

<sup>6</sup> ADB approved three loan projects to develop the GMS northern corridor connecting Chuxiong and Ruili, a city on the border between Myanmar and the PRC: ADB. 1994. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Heilongjiang and Yunnan Expressway Projects*. Manila; ADB. 2003. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Western Yunnan Roads Development Project*. Manila; ADB. 2003. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Yunnan Integrated Road Network Development Project*. Manila.

<sup>7</sup> Sector Assessment (accessible from the list of linked documents in Appendix 2).

<sup>8</sup> A flood detention pond is a pond with function of storage for flood water and urban storm water runoff. It is called "detention pond" because the pond will be dried up during the dry seasons.

<sup>9</sup> ADB. 2012. *Country Partnership Strategy: People's Republic of China, 2011–2015*. Manila.

<sup>10</sup> ADB. 2011. *Water Operational Plan 2011–2020*. Manila.

<sup>11</sup> ADB. 2012. *Urban Operational Plan 2012–2020*. Manila.

2011–2015 for national economic and social development, as well as related provincial, prefecture, and municipal plans.<sup>12</sup> The project will contribute to Yunnan’s sustainable development strategy for 2008–2020, particularly its goal of promoting urban environmental management and expanding environmental infrastructure.<sup>13</sup>

8. ADB has previous experience in water supply, highway, railway, and urban and rural road projects in Yunnan. Project preparation has incorporated lessons from these projects, including the need for (i) sound institutional arrangements, (ii) strong project management support during project start-up, and (iii) comprehensive capacity building on ADB policies, guidelines, and procedures for procurement and contract management.

## **B. Impact and Outcome**

9. The impact will be more competitive, green, and inclusive city development in Chuxiong Municipality, Lufeng County, and Wuding County that will support the development of the central Yunnan city cluster. The outcome will be the improvement of the urban infrastructure and the environment in cities of Chuxiong Municipality, Lufeng County, and Wuding County.

## **C. Outputs**

10. **Output 1–Chuxiong Municipality.** The project will build embankments along Longchuan river with landscaping for 6.2 km and provide a flood early warning system. It will construct 9.0 km of urban roads and related infrastructure, including water supply, sewerage, and storm water pipelines, sewage interceptor facilities, and power and communication networks. It will also provide an integrated traffic control and traffic management system and equipment for municipal solid waste management, including garbage compressing vehicles, garbage collection vehicles, and street sweeping vehicles.

11. **Output 2–Lufeng County.** The project will build embankments along the East River and West River with landscaping for 12.2 km, and provide a flood early warning system. It will construct 7.5 km of urban roads and related infrastructure, including a storm water detention pond with capacity of 68,100 cubic meters; water supply, sewerage, and storm water pipelines; and sewage interceptor facilities and power and communication networks. It will provide equipment for municipal solid waste management, including garbage compressing vehicles, garbage collection vehicles, and street sweeping vehicles.

12. **Output 3–Wuding County.** The project will construct embankments along the Wulong River with landscaping for 5.2 km, and provide a flood early warning system. It will build 9.4 km of urban roads, along with related infrastructure. The infrastructure will include a storm water detention pond with a capacity of 16,800 cubic meters, water supply, sewerage, and storm water pipelines, sewage interceptor facilities, and power and communication networks. The project will provide equipment for municipal solid waste management, including garbage compressing vehicles, garbage collection vehicles, and street sweeping vehicles.

13. **Output 4–Capacity Development and Institutional Strengthening.** The project will strengthen capacity and institutions for the project’s management. It will provide expert support and advice on storm water management, municipal solid waste planning and management, and

---

<sup>12</sup> All subprojects are listed under the respective urban master plans of Chuxiong Municipality, Lufeng County, and Wuding County.

<sup>13</sup> Yunnan Environment Protection Bureau. 2008. *Yunnan Sustainable Development Strategy*. Kunming.

the management of urban transport. It will support public awareness activities on subjects including road safety and solid waste recycling. It will also provide training, seminars, workshops, and study tours on operation and maintenance of project facilities, public financial management and environmental awareness raising activities.

