

Project Administration Manual

Project Number: 46063
June 2015

People's Republic of China: Xinjiang Tacheng Border
Cities and Counties Development Project

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APPENDIX

ENVIRONMENTAL MANAGEMENT PLAN

Project Administration Manual Purpose and Process

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Xinjiang Uygur Autonomous Region Government (XUARG), the executing agency; Tacheng Prefecture Government (TPG), Tacheng City Municipal Government (TCMG), Emin County Government (ECG), Tuoli County Government (TCG), Yumin County Government (YCG), the implementing agencies; Liaota New District (LTND), Tacheng Housing and Construction Bureau (TCHCB), Tacheng Water Resource Bureau (TCWRB), Emin Housing and Construction Bureau (EHCB), Tuoli Housing and Construction Bureau (THCB), and Yumin Housing and Construction Bureau (YHCB), the project implementing units, are wholly responsible for the implementation of the ADB financed project, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by XUARG, TPG, TCMG, ECG, TCG, and YCG of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At loan negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the Loan agreement. Such agreement shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and the loan agreement, the provisions of the loan agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP) changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

CURRENCY EQUIVALENTS

(As of 15 May 2015)

Currency Unit	–	yuan (CNY)
CNY1.0000	=	\$ 0.1612
\$1.0000	=	CNY 6.201

ABBREVIATIONS

3R	-	reduce, reuse and recycle
ADB	-	Asian Development Bank
CEIA	-	consolidated environmental impact assessment
CHP	-	combined heat and power
CNY	-	Chinese Yuan
DDR	-	due diligence report
DI	-	design institute
DMF	-	design and monitoring framework
DRC	-	development and reform commission
EA	-	executing agency
FB	-	finance bureau
ECG	-	Emin County Government
EIA	-	environment impact assessment
EIRR	-	economic internal rate of return
EMDP	-	ethnic minority development plan
EMP	-	environmental management plan
EPB	-	environmental protection bureau
FIRR	-	financial internal rate of return
FMA	-	financial management assessment
FSR	-	feasibility study report
GAP	-	gender action plan
GDP	-	gross domestic product
GHG	-	greenhouse gases
GRM	-	grievance redress mechanism
HCB	-	Housing and Construction Bureau
IA	-	implementing agency
ITS	-	intelligent transportation system
LAR	-	land acquisition and resettlement
LTND	-	Liaota New District Commission
MOF	-	Ministry of Finance
WRB	-	Water Resource Bureau
MSW	-	municipal solid waste
NDRC	-	National Development and Reform Commission
NMT	-	non-motorized traffic
OD	-	origin-destination
O&M	-	operation and maintenance
PAM	-	project administration manual
PCU	-	passenger car unit
PLG	-	project leading group
PMO	-	project management office

PPMS	-	project performance monitoring system
PPTA	-	project preparatory technical assistance
PRC	-	People's Republic of China
PSA	-	poverty and social assessment
PVEC	-	present value of economic costs
RP	-	resettlement plan
SPRSS	-	summary poverty reduction and social strategy
SPS	-	Safeguard Policy Statement
TA	-	technical assistance
TCG	-	Tuoli County Government
TCMG	-	Tacheng Municipal Government
TOR	-	terms of reference
TPG	-	Tacheng Prefecture Government
WWTP	-	wastewater treatment plants
XUAR	-	Xinjiang Uygur Autonomous Region
XUARG	-	Xinjiang Uygur Autonomous Region Government
YCG	-	Yumin County Government

WEIGHTS AND MEASURES

kg	-	kilogram
km	-	kilometer
l	-	liter
m ²	-	square meter
m ³	-	cubic meter
cm	-	centimeter
mu	-	Chinese unit of measurement (1 mu = 666.67 m ²)
t	-	ton (1t = 1,000 kg)

I. PROJECT DESCRIPTION

1. By addressing urgent needs in urban infrastructures and municipal services, the project will improve the environment, social inclusiveness, and border trade capacity of Tacheng City and the county cities of Emin, Tuoli, and Yumin.

A. Rationale

2. Located in the northwest of the People's Republic of China (PRC), Xinjiang Uygur Autonomous Region (XUAR) is a border area linking the PRC to Central Asia. It covers almost one-sixth of the country's total area. In 2013, its population was about 22.65 million,¹ 60.5% of which comprises 36 ethnic minority groups.² XUAR has lagged behind in economic development and remains one of the poorest and least-developed regions in the PRC. In 2013, XUAR's per capita disposable income of urban households was CNY19,874, which was the second lowest among all the PRC provinces and autonomous regions.³ Such wide disparities prompted the Government of the PRC to launch the National Strategy for Development of the Western Region in 2000, with the aim to promote balanced economic growth and to raise the living standards in the region.⁴

3. Tacheng Prefecture is in the northwest of XUAR and shares a 480 kilometer (km)-long border with Kazakhstan. Due to its strategic geographical location along the economic corridors of the New Silk Road Economic Belt, border trade is playing an increasing role in local economic development, which is based mainly on the rich agricultural and mineral resources of the prefecture.⁵ To promote border trade development, the central government is cooperating with the regional and local authorities to build rail and road networks, upgrade key urban infrastructure and land port facilities, and support the development of small and medium-sized enterprises and the introduction of trade facilitation initiatives.⁶ These investments will provide a big opportunity for Tacheng City and neighboring counties such as Emin, Tuoli, and Yumin to become strategic economic hubs and derive the benefits from the growing regional border trade.

4. However, Tacheng Prefecture is still lagging the central areas of XUAR significantly in terms of income levels and living conditions. The disposable income at CNY16,464 (2013) is considerably below the national average of CNY24,565. A lack of investment and planning, exacerbated by a harsh natural environment and high demographic pressure, has led to outdated and precarious urban infrastructure and municipal services in the cities of Tacheng, Emin, Tuoli,

¹ About 1.65% of the population of the PRC.

² The major groups are Hui, Kazakh, Kyrgyz, Mongolian, and Uygur.

³ Disposable income is total personal income minus personal current taxes. In the PRC, disposable income is calculated separately for urban and rural citizens.

⁴ State Council of the PRC. 2000. *The National Strategy for Development of the Western Region*. Beijing. The strategy focuses on developing infrastructure, protecting the environment, and strengthening economic cooperation and trade with neighboring provinces and countries.

⁵ The New Silk Road Economic Belt is a key element of the One Belt and One Road national strategy and aims to promote greater connectivity between the PRC and the central and western parts of Eurasia. Regional Cooperation and Integration (accessible from the list of linked documents in Appendix 2).

⁶ A recent example of this is the selection of Baktu Land Port as a green corridor for agricultural products between the PRC and Kazakhstan. This pilot scheme aims to achieve faster and more efficient customs clearance and inspection of agricultural trade, and it is later to be replicated to other carefully selected land ports along the border.

and Yumin.⁷ This situation is constraining not only socioeconomic development but also wider regional economic integration across the prefecture and border trade.

5. The urban road network in the project cities is inadequate for the planned population growth and the resulting increase in commercial activities. The lack of roads increasingly makes the urban areas difficult to access, causing serious economic and safety concerns for drivers, nonmotorized transport users, and pedestrians. Related to the poor quality of roads, access to basic utilities is also low—on average, 16% of households in the project cities are not connected to clean piped water, and 19% are not connected to the sewerage system. The current coverage rate of district heating in Tacheng City is only 65%, and a significant share of the population still relies on small coal-fired boilers and family heating stoves, resulting in substantial energy inefficiency and air pollution. Municipal solid waste (MSW) management capacity is limited, sorting facilities are lacking, and collection systems are extremely basic, which also causes considerable environmental pollution. Tacheng City is crossed by the Kalanguer River, which carries snowmelt and storm flows from the mountains in the north. Throughout the city limits, the river remains unrestrained and some areas experience seasonal flooding that causes significant economic losses to its inhabitants. A considerable share of these urban populations resides in neighborhoods connected by unpaved alleys. These areas lack access to basic urban services and safety features such as street lighting, making living conditions difficult, especially in the harsh winters. In addition, all project cities and counties are also home to large numbers of ethnic minorities, whose members experience considerable difficulties in adapting to the changing urban, economic, and social conditions.

6. In 2012, Tacheng City and the counties of Emin, Tuoli, and Yumin approved their respective master plans (2012–2030), which target the cities to become livable and environmentally sustainable, prioritizing the development of municipal infrastructure and services that would raise the living standards of its residents and support their effective integration into the regional economy. The proposed project takes a multisector and integrated approach to urban development, meeting the urgent and prioritized needs identified in the master plans—river rehabilitation; expansion of public and green spaces; improvements to the urban road network and traffic management, water supply and sewerage services, district heating service, solid waste collection system; and upgrading of equipment and services at the border land port.⁸ The proposed project will contribute indirectly to poverty reduction by enhancing the access of urban and peri-urban residents to upgraded municipal services and an improved urban environment. The project will also help promote regional cooperation and integration (RCI). This will be achieved by enhancing the level of preparedness of the target cities and counties to participate and benefit from the growing regional border trade and for their effective integration as key hubs on the economic corridors of the New Silk Road Economic Belt.⁹

⁷ Given greater rural–urban migration, the urban population in Tacheng Prefecture has grown to 75% (2012) of the total population. Population growth prospects are considerable: Tacheng: 2014 (170,000), 2030 (320,000); Emin: 2014 (95,000), 2030 (150,000); Tuoli: 2014 (42,000), 2030 (90,000); and Yumin: 2014 (50,000), 2030 (90,000).

⁸ In a demand–supply analysis undertaken during project preparatory technical assistance, it was concluded that the existing and planned water and wastewater treatment plants have adequate capacity to accommodate the increased demands arising from the proposed project components.

⁹ Given their geographical proximity to corridors 1 and 2 of the Central Asia Regional Economic Cooperation Program, the project cities stand to benefit also from increasing investments and trade along these corridors.

7. **Strategic fit.** The project supports a key goal of Strategy 2020 of the Asian Development Bank (ADB)—making cities livable and sustainable through the creation of a cleaner and healthier environment.¹⁰ It also contributes to greater physical connectivity as set under ADB's RCI strategy. The project is aligned with ADB's strategic pillars of the country partnership strategy, i.e., to support inclusive and environmentally sustainable growth by promoting growth-oriented and resource-efficient urbanization.¹¹ It also supports the main thrust of ADB's Urban Operational Plan by promoting green, competitive, and inclusive cities. Similarly, the project will be in line with the Government of the PRC's upcoming Thirteenth Five-Year Plan because it supports balanced urbanization in developing cities that are livable, resource conserving, and inclusive.¹² By supporting greater connectivity with Kazakhstan, the project is fully in line with the PRC's New Silk Road Economic Belt initiative, the creation of economic corridors, and enhancement of RCI. It also supports XUAR's Thirteenth Five-Year Plan (2016–2020), which gives increasing priority to the development of border areas of the region that are crucial in boosting regional trade. In addition, the project is aligned with the PRC's National Plan on New Urbanization (2014–2020) by accelerating the development of small and medium-sized cities and by promoting harmonious and coordinated development between cities and surrounding small towns.¹³

8. **Continuity of development initiatives and incorporation of lessons.** The project design incorporates lessons from previous ADB-financed urban development projects in the PRC, particularly the four ongoing Xinjiang projects.¹⁴ For road construction, it avails of valuable experience from the Xinjiang Urban Transport and Environmental Improvement Project.¹⁵ Practical lessons from the Xinjiang Altay Urban Infrastructure and Environment Improvement Project will apply to the establishment and maintenance of solid waste management systems.¹⁶ Following reduce, reuse, recycle (3R) principles, the project will play a demonstration role for similar cities with basic systems of collection and sorting of MSW.

9. **Special features.** The project includes many special features that are based on good practices implemented under ADB projects in more developed provinces of the PRC. Many of these features have potential for replication in other areas of XUAR or even other less developed regions of the PRC with similar conditions. In addition, these special features reinforce the integrated nature of the project and along with capacity building, aim to strengthen the sustainability of the project. One such feature is integrated flood risk management—the project will produce structural measures (riverbank stabilization with enhancement of green spaces, roadside stormwater retention, and infiltration) and nonstructural measures (flood forecasting and early flood warning, emergency response, and raising public awareness of flood risk) that will allow Tacheng City to develop an integrated management approach to urban flood risks. Adoption of best practices for MSW management is another feature—the project will pilot MSW management based

¹⁰ The project also supports ADB. 2014. *Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific*. Manila.

¹¹ ADB. 2012. *Country Partnership Strategy: People's Republic of China, 2011–2015*. Manila.

¹² ADB. 2013. *Urban Operational Plan, 2012–2020*. Manila.

¹³ The National Plan on New Urbanization (2014–2020) selected Tacheng City as a key border city for development.

¹⁴ ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Xinjiang Municipal Infrastructure and Environmental Improvement Project*. Manila; ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Xinjiang Urban Transport and Environmental Improvement Project*. Manila; and ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Xinjiang Altay Urban Infrastructure and Environment Improvement Project*. Manila.

¹⁵ ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for Xinjiang Urban Transport and Environmental Improvement Project*. Manila.

¹⁶ ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for Xinjiang Altay Urban Infrastructure and Environment Improvement Project*. Manila.

on 3R principles in selected communities by introducing integrated sorted-at-source collection systems, community participation, and optimization of organic and nonorganic waste disposal. Finally, border trade capacity will be stepped up as this is a critical supplementary feature—in addition to resourcing Baktu Land Port with goods and equipment, the project will also build capacity for border trade development in all project cities and counties by introducing advanced and innovative policymaking, and training on trade facilitation and logistics.

B. Impact and Outcome

10. The impact will be improved urban environment, living conditions, and border trade capacity in the project border cities and counties. The outcome will be enhanced delivery and efficiency of municipal services in the project border cities and counties.

C. Outputs

11. The project will take a multisector and integrated approach to urban development where outdated infrastructure and municipal services are the critical constraints to economic development, improved environment, and living conditions. The project has five outputs.

12. **Improved urban infrastructure and municipal services in Tacheng City.** This will improve the urban infrastructure and municipal services in existing and new urban areas, including (i) rehabilitation of 15.2 kilometer (km) of Kalanguer River and expansion of public and green spaces by 37 hectares, (ii) construction of 29.5 km of urban roads (for a people-centered urban transport system with emphasis on developing pedestrian and/or bicycle and public transport), (iii) construction of 47.7 km of water supply piping network and 48.8 km of sanitary sewer piping network, (iv) construction of 40.6 km of primary hot water heating pipe network and 21 hot water heat exchange stations, (v) rehabilitation of 14.1 km of urban alleys, (vi) introduction of integrated MSW management for sorting and collection in selected communities, (vii) upgrade of city operation and maintenance (O&M) equipment, and (viii) upgrade of equipment for Baktu Land Port.

13. **Improved urban infrastructure and municipal services in Emin County.** This will improve the urban infrastructure and municipal services in existing and new urban areas, including (i) rehabilitation of a 3.2 km urban road and construction of five urban roads with a combined length of 10.1 km, (ii) installation of a 7.7 km water supply piping network, (iii) installation of a 10 km sanitary sewer piping network, and (iv) upgraded maintenance equipment.

14. **Improved urban infrastructure and municipal services in Tuoli County.** This will improve the urban infrastructure around the existing urban areas by building an outer ring road of 14.1 km, and by upgrading city maintenance equipment.¹⁷

15. **Improved urban infrastructure and municipal services in Yumin County.** This will improve the urban infrastructure and municipal services in existing and new urban areas, including (i) rehabilitation of three urban roads with a total length of 4.9 km and construction of three new urban roads with a total length of 9.7 km for people-centered urban transport system with emphasis on developing pedestrian, bicycle, and public transport; and (ii) upgraded maintenance and MSW equipment.