#### D. Investment and Financing Plans

14. The project is estimated to cost \$410.4 million (Table 1).

**Table 1: Project Investment Plan**  
(\$ million)

Item	Amount <sup>a</sup>
<b>A. Base Cost<sup>d</sup></b>	
1. Chuxiong urban infrastructure and environment improvement	122.6
2. Lufeng urban infrastructure and environment improvement	144.2
3. Wuding urban infrastructure and environment improvement	84.7
4. Capacity development and institutional strengthening	2.0
<b>Subtotal (A)</b>	<b>353.5</b>
<b>B. Contingencies<sup>c</sup></b>	<b>42.2</b>
<b>C. Financing Charges During Implementation<sup>d</sup></b>	<b>14.7</b>
<b>Total (A+B+C)</b>	<b>410.4</b>

<sup>a</sup> Includes taxes and duties of \$12.2 million to be financed from government and Asian Development Bank (ADB) loan resources. The following principles were followed in determining the amount of taxes and duties to be financed by ADB: (i) the amount is within reasonable country thresholds; (ii) the amount represents 3.5% of base cost, not an excessive share of the project investment plan; (iii) taxes and duties apply only to ADB-financed expenditures; and (iv) the financing of the taxes and duties is relevant to the success of the project.

<sup>b</sup> In mid-2013 prices.

<sup>c</sup> Physical contingencies computed at 8% for civil works, field research and development, training, surveys, and studies. Price contingencies computed at 1.9% on foreign exchange costs and 3.5% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Includes interest and commitment charges. Interest during construction for the ADB loan has been computed at the 5-year US dollar fixed swap rate plus a spread of 0.40% and a maturity premium of 0.20%. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount. Interest during construction for the domestic bank loan has been computed at the domestic rate of 8.8%.

Source: Asian Development Bank estimates.

15. The government has requested a loan of \$150.0 million from ADB's ordinary capital resources to help finance the project. The loan will have a 25-year term, including a grace period of 6 years, a 10% annuity repayment option, an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility, a commitment charge of 0.15% per year, the interest during construction to be capitalized in the loan, and such other terms and conditions set forth in the draft loan and project agreements. Based on this, the average loan maturity is 18.53 years and the maturity premium payable to ADB is 0.20% per annum. The ADB loan will also finance taxes and duties for eligible ADB-financed expenditures and transportation and insurance costs included in the base cost for ensuring smooth project implementation. The loan will finance 36.5% of the project cost. The government will finance \$175.7 million through counterpart funds from the three project municipal and county governments. The remaining \$84.7 million will be financed by local domestic banks (Table 2).

16. The PRC is the borrower of the loan and will make the loan available through the Yunnan provincial government (YPG) and the Chuxiong Yi autonomous prefecture government (CPG) to the three project municipal and county governments on the same terms and conditions as those of the ADB loan. The project municipal and county governments will assume the



foreign exchange and interest variation risks of the ADB loan. The government has assured ADB that counterpart funding will be provided in a timely manner, including any additional counterpart funding required due to any shortfall of funds, delay in appropriation of domestic bank loans, or cost overruns. The indicative flow of funds and the lending arrangements are in the project administration manual (PAM).<sup>14</sup>

**Table 2: Financing Plan**

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank		
Ordinary capital resources (loan)	150.0	36.5
Chuxiong municipal government	57.2	14.0
Lufeng county government	81.9	20.0
Wuding county government	36.6	8.9
Domestic banks	84.7	20.6
<b>Total</b>	<b>410.4</b>	<b>100.0</b>

Source: Asian Development Bank estimates.

## E. Implementation Arrangements

17. Implementation arrangements are summarized in Table 3.

**Table 3: Implementation Arrangements**

Aspects	Arrangements		
Implementation period	June 2014–December 2018		
Completion date	31 December 2018 (estimated loan closing date: 30 June 2019)		
<b>Management</b>			
(i) Oversight body	Chuxiong Yi autonomous prefecture government (CPG) project leading group.		
(ii) Executing agency	The CPG will be the executing agency and take overall responsibility for project implementation. The project management office, established under the CPG finance bureau, will handle overall coordination and management of the project.		
(iii) Key implementing agencies	The three project municipal and county governments will be the implementing agencies and take overall responsibility for implementing subprojects. Each project municipal and county government will set up a respective project leading group and their project management offices will supervise day-to-day activities and provide coordination support for the implementation of subprojects.		
(iv) Implementation unit	On behalf of the implementing agencies, project implementation units that specialize in urban infrastructure construction will carry out the day-to-day work, including engineering supervision and procurement of goods and civil works.		
Procurement	International competitive bidding	7 contracts	\$61.20 million
	National competitive bidding	22 contracts	\$125.00 million
	Shopping	5 contracts	\$0.05 million
Consulting services	Individual consultant selection	9 person-months	\$0.16 million
	Quality- and cost-based selection	112 person-months	\$1.84 million
Retroactive financing and/or advance contracting	Advanced contracting and retroactive financing will be used for 3 consulting service, 1 goods, and 2 civil works contracts. Retroactive financing will finance up to \$30 million of eligible expenditure—20% of the Asian Development Bank (ADB) loan—that is incurred prior to loan effectiveness but not earlier than 12 months before the loan agreement is signed.		
Disbursement	The loan proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook</i> (2012, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.		