16. **Improved and inclusive capacity development and project management.** This output will strengthen capacity and institutions for the project's management and operation. It will provide

¹⁷ Includes street-cleaning vehicles, landscaping equipment, and MSW collection and transport trucks.

expert support and advice on ADB policies and procedures for project implementation such as contract management, financial management, safeguard and social monitoring, and capacity-development activities. The output will also include three specific features to strengthen the capacity of the executing and implementing agencies for (i) MSW management; (ii) border trade and logistics development; and (iii) people-centered urban transport planning, traffic management, and safety.

D. Project Components

No	Description	Type/ Classification	Unit	Length/ Capacity	Remark
1. Tacheng City Infrastructures, Municipal Services, Heating, MSW, Alley Rehab, Baktu Port Upgrade and River Rehabilitation					
A	Roads				
1	Third Ring Road	Urban Major	m	3,867	
2	Fifth Ring Road	Urban Major	m	2,678	
3	Tiyuguan Xi Road	Urban Major	m	1,866	
4	Chanye Yi Street	Urban Major	m	2,200	
5	Chanye Nan San Road	Urban Major	m	1,800	
6	Second Ring Road	Secondary	m	3,463	
7	Tianyuan Nan Road	Secondary	m	2,032	
8	Xixing Nan Road	Secondary	m	2,032	
9	Heshan Nan Road	Secondary	m	2,032	
10	Fourth Ring Road	Secondary	m	2,184	
11	Chanye Si Street	Secondary	m	3,016	
12	Hemei Road	Urban Major	m	1,656	
13	Hemu Nan Road	Secondary	m	620	
	subtotal =			29,447	
B	Baktu Equipment				
	MSW and Street Cleaning Equipment		set	1	
	Security Monitoring System		set	1	
C	Alley Rehabilitation	Branch	m	14,057	
D	Municipal Service Facilities				
	Water Supply Pipe Network	PE & DI pipe	m	45,443	
	Sanitary Sewer Pipe Network	HDPE & RC	m	48,791	
	Primary Heating Piping Network	Steel	m	37,210	
	Heat Exchange Stations		ea	21	
E	Kalanggur River Rehabilitation		m	15,240	
	4 Bridges of 60 m span and 12 to 34 m wide				
F	Municipal Solid Waste Management (MSW stations, toilets, garbage container, MSW equipment, etc.)		LS	1	
2. Emin Town Infrastructures and Municipal Services					
A	Emin Road and Bridge				
1	Arxiate Road - Rehabilitation	Urban Major	m	3,224	
	Arxiate Road - New	Urban Major	m	664	New
2	Wenhua Road	Secondary	m	931	
3	Guihua Wu Road1	Urban Major	m	1,285	
4	Guihua Qi Road	Branch	m	1,962	
5	Guihua Jiu Road	Secondary	m	2,065	
	subtotal =			10,131	
B	Water Supply Pipe Network	PE & DI	m	8,260	
C	Sanitary Sewer Pipe Network	RC & HDPE	m	9,865	
D	Maintenance Equipment		LS	1	
3. Tuoli Town Infrastructures and Municipal Services					
1	Outer Ring Road	Urban Major	m	14,090	
2	Maintenance Equipment		LS	1	
4. Yumin Town Infrastructures and Municipal Services					
A	Road and Bridge:				
1	Guihua Yi Road	Secondary	m	1,476	
2	Guihua Er Road	Urban Major	m	1,876	
3	Longzhen Road (Rehab)	Secondary	m	2,338	
4	Yujinxiang Road (Rehab)	Secondary	m	418	
	Yujinxiang Road (Rehab)	Secondary	m	953	
	Bus stations at Bilingual Kindergarten (in-lane bus stop -1)				
5	Honghua Road (Rehab)	Branch	m	1,168	
	Bus stations at County Hospital (in-lane bus stop -1)				
6	Donghuan Road	Secondary	m	1,505	
	subtotal =			9,734	
C	Water Supply		m		Note 1
D	Sanitary Sewer		m		Note 1
E	Urban Cleaning Equipment, MSW Container & Trash Bin		set	1	
5. Capacity Development and Institutional Strengthening					
A	Project implementation support				
B	Institutional Capacity Development				

DI = ductile iron, HDPE = high density polyethylene, MSW = municipal solid waste, PE = polyethylene, RC = reinforced concrete

Source: project preparatory technical assistance consultants

Notes: 1. The water supply and sewer pipe will be installed separately by using domestic funding.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

Indicative Activities	2015												Responsible Agency(s)
	1	2	3	4	5	6	7	8	9	10	11	12	
Establish project implementation arrangements													EA, PMO, IAs
Advance contracting													EA, PMO, IAs, TC
Retroactive financing													EA, PMO, IAs, TC
EIA's approval													Xinjiang EPD
FSRs approval													Xinjiang DRC
RPs and EMDP approved by ADB													ADB
RPs and EMDP endorsed by EA/IAs													EA, IAs
Prepare CUAR and PEOR													EA, IAs, PMO
Review and approval of CUAR and PEOR													MOF, NDRC
State council approval for loan negotiation													State Council
Loan negotiation													ADB, MOF, Xinjiang FD, EA
ADB board approval													ADB
Loan signing													ADB, MOF
Government legal opinion provided													MOF, NDRC, EA
Loan effectiveness													ADB, MOF

ADB = Asian Development Bank, CUAR = capital utilization application report, DRC = Development and Reform Commission, EA = executing agency, EPD = Environmental Protection Department, FD = Financial Department, MOF = Ministry of Finance, NDRC = National Development and Reform Commission, PEOR = project evaluation opinion report, PMO = project management office, RP = resettlement plan, TC = tendering company, TPG = Tacheng Prefecture Government.

Notes:

1. Provision for advance contracting – refer to RRP.
2. Provision for retroactive financing is limited to 20% of the loan amount and may occur not more than 12 months before the loan effectiveness.
3. Board approval, loan signing, legal option, loan effectiveness - dates to be confirmed later.
4. The project readiness covers activities from establishing PMO/IAs at the project preparation to the loan effectiveness.

B. Overall Project Implementation Plan

[illegible]

[illegible]

III. PROJECT MANAGEMENT ARRANGEMENT

A. Project Implementation Organization—Roles and Responsibilities

Project Implementation Organizations	Management Roles and Responsibilities
XUAR Finance Bureau	<ul style="list-style-type: none"> • Provide overall project guidance and coordination • Manage the project imprest account • Submit withdrawal applications to Asian Development Bank
XUAR PMO	<ul style="list-style-type: none"> • Provide overall advisory on project implementation • Provide inter-agency coordination at XUAR government • Submit all project related documentation to ADB
Executing agency	
Xinjiang Uygur Autonomous Region Government	<p>Responsible for project coordination with Tacheng Prefecture Government and four project city/county governments of Tacheng, Emin, Tuoli and Yumin, and liaise with ADB financial management and administration</p> <ul style="list-style-type: none"> • Communicate and coordinate with ADB for project management and implementation • Report project implementation progress and compliance monitoring to ADB • Submit required annual audit reports and financial statements of the project account of the TCMG, ECG, TCG, YCG to ADB
Implementation agency for overall project	
Tacheng Prefecture Government	Responsible for project coordination with four project city/county governments of Tacheng, Emin, Tuoli and Yumin,
Tacheng Prefecture Project Leading Group	<ul style="list-style-type: none"> • Headed by the deputy commissioner of TPG and consists of the director/deputy director of TPDR, TPHCB, TPFB, TPEPB, TPSLB, TCMG, ECG, TCG, YCG, etc. • Provide policy guidance and project supervision • Facilitate interagency coordination and cooperation
Tacheng Prefecture Project Management Office (TPPMO) (supported by Tendering Company and Project Implementation Consulting Firm)	<p>Responsible for entire project implementation</p> <ul style="list-style-type: none"> • In charge of all day-to-day management work during project preparation and implementation period • Coordinate with all involved parties and government agencies for the project implementation • Engage the design institute to carry out FSR, preliminary design and construction drawing development • Engage the tendering company to facilitate the project procurement process • Engage project implementation consulting service • Engage external resettlement monitoring service • Provide construction supervision and inspection and to review and verify the construction progress and the payment claims • Provide quality assurance and quality control for the project implementation construction, check and review the construction supervision works by the supervision company • Coordinate procurement process; on behalf of the implementation agencies and PIUs, review and submit bidding documents, bid evaluation reports, and other necessary documentations to ADB for necessary approval • Submit required annual financial statements of the project account of the TCMG, ECG, TCG, YCG to XUARG • Submit withdrawal applications to XUAR Finance Bureau
Implementing agency for Tacheng subproject	
Tacheng City Municipal Government	Responsible for project implementation of subproject components in Tacheng City including Liaota New District and Baktu Land Port. Responsible for finance and administration, coordination, technical and procurement matters,

Project Implementation Organizations	Management Roles and Responsibilities
Tacheng City Municipal Government Project Leading Group and IA PMO (under DRC)	<p>monitoring and evaluation, and safeguard compliance</p> <p>(i) Management and administration, inter-agency coordination, technical and procurement matters, monitoring and evaluation, and safeguard compliance</p> <ul style="list-style-type: none"> • Headed by the deputy mayor and consists of the director/deputy directors of DRC, finance bureau, HCB, WRB, EPB, LRB, Planning Bureau, Liaota New District Commission, Civil Affair Bureau and other social safeguard agencies, • Coordinate and oversee project preparation and implementation • Provide policy guidance during implementation • Facilitate interagency coordination and cooperation <p>(ii) Implement infrastructures of roads, bridges, water, drainage, heating in Liaota New District and equipment at Baktu Land Port</p> <ul style="list-style-type: none"> • Engage contractors and procure equipment with assistance of the consultants and tendering agency • Engage construction supervision company to monitor construction • Coordinate with environmental monitoring station to carry environmental monitoring • Administer and monitor contractors and suppliers • Supervise construction and quality control • Prepare and submit construction progress report to PMO
Tacheng City Water Resource Bureau (supported by Procurement Agent and Project Implementation Consulting Firm)	<p>Implement Kalanguer River Rehabilitation</p> <ul style="list-style-type: none"> • Engage contractors and procure equipment with assistance of the consultants and tendering agency • Engage construction supervision company to monitor construction • Coordinate with environmental monitoring station to carry environmental monitoring • Administer and monitor contractors and suppliers • Supervise construction and quality control • Prepare and submit construction progress report to PMO
Tacheng City Housing and Construction Bureau (supported by Procurement Agent and Project Implementation Consulting Firm)	<p>Implement MSW management, Alley Rehabilitation and Heating pipe construction located in the existing urban area</p> <ul style="list-style-type: none"> • Engage contractors and procure equipment with assistance of the consultants and tendering agency • Engage construction supervision company to monitor construction • Coordinate with environmental monitoring station to carry environmental monitoring • Administer and monitor contractors and suppliers • Supervise construction and quality control • Prepare and submit construction progress report to PMO
Implementing agency for Emin Subproject	
Emin County Government	<p>Responsible for implementing roads, bridges and municipal services, including finance and administration, coordination, technical and procurement matters, monitoring and evaluation, and safeguard compliance</p>
Emin County Government Project Leading Group and IA PMO (under DRC)	<p>Responsible for Emin roads, bridges, and municipal services; Management and administration, inter-agency coordination, technical review and procurement, monitoring and evaluation, and safeguard compliance.</p> <ul style="list-style-type: none"> • Headed by the deputy mayor and consists of the director/deputy director of DRC, FB, EPB, HCB, LRB, and safeguard related agencies. • Coordinate and oversee project preparation and implementation • Provide policy guidance during implementation • Facilitate interagency coordination and cooperation
Emin Housing and Construction Bureau (supported by Procurement Agent and Project Implementation Consulting Firm)	<p>Implement infrastructures of roads, bridges, water, drainage in Emin town</p> <ul style="list-style-type: none"> • Engage contractors and procure equipment with assistance of the consultants and tendering agency • Engage construction supervision company to monitor construction • Coordinate with environmental monitoring station to carry environmental monitoring

Project Implementation Organizations		Management Roles and Responsibilities
		<ul style="list-style-type: none"> • Administer and monitor contractors and suppliers • Supervise construction and quality control • Prepare and submit construction progress report to PMO
Implementing agency for Tuoli Subproject		
Tuoli County Government		Responsible for implementing roads and bridges, including for finance and administration, coordination, technical and procurement matters, monitoring and evaluation, and safeguard compliance
Tuoli County Government Project Leading Group and IA PMO (under DRC)		Responsible for Tuoli road implementation; management and administration, inter-agency coordination, technical and procurement, monitoring and evaluation, and safeguard compliance. <ul style="list-style-type: none"> • Headed by the deputy mayor and consists of the director/deputy director of DRC, FB, EPB, HCB, LRB, and safeguard related agencies. • Coordinate and oversee project preparation and implementation • Provide policy guidance during implementation • Facilitate interagency coordination and cooperation
Project implementing units		
Tuoli Housing and Construction Bureau (supported by Procurement Agent and Project Implementation Consulting Firm)		Implement infrastructures of roads in Emin town <ul style="list-style-type: none"> • Engage contractors and procure equipment with assistance of the consultants and tendering agency • Engage construction supervision company to monitor construction • Coordinate with environmental monitoring station to carry environmental monitoring • Administer and monitor contractors and suppliers • Supervise construction and quality control • Prepare and submit construction progress report to PMO
Implementing agency for Yumin Subproject		
Yumin County Government		Responsible for implementing roads and bridges, including finance and administration, coordination, technical and procurement matters, monitoring and evaluation, and safeguard compliance
Yumin County Government Project Leading Group and IA PMO (under DRC)		Responsible for Yumin road implementation; management and administration, inter-agency coordination, technical and procurement, monitoring and evaluation, and safeguard compliance. <ul style="list-style-type: none"> • Headed by the deputy mayor and consists of the director/deputy director of DRC, FB, EPB, HCB, LRB, and safeguard related agencies. • Coordinate and oversee project preparation and implementation • Provide policy guidance during implementation • Facilitate interagency coordination and cooperation
Tuoli Housing and Construction Bureau (supported by Procurement Agent and Project Implementation Consulting Firm)		Implement infrastructures of roads in Emin town <ul style="list-style-type: none"> • Engage contractors and procure equipment with assistance of the consultants and tendering agency • Engage construction supervision company to monitor construction • Coordinate with environmental monitoring station to carry environmental monitoring • Administer and monitor contractors and suppliers • Supervise construction and quality control • Prepare and submit construction progress report to PMO
Asian Development Bank		Responsible for administering ADB-funded components of the project