Source: Asian Development Bank estimates.

<sup>14</sup> PAM (accessible from the list of linked documents in Appendix 2).

### III. DUE DILIGENCE

#### A. Technical

18. The project is technically feasible as a result of a detailed examination of the project's compatibility with the PRC's engineering guidelines, local conditions, the level of flood protection required, the minimization of environment impacts, the projections of traffic demand and waste generation, and the need for earthquake proofing. The existing water supply plants, wastewater treatment plants, and landfills have enough capacity to support the project. Alternative technical option analysis identified appropriate slope protection and river cross-section design, the preferred road alignments, and their cross-sections in terms of economic and safeguards aspects. The project promotes climate resilience by installing and upgrading flood monitoring and early warning systems. The project will provide capacity development training to ensure sustainable operation and maintenance (O&M) of project facilities. The project's demonstration features were technically supported by (i) river course designs that retain natural hydrological features and habitat diversity, reduce water pollution, and improve public access to the waterfront; (ii) improved storm water pipeline alignments for storm water detention ponds; (iii) provision of waste handling vehicles and equipment to promote the reuse, reducing, and recycling of waste; (iv) sewage interception facilities; and (v) road designs with nonmotorized transport lanes, rainwater collecting pits to store water for landscaping, and energy-efficient streetlights.

#### B. Economic and Financial

19. **Economic analysis.** The economic analysis evaluated technical options and confirmed that all subprojects were the least-cost ways to support the CPG's long-term development plans and the master plans of cities in project municipality and counties. Economic internal rates of return were computed at 15.3% for the project overall, 16.1% for the Chuxiong subproject, 12.7% for the Lufeng subproject, and 17.4% for the Wuding subproject. All exceed the economic opportunity cost of capital of 12.0%. Project's quantified economic benefits include (i) savings in vehicle operating costs and time, (ii) the avoidance of flood damage through the project's flood protection measures, and (iii) improved solid waste management. The economic costs comprise (i) the capital costs, including physical contingencies, and (ii) O&M costs. Sensitivity analysis showed that the project's overall economic internal rate of return would drop to 12.5% under the combined impacts of a 10.0% reduction in benefits, a 1-year implementation delay, and a 10.0% capital cost overrun. The actual economic benefits may be higher than the basic projections because the following benefits were not quantified in the evaluation: (i) the qualitative benefits of improved sanitation in villages that will be protected by the enhanced project wastewater pipeline infrastructure with intercepting villages' untreated wastewater flows; (ii) the amenity benefits through enhanced public access to the improved waterside environment and (iii) the economic activity benefits gained through the reduction in flood events that the project will ensure.<sup>15</sup>

20. **Financial sustainability analysis.** Financial analysis was carried out by assessing the project municipal and county governments' finances to ensure the fiscal sustainability of the three subprojects during the implementation and operation phases. The fiscal impact was assessed by comparing annual revenues from the identified financing sources of the three governments with the annual counterpart funds required for (i) capital expenditures during project implementation, and (ii) recurrent costs for O&M and debt service during the operation

---

<sup>15</sup> Economic Analysis (accessible from the list of linked documents in Appendix 2).

period. The analysis indicated that the project municipal and county governments will have sufficient counterpart funds during project implementation and funds for O&M and debt service during operations afterwards. During implementation, annual counterpart funds and interest payments required will be 0.4%–2.6% of the projected fiscal revenues for the Chuxiong municipal government, 1.1%–7.6% for the Lufeng county government, and 1.0%–3.9% for the Wuding county government. O&M and debt service requirements will be 0.3%–0.6% of projected revenues for the three governments in 2020, when principal repayment of ADB loan will start. Although the analysis therefore indicates that the fiscal risk assumed by the three governments in financing their subprojects is acceptable, training will be conducted to strengthen their capacity for public financial management.<sup>16</sup>

### **C. Governance**

21. The YPG has extensive experience in managing projects financed by multilateral institutions, including ADB and the World Bank. Lessons are being passed from the YPG and the other entities experienced in ADB projects to the CPG and the project municipal and county governments to help them implement the project effectively. Although these governments are new to handling projects supported by multilateral institutions, all the project implementation units (PIUs) have overseen the construction of similar projects that were financed domestically. Procurement and financial management capacity assessments have identified weaknesses in the PIUs, including the lack of internal audit systems. These weaknesses will be addressed by the project capacity development and institutional strengthening component. Through these risk mitigation measures, the CPG, the project municipal and county governments, and the PIUs will gain the ability to undertake procurement and financial management in accordance with ADB policies and procedural requirements. ADB's Anticorruption Policy (1998, as amended to date) and its Accountability Mechanism Policy (2012) were explained to and discussed with the CPG, the three project municipal and county governments, and the PIUs. Under the YPG's supervision and coordination, the CPG, the project municipal and county governments, and the PIUs are being provided with support and knowledge on procurement, public financial management, and governance issues by YPG agencies and personnel experienced in implementing and meeting the requirements of projects financed by multilateral institutions in the province. A procurement specialist will be engaged under the project as a start-up consultant for the CPG. A procurement agency has been engaged to support the tendering process. The project implementation consulting services will include both procurement and financial specialists to support project implementation and conduct training. Specific policy requirements and supplementary measures are described in the PAM (footnote 14).

### **D. Poverty and Social**

22. An estimated 757,900 people will benefit directly from the project. The urban and rural poverty rates in the three project city areas are above the national averages. Wuding County has especially high urban poverty rate of 16.7%. By improving flood protection and early warning systems, upgrading sanitation and solid waste management, and building safer urban roads to provide access to land for city expansion, the project will contribute to balanced social and economic development in three cities in project municipality and counties. It will reduce future physical damage, economic loss, and farm land degradation from flooding. It will reduce public health risks by improving sanitation. The project will generate economic and employment opportunities, especially for the urban and rural poor. The project will enhance the participation of local communities, including the poor, in urban planning processes and the setting of utility

---

<sup>16</sup> Financial Analysis (accessible from the list of linked documents in Appendix 2).

tariffs. The project will demonstrate approaches for urban development for replication elsewhere in the province and will thereby indirectly benefit the residents of other small and medium-sized cities in Yunnan. A social action plan was prepared to ensure inclusive benefits. It will be monitored by a resettlement and social development specialist under the project management consulting service.<sup>17</sup>

23. **Gender benefits.** The project is categorized as effective gender mainstreaming. In a household survey and focus group discussions, the women consulted considered the improvements in traffic safety and access to transport facilities to be provided under the project as important benefits, since they are the primary users of public transportation and pedestrian sidewalks. The women also welcomed as particularly beneficial the project's intended improvements in solid waste management; the introduction of the reduce, reuse, and recycle concept; and the creation of recreational public spaces adjacent to the rivers. The project will improve access to social services for women and provide them with new employment and income opportunities. A gender action plan prepared for the project includes (i) a target to provide at least 20% of the employment opportunities generated during construction to women, as well as at least 50% of the jobs for landscaping, street clearing, and solid waste collection during operations; (ii) steps to ensure that women will participate in trainings on road safety, and waste separation and management; (iii) the collection of sex disaggregated survey data; and (iv) the monitoring of the gender action plan indicators. With the assistance of the resettlement and social development specialist under the project management consulting service, the project municipal and county governments will be responsible for implementing the gender action plan and reporting on progress and achievements of gender benefits under the project.<sup>18</sup>

## E. Safeguards

24. **Environment.** The project is classified category A for environment. An environmental impact assessment was drafted in compliance with ADB's Safeguard Policy Statement (2009) and posted on the ADB website on 18 July 2013. The environmental impact assessment concluded that the anticipated environmental impacts and risks can be mitigated to acceptable levels through the implementation of the environmental management plan.<sup>19</sup> During construction, the focus will be on proper earthwork management, soil erosion and water resources protection, and sound construction site management. During operation, special attention will be paid to mitigating traffic noise at sensitive sites and strengthening the early warning system for floods, traffic safety, and solid waste management in Chuxiong Municipality, Lufeng County, and Wuding County. Monitoring of the project's environmental performance will be conducted during project construction and operation by contractors, construction supervision companies, and local environmental monitoring stations. The monitoring will be verified by an independent external monitor. The CPG and the project municipal and county governments are committed to managing the identified environmental risks and have agreed on a comprehensive set of environment-related loan covenants and a training program with a strong emphasis on environment safeguards. Environment safeguard documents were disclosed to the affected people. Potential environmental complaints or disputes will be handled in accordance with the grievance redress mechanism established for the project.