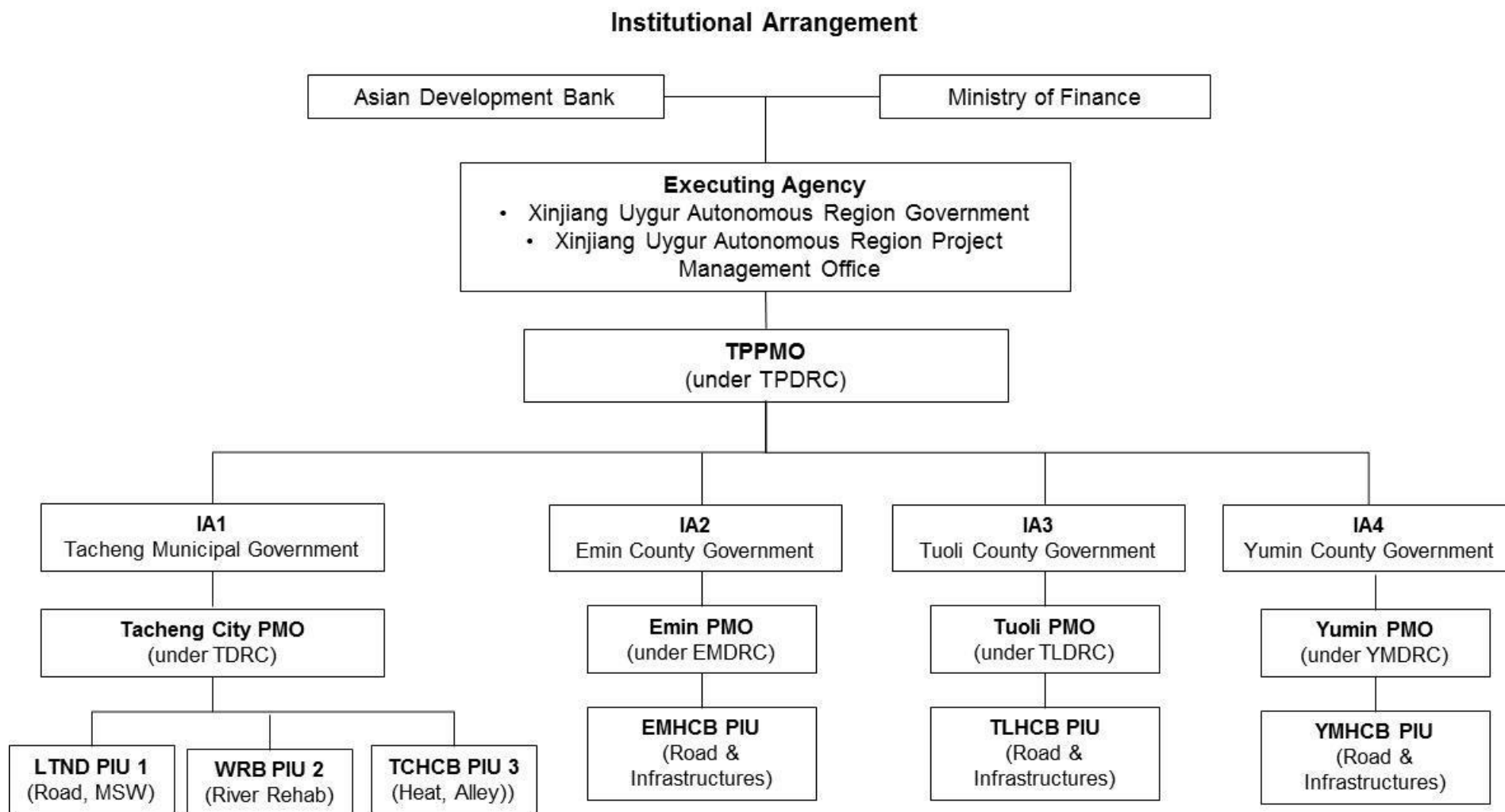
ADB = Asian Development Bank, DRC = Development and Reform, ECG = Emin County Government, EPB = Environmental Protection Bureau, HCB = Housing and Construction Bureau, ISWM = integrated solid waste management, LRB = Land Resources Bureau, MSW = municipal solid waste, PIU = project implementing units, PMO = project management office, TCMG = Tacheng City Municipal Government, TCG = Tuoli County Government, TPG = Tacheng Prefecture Group, WRB = Water Resources Bureau, XUARG = Xinjiang Uygur Autonomous Region Government, YCG = Yumin County Government.

B. Key Persons Involved in Implementation

XUAR Government		
XUAR Finance Bureau	Officer's Name:	Liu, Xiaoxing
	Position:	Director, Central Asian Division
	Telephone(Fax):	
	Fax:	
	Email Address:	
XUAR PMO	Office Address:	Urumqi, PRC
	Officer's Name:	Zhang, Hong
	Position:	Director, Xinjiang PMO
	Telephone:	
	Fax:	
	Email Address:	
	Office Address:	Urumqi, PRC
Executing Agency		
Tacheng Prefecture Government	Officer's Name:	Zhu, Xuyong
	Position:	Deputy Commissioner, TPC
	Telephone(Fax):	
	Email Address:	
	Office Address:	Tacheng, PRC
Tacheng Prefecture PMO	Officer's Name:	Ma, Xuewu
	Position:	Director, PMO
	Telephone:	0901-6228599
	Email Address:	
	Office Address:	Tacheng DRC Tacheng, Xinjiang, PRC
Implementing Agencies		
Tacheng Municipal Government	Officer's Name:	Zhao, Wenming
	Position:	Vice Mayor
	Telephone:	0901-6223695
	Office Address:	Tacheng, PRC
Emin County Government	Officer's Name:	Cao, Chunshan
	Position:	Vice County Commissioner
	Telephone:	0901-3351699
	Office Address:	Emin, PRC
Tuoli County Government	Officer's Name:	Li, Genghu
	Position:	Vice County Commissioner
	Telephone:	0901-368-1730
	Office Address:	Tuoli, PRC
Yumin County Government	Officer's Name:	Liang, Jingguo
	Position:	Vice County Commissioner
	Telephone:	0901-6527656
	Office Address:	Yumin, PRC
Project Implementing Units		
Tacheng Water Resource Bureau	Officer's Name:	Zheng, Bing
	Position:	Deputy Director
	Telephone:	0901-6298034
	Office Address:	Tacheng, PRC
Tacheng Housing and Construction Bureau	Officer's Name:	Chen Wenxin
	Position:	Director
	Telephone:	0901-6226158
	Email Address:	
Emin Housing and Construction Bureau	Office Address:	Tacheng, PRC
	Officer's Name:	Zhang, Xinqiang
	Position:	Director
	Telephone:	0901-3342088
	Email Address:	
	Office Address:	Emin, PRC

Tuoli Housing and Construction Bureau	Officer's Name:	Zhao, Xiaomin
	Position:	Deputy Director
	Telephone:	0901-3688840
	Email Address	
	Office Address:	Tuoli, PRC
Yumin Housing and Construction Bureau	Officer's Name:	Li, Jindian
	Position:	Director
	Telephone:	0901-6521419
	Email Address	
	Office Address:	Yumin, PRC
Asian Development Bank		
East Asia Regional Department Urban and Social Sectors Division	Staff Name:	Sangay Penjor
	Position:	Director
	Telephone No.:	+63 2 632 6584
	Email Address:	spenjor@adb.org
	Staff Name:	Antonio Ressano-Garcia
	Position:	Senior Urban Development Specialist
	Telephone No.:	+63 2 632 5661
	Email Address:	aressano@adb.org
DRC = Development and Reform Commission, PMO = project management office, XUARG = Xinjiang Uygur Autonomous Region Government		

C. Project Organization Structure



EMDRC = Emin Development and Reform Commission, EMEPB = Emin Environmental Protection Bureau, EMFB = Emin Finance Bureau, EMHCB = Emin Housing and Construction Bureau, EMP = Environmental Management Plan, EMSLB = Emin State Land Bureau, FD = Financial Department, LTND = Liaota New District, MOF = Ministry of Finance, MSW = municipal solid waste, PIU = project implementation unit, PMO = project management office, RP = resettlement plan, TDRC = Tacheng Development and Reform Commission, TEPB = Tacheng Environmental Protection Bureau, TFB = Tacheng Finance Bureau, THCB = Tacheng Housing and Construction Bureau, TLDRC = Tuoli Development and Reform Commission, TLEPB = Tuoli Environmental Protection Bureau, TLFB = Tuoli Finance Bureau, TLHCB = Tuoli Housing and Construction Bureau, TSLB = Tuoli State Land Bureau, TMG = Tacheng Municipal Government, TPDRC = Tacheng Prefecture Department and Reform Commission, TSLB = Tacheng State Land Bureau, YMDRC = Yumin Development and Reform Commission, YMEPB = Yumin Environmental Protection Bureau, YMFB = Yumin Finance Bureau, YMHCB = Yumin Housing and Construction Bureau, YMSLB = Yumin State Land Bureau.