---

<sup>17</sup> Summary Poverty Reduction and Social Strategy (accessible from the list of linked documents in Appendix 2). The social action plan is included in the PAM (footnote 14).

<sup>18</sup> Gender Action Plan (accessible from the list of linked documents in Appendix 2).

<sup>19</sup> The draft environmental management plan is provided as an attachment of the PAM (footnote 14).

25. **Involuntary resettlement.** The project is classified category A for involuntary resettlement. Three resettlement plans and one resettlement and ethnic minority development plan were prepared in line with ADB's Safeguard Policy Statement and were approved by ADB and the government. The plans were disclosed to the affected persons and uploaded to the ADB website in October 2013. Overall, the project will affect 8,639 persons, including 652 who will be relocated. The project will permanently acquire 2,261 *mu* of collective and state-owned land, and demolish 40,814 square meters of residential and nonresidential buildings.<sup>20</sup> The project municipal and county governments have assured ADB that funds for resettlement will be made available on a timely basis. The capacity development and institutional strengthening activities will include support for implementing resettlement. The implementation of the resettlement plans and the resettlement and ethnic minority development plan will be monitored and evaluated internally and externally. The three project municipal and county governments and PIUs have fulltime staff members responsible for land acquisition and resettlement who will regularly report implementation progress to the CPG and submit quarterly progress reports to ADB. The external monitor will review the progress and general welfare of affected persons to assess whether they have fully regained their standard of living. Monitoring and evaluation reports will be prepared semiannually during implementation and annually for 2 years after resettlement is complete. They will be submitted to ADB and publicly disclosed. The project has also established a transparent grievance mechanism that will provide meaningful consultation and trigger remedial action defined for the project.

26. **Indigenous peoples.** The project is classified category B for the indigenous peoples safeguard. The majority of the population in Yunnan and in the project cities belong to more than 25 ethnic minorities. Ethnic minorities in Chuxiong Municipality and Lufeng County are well-integrated socially and economically in the cities and do not live in distinct communities in the project areas. In Wuding County, a minority ethnic Hui village will be affected by the subproject's road construction, primarily through land acquisition and the resettlement of three households. Aside from the land acquisition and concerns over noise during construction activities, no negative impacts have been identified in the village during extensive consultations. The village population supports the project, which it expects to provide it with improved mobility and access to the city center. The education and household income levels of the ethnic minority and majority populations are the same in these project cities, and ethnic minorities benefit from many preferential policies that provide them with representation in politics and access to schools and programs in rural areas for poverty alleviation. A resettlement and ethnic minority development plan that outlines the issues and actions for ethnic minority integration in the resettlement plan for the Wuding subproject was approved, disclosed to the affected persons, and uploaded to the ADB website in October 2013.

## F. Risks and Mitigating Measures

27. Major risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.<sup>21</sup> The integrated benefits and impacts are expected to outweigh the costs.

**Table 4: Summary of Risks and Mitigating Measures**

Risks	Mitigating Measures
The project municipal and county governments and their PIUs lack	A procurement specialist will be engaged under the start-up consulting service and the PMC will provide assistance to the

<sup>20</sup> A *mu* is a Chinese unit of measurement (1 *mu* = 666.7 square meters).

<sup>21</sup> Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

<b>Risks</b>	<b>Mitigating Measures</b>
experience in civil works and goods procurement under ADB-funded projects, which could adversely affect project implementation.	implementing agencies and PIUs during project implementation. The CPG will engage an experienced tendering company to provide hands-on training to the staff of implementing agencies and PIUs. The PMC will provide training in ADB procurement procedures through the loan capacity-building component. The YPG will ensure that implementing agencies and PIUs with experience from other ADB projects in Yunnan Province transfer knowledge to the implementing agencies and PIUs.
The lack of an effective anticorruption strategy and/or action plans in the PIUs could weaken transparency, accountability, and the effort to prevent corruption.	The PMC will organize seminars on ethical values and provide assistance to establish a public complaint system. The CPG will check performance and remind relevant agencies during day-to-day operations and communications of loan covenants against corruption.
Delays in approval and implementation of land acquisition and resettlement could put the project behind schedule.	Implementing agencies will arrange compensation funds for affected persons and land for contractors at an early stage. The YPG will ensure that implementing agencies and PIUs with experience from other ADB projects in Yunnan Province transfer knowledge to the implementing agencies and PIUs.
The high debt levels of implementing agencies and/or a late appropriation of domestic bank loans may result in late provision of counterpart funding and threaten the project's financial sustainability.	The CPG and the implementing agencies agreed with their local banks to issue the commitment letters of the domestic bank loans. The CPG and the PMC will conduct public financial management training and workshops to (i) ensure sound financial management, (ii) strengthen the creditworthiness of the three project governments for appropriating alternative financing options, and (iii) avoid delay in the disbursement process.

ADB = Asian Development Bank, CPG = Chuxiong Yi autonomous prefecture government, PIU = project implementing unit, PMC = project management consultant, YPG = Yunnan provincial government.

Source: Asian Development Bank estimates.

#### **IV. ASSURANCES**

28. The government has assured ADB that implementation of the project shall conform to all applicable ADB policies including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the project administration manual and loan documents. The government has also agreed with ADB on certain covenants for the project, which are set forth in the loan and project agreements.

#### **V. RECOMMENDATION**

29. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan of \$150,000,000 to the People's Republic of China for the Yunnan Chuxiong Urban Environment Improvement Project, from ADB's ordinary capital resources, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; for a term of 25 years, including a grace period of 6 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board.

Takehiko Nakao  
President

25 February 2014

## DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p><b>Impact</b></p> <p>More competitive, green, and inclusive city development in Chuxiong Municipality, Lufeng County, and Wuding County that will support the development of the central Yunnan city cluster</p>	<p><b>By 2022 (Baseline 2011)</b></p> <p><b>Competitive.</b> Average per capita disposable income of urban households increased by 8% per annum from CNY19,417 in Chuxiong, 8% per annum from CNY18,980 in Lufeng, and 7% per annum from CNY15,018 in Wuding</p> <p><b>Green.</b> Open urban green space increased by 100,000 m<sup>2</sup> per annum in Chuxiong, 95,000 m<sup>2</sup> in Lufeng, and 55,000 m<sup>2</sup> in Wuding</p> <p><b>Inclusive.</b> Public satisfaction with environmental and municipal services increased from 67.5% to 80.0% in Chuxiong, from 23.8% to 50.0% in Lufeng, and from 20.0% to 50.0% in Wuding (based on sex disaggregated data)</p> <p>Contribution of the central Yunnan city cluster to Yunnan's GDP increased from 57% to 70%</p>	<p>Statistical yearbooks of Chuxiong Municipality, Lufeng County, and Wuding County</p> <p>Statistical yearbooks of Chuxiong Municipality, Lufeng County, and Wuding County</p> <p>Statistical yearbooks of Chuxiong Municipality, Lufeng County, and Wuding County</p> <p>Statistics published annually by Yunnan provincial statistical office</p>	<p><b>Assumptions</b></p> <p>Socioeconomic development of Yunnan Province and the Chuxiong Yi autonomous prefecture is steady, in accordance with the Twelfth Five-Year Plan for 2011–2015.</p> <p>The Chuxiong, Lufeng, and Wuding governments allocate adequate budgets for operation and maintenance of the facilities.</p> <p><b>Risk</b></p> <p>Insufficient funds are available to support implementation of Chuxiong, Lufeng, and Wuding urban master plans.</p>
<p><b>Outcome</b></p> <p>Urban infrastructure services and environment improved in cities of Chuxiong Municipality, Lufeng County, and Wuding County</p>	<p><b>By 2019 (baseline 2011)</b></p> <p>Area exposed to once-in-50-year flood risk reduced by 4.1 km<sup>2</sup> in Chuxiong. Once-in-20-year flood risk reduced by 4.9 km<sup>2</sup> in Lufeng and by 2.3 km<sup>2</sup> in Wuding</p> <p>Nonmotorized traffic lanes increased by 14.8 km in Chuxiong, 12.2 km in Lufeng, and 5.7 km in Wuding</p> <p>Coverage of municipal solid waste service area increased from 22.5 km<sup>2</sup> to 27.0 km<sup>2</sup> in Chuxiong, from 8.0 km<sup>2</sup> to 9.6 km<sup>2</sup> in Lufeng, and from 14.0 km<sup>2</sup> to 16.8 km<sup>2</sup> in Wuding</p> <p>More than 80% of the urban streets cleaned. (Baselines: 64% in Chuxiong, 55% in Lufeng, and 51% in Wuding)</p> <p>3,558 jobs and 306 positions provided during construction and operation, of which 20% during construction and 50% during operations are for women and, overall, 30% are for ethnic minorities and 15% are for the poor</p>	<p>Statistical yearbooks of Chuxiong Municipality, Lufeng County, and Wuding County</p> <p>Statistical yearbooks of Chuxiong Municipality, Lufeng County, and Wuding County</p> <p>Statistical yearbooks of Chuxiong Municipality, Lufeng County, and Wuding County</p> <p>Statistical yearbooks of Chuxiong Municipality, Lufeng County, and Wuding County</p> <p>Project completion and quarterly progress reports</p>	<p><b>Assumptions</b></p> <p>Government commitment and support for environmentally sustainable urban development continues.</p> <p>Project facilities are properly operated and maintained.</p> <p><b>Risk</b></p> <p>Development of local human and financial capacities to manage expanding urban infrastructure in Chuxiong, Lufeng, and Wuding is slow.</p>
<p><b>Outputs</b></p> <p>1. Chuxiong urban infrastructure and environment improved</p>	<p><b>By 2019 (baseline 2011)</b></p> <p>6.2 km of new dike and slope protection completed and operational</p> <p>Enhanced flood early warning and monitoring system installed and operational</p>	<p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p>	<p><b>Assumptions</b></p> <p>Project counterpart funding is appropriated on time.</p> <p>Untreated sewage from Fumin village is intercepted on-time.</p>