IV. COST AND FINANCING

1. The project is estimated to cost \$302.87 million (Table 1). The government has requested a loan of \$150 million from ADB's ordinary capital resources to help finance the project. The loan will have a 26-year term, including a grace period of 5 years, an annual interest rate determined in accordance with ADB's London interbank offered rate-based lending facility plus a spread of 0.5% and maturity premium of 0.1%, a commitment charge of 0.15% per year, and such other terms and conditions to be set forth in the draft loan and project agreement.

2. The government has requested that repayment will follow the straight line repayment on principal option, and that the repayment dates will be set at loan negotiations. The repayment schedule is provided in Appendix 1. Based on the above loan terms and these repayment option and dates, the average loan maturity is 15.75 years and the maturity premium payable to ADB is 0.1% per annum.

Table 1: Project Investment Plan

Item	Amount ^a		Share of Total (%)
	(CNY million)	(\$ million)	
A. Base Cost ^b			
1. Tacheng subproject	1,158.3	193.05	63.7
2. Emin subproject	194.0	32.34	10.7
3. Tuoli subproject	130.3	21.71	7.2
4. Yumin subproject	90.6	15.10	5.0
5. Capacity development and institutional strengthening	10.2	1.70	0.6
Subtotal (A)	1,583.4	263.90	87.1
B. Contingencies ^c	188.7	31.45	10.4
C. Financing charges during implementation ^d	45.1	7.52	2.5
Total (A+B+C)	1,817.2	302.87	100.0

^a Includes taxes and duties of about \$6.23 million to be financed from government and ADB loan resources. The principles followed in determining the amount of taxes and duties to be financed by ADB are (i) the amount being within reasonable country thresholds, (ii) the amount representing 2.4% of base cost and not an excessive share of the project investment plan, (iii) taxes and duties applying only to ADB-financed expenditures, and (iv) the financing of the taxes and duties being relevant to the success of the project.

^b In mid-2014 prices. Of the base cost, 65% will finance civil works, 4% goods, and 0.7% consulting services.

^c Physical contingencies computed at 6% for civil works; and 6% for field research and development, training, surveys, and studies. Price contingencies computed at 4.16% on foreign exchange costs and 9.37% on local currency costs.

^d 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 0.5%. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

Note: Numbers may not add precisely due to rounding.

Source: Asian Development Bank estimates.

3. The loan will finance 49.53% of the project cost, including works, goods, and consulting services and training. The loan will also finance taxes and duties for eligible ADB-financed expenditures, and transportation and insurance costs. The Government has provided ADB with (i) the reasons for its decision to borrow under ADB's LIBOR-based lending facility on the basis of these terms and conditions, and (ii) an undertaking that these choices were its own independent decision and not made in reliance on any communication or advice from ADB. The local governments (IAs) will provide counterpart funding equivalent to \$152.87 million, which will finance 50.47% of the project cost.

4. The financing plan is in Table 2. The PRC is the borrower of the loan. The PRC will relend the entire loan to XUARG, which will onlend the loan proceeds to TPG on the same

terms and conditions as those of the ADB loan, and TPG will relend the loan proceeds to the IAs, which are Tacheng City, Emin, Tuoli and Yumin county government. As the end-borrower, the local governments will assume foreign exchange and interest rate variation risks for the ADB loan. The PRC, XUARG, TPG and local governments have assured ADB that counterpart funding will be provided in a timely manner, including any additional counterpart funding required for any shortfall of funds or cost overruns. The fund flow mechanism chart is shown in Section G.

5. **Maturity-based lending terms.** The mission advised that following maturity premiums are applicable to Libor-based loans to sovereign borrowers. The maturity premium is 0.10% per annum for loans with an average loan maturity that is more than 13 years and up to 16 years, and 0.20% per annum for loans with an average loan maturity that is more than 16 years and up to 19 years. There is no maturity premium for loans with an average loan maturity of 13 years or less. The average loan maturity shall not exceed 19 years.

Table 2: Financing Plan

Item	Amount		Share of Total (%)
	(CNY million)	(\$ million)	
Asian Development Bank	900.00	150.00	49.53
Tacheng Municipal Government	676.40	112.73	37.22
Emin County Government	129.65	21.61	7.13
Tuoli County Government	63.88	10.65	3.52
Yumin County Government	47.31	7.88	2.60
Total	1,817.24	302.87	100.00

Note: Numbers may not add precisely due to rounding.

Source: Asian Development Bank estimates.

B. Allocation and Withdrawal of Loan Proceeds

CATEGORY				ADB FINANCING	
No.	Item	Amount Allocated for ADB		Percentage and Basis for Withdrawal	
		Category	Subcategory		
1	Civil Works*	129,700,000		75%	of total expenditure
	<i>a. Tacheng</i>		<i>94,000,000</i>	<i>75%</i>	<i>of total expenditure</i>
	<i>b. Emin</i>		<i>13,900,000</i>	<i>70%</i>	<i>of total expenditure</i>
	<i>c. Tuoli</i>		<i>13,900,000</i>	<i>78%</i>	<i>of total expenditure</i>
	<i>d. Yumin</i>		<i>7,900,000</i>	<i>70%</i>	<i>of total expenditure</i>
2	Goods (mechanical and equipment)	11,100,000		100%	of total expenditure
3	Consulting Services and Capacity Development	1,700,000		100%	of total expenditure
4	Interest and Commitment Charge	7,520,000		100%	of amount due on ADB loan
	Total	150,020,000			

* Includes cost for Environment and Social Mitigation (\$1,400,000).

Source: Asian Development Bank.

C. Detailed Cost Estimates by Financier (in \$ million)

(\$ million)											
Item	ADB		Tacheng M. Gov.		Emin County Gov.		Tuoli County Gov.		Yumin County Gov.		Total Cost
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	
A. Investment Costs											
1 Civil Works	129.73	74.5	31.06	17.8	5.84	3.4	4.05	2.3	3.36	1.9	174.04
<i>Tacheng Subproject</i>	93.97	75.2	31.06	24.8							125.02
<i>Emin Subproject</i>	13.90	70.4			5.84	29.6					19.73
<i>Tuoli Subproject</i>	13.94	77.5					4.05	22.5			18.00
<i>Yumin Subproject</i>	7.92	70.2							3.36	29.8	11.29
2 Goods (Mechanical and Equipment)	11.05	100.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	11.05
<i>Tacheng Subproject</i>	9.30	100.0	0.00	0.0							9.30
<i>Emin Subproject</i>	0.18	100.0			0.00	0.0					0.18
<i>Tuoli Subproject</i>	0.14	100.0					0.00	0.0			0.14
<i>Yumin Subproject</i>	1.43	100.0							0.00	0.0	1.43
3 Land Acquisition and Resettlement	0.00	0.0	47.98	75.7	11.13	17.6	2.65	4.2	1.60	2.5	63.36
<i>Tacheng Subproject</i>	0.00	0.0	47.98	100.0							47.98
<i>Emin Subproject</i>	0.00	0.0			11.13	100.0					11.13
<i>Tuoli Subproject</i>	0.00	0.0					2.65	100.0			2.65
<i>Yumin Subproject</i>	0.00	0.0							1.60	100.0	1.60
4 Consulting Services and Capacity Development	1.70	100.0									1.70
5 Survey, Design and Management	0.00	0.0	9.73	76.4	1.29	10.1	0.93	7.3	0.79	6.2	12.74
6 Operation Capital	0.00	0.0	1.01	99.2	0.01	0.8	0.00	0.0	0.00	0.0	1.02
Subtotal (A)	142.48	54.0	89.78	34.0	18.26	6.9	7.63	2.9	5.75	2.2	263.90
B. Recurrent Costs											
1 Salaries	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
2 Accommodation	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
3 Equipment Operation and Maintenance	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Subtotal (B)	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
Total Base Cost	142.48	54.0	89.78	34.0	18.26	6.9	7.63	2.9	5.75	2.2	263.90
C. Contingencies	0.00	0.0	22.95	73.0	3.35	10.7	3.02	9.6	2.14	6.8	31.45
1 Physical	0.00	0.0	9.44	73.0	1.38	10.7	1.24	9.6	0.88	6.8	12.94
2 Price	0.00	0.0	13.51	73.0	1.97	10.7	1.78	9.6	1.26	6.8	18.52
D. Financing Charges During Implementation	7.52	100.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	7.52
1 Interest During Implementation	6.89	100.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	6.89
2 Commitment Charges	0.63	100.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.63
Total Project Cost (A+B+C+D)	150.00		112.73		21.61		10.65		7.88		302.88
% Total Project Cost	49.53		37.22		7.14		3.52		2.60		100.00

See Table 1 Project Investment Plan for notes.

Source: Asian Development Bank

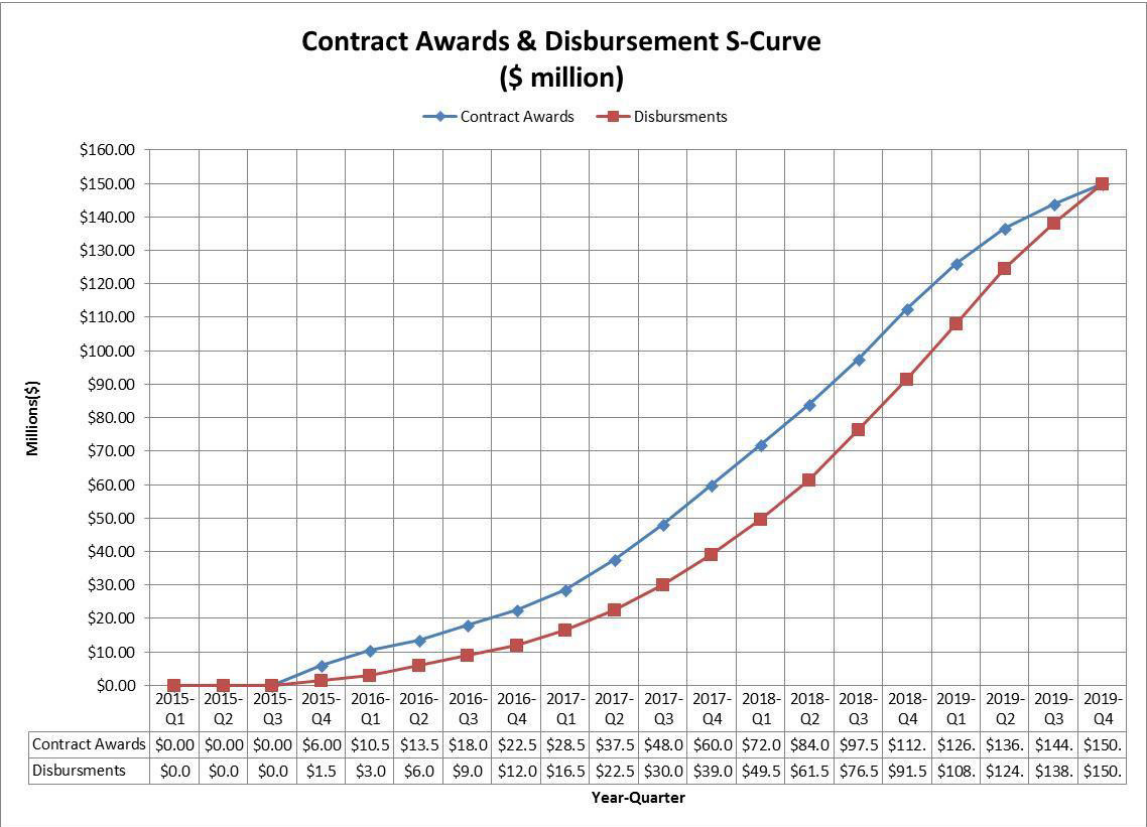
E. Detailed Cost Estimate by Year (\$ million)

Item		Total	2015 (Year 1)	2016 (Year 2)	2017 (Year 3)	2018 (Year 4)	2019 (Year 5)
A.	Investment Costs						
1	Civil Works	172.17	8.61	17.22	43.04	60.26	43.04
	<i>Tacheng Subproject</i>	123.84	6.19	12.38	30.96	43.35	30.96
	<i>Emin Subproject</i>	19.34	0.97	1.93	4.84	6.77	4.84
	<i>Tuoli Subproject</i>	17.87	0.89	1.79	4.47	6.25	4.47
	<i>Yumin Subproject</i>	11.12	0.56	1.11	2.78	3.89	2.78
2	Mechanical and Equipment	11.05	0.55	1.11	2.76	3.87	2.76
	<i>Tacheng Subproject</i>	9.30	0.46	0.93	2.32	3.25	2.32
	<i>Emin Subproject</i>	0.18	0.01	0.02	0.05	0.06	0.05
	<i>Tuoli Subproject</i>	0.14	0.01	0.01	0.04	0.05	0.04
	<i>Yumin Subproject</i>	1.43	0.07	0.14	0.36	0.50	0.36
3	Environment and Social Mitigation	1.86	0.09	0.19	0.47	0.65	0.47
	<i>Tacheng Subproject</i>	1.18	0.06	0.12	0.30	0.41	0.30
	<i>Emin Subproject</i>	0.38	0.02	0.04	0.10	0.13	0.10
	<i>Tuoli Subproject</i>	0.13	0.01	0.01	0.03	0.04	0.03
	<i>Yumin Subproject</i>	0.17	0.01	0.02	0.04	0.06	0.04
4	Land Acquisition and Resettlement	63.36	3.17	6.34	15.84	22.17	15.84
	<i>Tacheng Subproject</i>	47.98	2.40	4.80	12.00	16.79	12.00
	<i>Emin Subproject</i>	11.13	0.56	1.11	2.78	3.89	2.78
	<i>Tuoli Subproject</i>	2.65	0.13	0.26	0.66	0.93	0.66
	<i>Yumin Subproject</i>	1.60	0.08	0.16	0.40	0.56	0.40
5	Consultants	1.70	0.09	0.17	0.43	0.60	0.43
6	Survey, Design and Management	12.74	0.64	1.27	3.18	4.46	3.18
7	Operation Capital	1.02	0.05	0.10	0.25	0.36	0.25
	Subtotal (A)	263.90	13.19	26.39	65.97	92.36	65.97
B.	Recurrent Costs						
1	Salaries	-	-	-	-	-	-
2	Accommodation	-	-	-	-	-	-
3	Equipment Operation and Maintenance	-	-	-	-	-	-
	Subtotal (B)	-	-	-	-	-	-
	Total Base Cost	263.90	13.19	26.39	65.97	92.36	65.97
C.	Contingencies	31.45	1.57	3.15	7.86	11.01	7.86
1	Physical	12.94	0.65	1.29	3.23	4.53	3.23
2	Price	18.52	0.93	1.85	4.63	6.48	4.63
D.	Financing Charges During Implementation	7.52	0.38	0.75	1.88	2.63	1.88
1	Interest during construction	6.89	0.34	0.69	1.72	2.41	1.72
2	commitment charges	0.63	0.03	0.06	0.16	0.22	0.16
	Total Project Cost (A+B+C+D)	302.87	15.14	30.29	75.72	106.01	75.72
	% Total Project Cost	100.00	5.00	10.00	25.00	35.00	25.00