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
	<p>9.0 km of roads, 18.8 km of sewage pipeline, 19.0 km of water supply pipelines, 19.2 km of storm water pipelines, and 29 sewage interceptor facilities completed and operational</p> <p>4 solid waste transportation vehicles, 2,500 trash bins and containers, and 6 street cleaning vehicles provided and operational</p> <p>50% of those employed in landscaping, simple road cleaning, and solid waste collection work are women</p>	<p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p>	<p><b>Risk</b></p> <p>Land acquisition approvals and implementation are delayed.</p>
2. Lufeng urban infrastructure and environment improved	<p>12.2 km of dike and slope protection completed and operational</p> <p>Enhanced flood early warning and monitoring system installed and operational</p> <p>7.5 km of roads, 15.5 km of sewage pipelines, 15.9 km of water supply pipelines, 18.6 km of storm water pipelines, and 4 sewage interceptor facilities completed and operational</p> <p>Storm water detention pond with 68,135 m<sup>3</sup> storage capacity completed and in operation</p> <p>4 solid waste transportation vehicles and 10 street cleaning vehicles provided and operational</p> <p>50% of those employed in landscaping, simple road cleaning, and solid waste collection work are women</p>	<p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p>	<p><b>Assumptions</b></p> <p>Project counterpart funds are appropriated on time.</p> <p>Project funded by Water Resource Bureau is completed on time.</p> <p>Interception of untreated sewage from the existing Dabeichang, Xiaobeichang, and Shangying villages is coordinated smoothly.</p> <p><b>Risk</b></p> <p>Land acquisition approvals and implementation are delayed.</p>
3. Wuding urban infrastructure and environment improved	<p>5.2 km dike and slope protection completed and operational</p> <p>Enhanced flood early warning and monitoring system installed and operational</p> <p>9.4 km of roads, 13.4 km of sewage pipelines, 17.9 km of water supply pipelines, 20.3 km of storm water pipelines, and 10 sewage interceptor facilities completed and operational</p> <p>Storm water detention pond with 1,688 m<sup>3</sup> storage capacity completed and in operation</p> <p>3 solid waste transportation vehicles, 198 trash containers, 1 street cleaning vehicle provided, installed, and operational</p> <p>50% of those employed in landscaping, simple road cleaning, and solid waste collection work are</p>	<p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p> <p>Project completion and quarterly progress reports</p>	<p><b>Assumptions</b></p> <p>Project counterpart fund is provided on time.</p> <p>Interception of untreated sewage from the existing Daxi and Xiaoxi villages is coordinated smoothly.</p> <p><b>Risk</b></p> <p>Land acquisition approvals and implementation are delayed</p>



Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
	women		
4. Capacity and institutional strength of the executing and implementing agencies increased	Training, with 50% of attendees women, conducted on (i) project management; (ii) public financial management for project cities; (iii) solid waste management assessment, planning, and training; and (iv) road safety and transport planning assessment and training Workshops on social inclusion and equitable access to the new economy organized, with 50% of attendees women and gender analysis in the reports	Project completion report and quarterly progress reports  Project completion report and quarterly progress reports	<b>Assumption</b> Staff of relevant bureaus, project operation and maintenance entities, and public and related stakeholders participate in capacity-building training.  <b>Risk</b> Recruitment of the project implementation consultants is delayed.

Activities with Milestones	Inputs
<p><b>1. Output 1. Chuxiong urban infrastructure and environment improved</b></p> <p>1.1 Carry out detailed design and update of resettlement plans by Q1 2015 1.2 Carry out land acquisition and resettlement by Q4 2015 1.3 Complete bidding and award contract by Q3 2017 1.4 Purchase solid waste equipment by Q2 2017 1.5 Construct dike by Q2 2018 1.6 Build roads by Q2 2018 1.7 Carry out landscaping and slope protection works by Q4 2018</p> <p><b>2. Output 2. Lufeng urban infrastructure and environment improved</b></p> <p>2.1 Carry out detailed design and update of resettlement plan by Q2 2015 2.2 Carry out land acquisition and resettlement by Q4 2016 2.3 Complete bidding and award contract by Q4 2017 2.4 Purchase solid waste equipment by Q4 2016 2.5 Build dike by Q2 2017 2.6 Construct storm water detention pond by Q2 2017 2.7 Construct roads by Q2 2018 2.8 Carry out landscaping and slope protection works by Q4 2018</p> <p><b>3. Output 3. Wuding urban infrastructure and environment improved</b></p> <p>3.1 Carry out detailed design and update of REMDP by Q4 2015 3.2 Carry out land acquisition and resettlement by Q4 2015 3.3 Complete bidding and award contract by Q4 2017 3.4 Purchase solid waste equipment by Q4 2016 3.5 Construct dike by Q4 2017 3.6 Construct storm water detention pond by Q4 2017 3.7 Build roads by Q4 2018 3.8 Carry out landscaping and slope protection works by Q4 2018</p> <p><b>4. Output 4. Capacity development and institutional strengthening</b></p> <p>4.1 Recruit and mobilize project startup consultants by Q1 2014 4.2 Recruit and mobilize project implementation consultants by Q4 2014 4.3 Set up organization and arrangement by Q2 2014 4.4 Establish and refine PPMS for CPG and implementing agencies by Q4 2014 4.5 Finalize institutional coordination monitoring by Q3 2014 4.6 Implement capacity building training by Q4 2018 4.7 Implement and monitor EMP, resettlement plans, REMDP, GAP, and SAP until Q2 2019</p>	<p><b>ADB: \$150.0 million</b></p> <p><b>Chuxiong Municipal Government: \$57.2 million</b></p> <p><b>Lufeng County Government: \$81.9 million</b></p> <p><b>Wuding County Government: \$36.6 million</b></p> <p><b>Domestic Banks: \$84.7 million</b></p>

ADB = Asian Development Bank, CPG = Chuxiong Yi autonomous prefecture government, EMP = environmental management plan, FCDI = financial charges during implementation, GAP = gender action plan, GDP = gross domestic product, km = kilometer, km<sup>2</sup> = square kilometer, m<sup>2</sup> = square meter, m<sup>3</sup> = cubic meter, PPMS = project performance management system, REMDP = resettlement and ethnic minority development plan, SAP = social action plan.

Source: Asian Development Bank.

### **LIST OF LINKED DOCUMENTS**

<http://adb.org/Documents/RRPs/?id=45507-003-3>

1. Loan Agreement
2. Project Agreement
3. Sector Assessment (Summary): Multisector (irrigation, drainage, and flood protection; road transport; solid waste)
4. Project Administration Manual
5. Contribution to the ADB Results Framework
6. Development Coordination
7. Financial Analysis
8. Economic Analysis
9. Country Economic Indicators
10. Summary Poverty Reduction and Social Strategy
11. Gender Action Plan
12. Environmental Impact Assessment
13. Resettlement Plan: Chuxiong Urban Infrastructure and Environment Improvement Subproject (Chuxiong City Longchuan River Component)
14. Resettlement Plan: Chuxiong Urban Infrastructure and Environment Improvement Subproject (Chuxiong City Road Component)
15. Resettlement Plan: Lufeng Urban Infrastructure and Environment Improvement Subproject
16. Combined Resettlement and Ethnic Minority Development Plan: Wuding Urban Infrastructure and Environment Improvement Subproject
17. Risk Assessment and Risk Management Plan

### **Supplementary Document**

18. Design of Storm Water Detention Pond