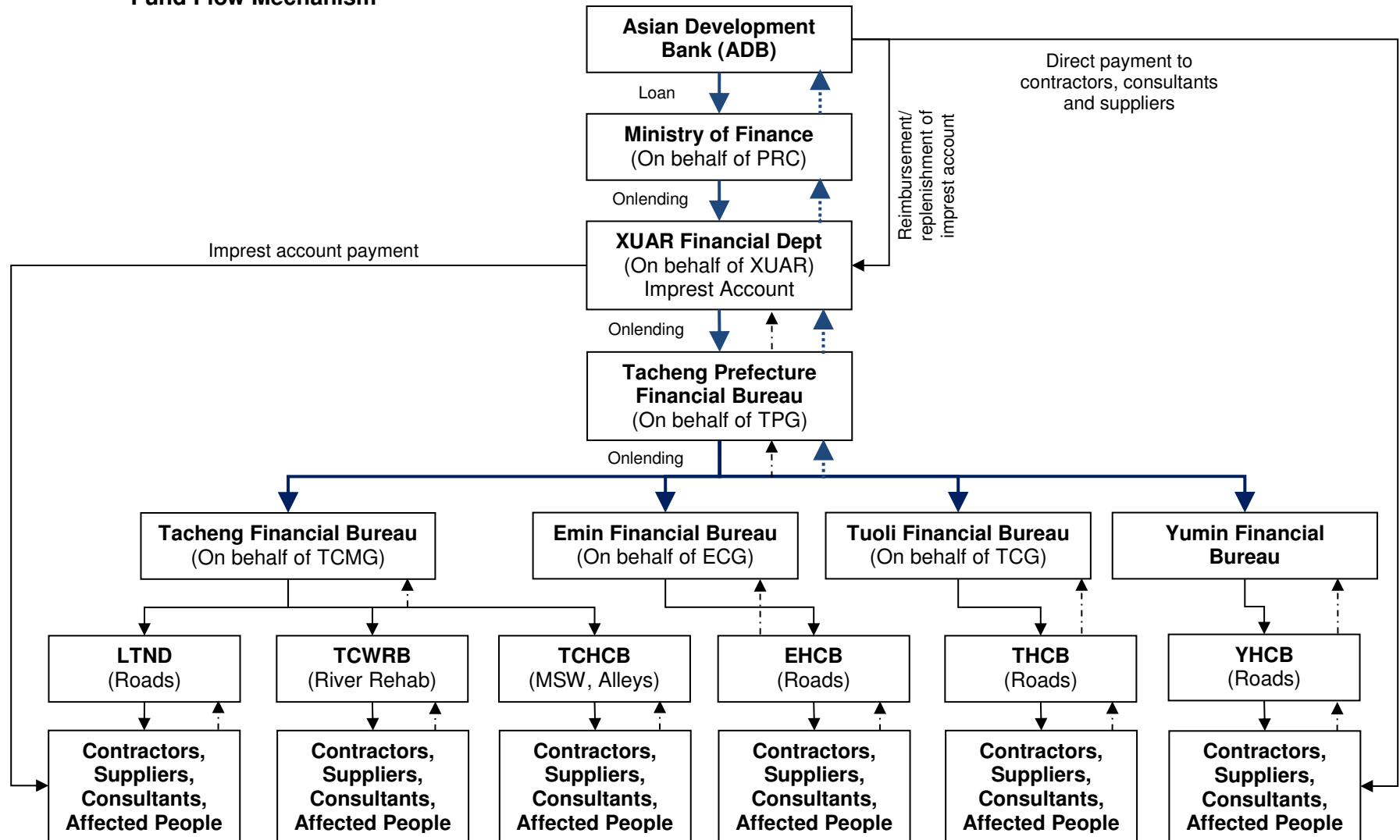
See Table 1 Project Investment Plan for notes.

Source: Asian Development Bank.

F. Contract and Disbursement S-Curve



Fund Flow Mechanism



ECG = Emin County Government, EHCB = Emin Housing and Construction Bureau, LTND = Liaota New District, MSW = Municipal Solid Waste, TCH CB = Tacheng Housing and Construction Bureau, TCMG = Tacheng City Municipal Govt, TCWRB = Tacheng Water Recourse Bureau, TCG = Tuoli County Government, TPG = Tacheng Prefecture Government, YCG = Yumin County Govt, YHCB = Yumin Housing and Construction Bureau, XUARG = Xinjiang Uygur Autonomous Region Government

→ Lending/onlending ←..... Loan repayment → Disbursement/reimbursement ←..... Disbursement application

V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

1. The financial management assessment (FMA) was carried out in accordance with ADB's Guidelines for the *Financial Management and Analysis of Projects*,¹⁸ and *Financial Due Diligence: a Methodology Note*,¹⁹ to assess the financial management capacity of the executing agency: Xinjiang Uygur Autonomous Region Government (XUARG); five implementing agencies (IAs): Tacheng Prefecture Government (TPG), Emin County Government (ECG), Tacheng City Municipal Government (TCMG), Tuoli County Government (TCG), and Yumin County Government (YCG) as well as the six project implementing units: Emin Housing and Construction Bureau (EHCB), Liaota New District (LTND), Tacheng Housing and Construction Bureau (TCHCB), Tacheng Water Resource Bureau (TCWRB), Tuoli Housing and Construction Bureau (THCB), and Yumin Housing and Construction Bureau (YHCB). The FMA includes funds-flow arrangements, staffing, accounting policies and procedures, internal and external auditing arrangements, reporting and monitoring, and financial information systems. The assessment concluded all IAs and project implementation units (PIUs) are experienced with domestic funded construction project, but inexperienced in managing ADB projects; hence, the project capacity development component will provide comprehensive assistance on ADB policies and procedures, including procurement and disbursement. The overall financial management risk-rating of the project is "moderate". The identified risks in financial management will be closely monitored during project implementation. The assessment indicated that (i) there are established accounting and financial management policies and procedures in the People's Republic of China (PRC), which are strictly followed by the IAs; and (ii) they have sound accounting and financial management capability and are experienced in managing large domestic projects. However, the IAs and PIUs have very limited experience in implementing foreign-funded projects, and the managers and financial personnel have limited knowledge and experience of ADB policies and procedures.

2. It was agreed that the IAs and PIUs will strengthen their financial management capability to manage the project, including (i) setting up clear institutional arrangements and strengthen coordination mechanism; (ii) completing staff recruitment to fill identified positions; (iii) developing policies and procedures for managing foreign exchange and interest rate risks; and (iv) undertaking more training, particularly on ADB policy and procedures and internal auditing system.

B. Disbursement

3. The loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.²⁰ Project staff are encouraged to avail of online training on disbursement policies and procedures to help ensure efficient disbursement and fiduciary control.²¹

4. The implementing agencies will be responsible for all disbursement arrangements for each of the subprojects, including (i) preparing disbursement projections, (ii) requesting

¹⁸ ADB. 2005. *Financial Management and Analysis of Projects*. Manila.

¹⁹ ADB. 2009. *Financial Due Diligence: A Methodology Note*. Manila.

²⁰ <http://www.adb.org/documents/loan-disbursement-handbook>.

²¹ http://wpqr4.adb.org/disbursement_elearning.

budgetary allocations for counterpart funds, (iii) collecting supporting documents, and (iv) preparing and sending withdrawal applications to ADB.

5. Direct payment procedure will generally be used for large civil works, equipment, and consulting service contracts. Reimbursement procedures will also be used as appropriate when the government initially funds ADB eligible expenditures from its own resources.

6. To facilitate project implementation and funds flow, XUAR Finance Bureau (XFB) on behalf of XUAR Government (XPG) will, upon loan effectiveness, establish the imprest account at a commercial bank acceptable to ADB. Expenditures not using the imprest account may use other disbursement procedures, such as direct payment (to the supplier or contractor), commitment, and reimbursement.

7. The imprest account is to be used exclusively for ADB's share of eligible expenditures. The currency of imprest account is the US dollar. The XPG, through XFB, who established the imprest account in its name is accountable and responsible for proper use of advances to the imprest account.²² The government may request for initial and additional advances to the imprest account based on 6 months estimated expenditures to be financed through the imprest account. The imprest account will be established, managed, and liquidated in accordance with ADB's Loan Disbursement Handbook (2015, as amended from time to time) and detailed arrangements agreed by the government and ADB. The handbook describes (i) which supporting documents should be submitted to ADB, and (ii) which should be retained by the government for liquidation and replenishment of an imprest account.

8. To expedite funds flow and simplify documentation process, the statement of expenditures (SOE) procedure will be used for liquidation and replenishment of imprest account and reimbursement of eligible expenditures not exceeding \$200,000 per individual payment. Payments in excess of the ceiling of the SOE procedure will be reimbursed, liquidated, or replenished based on full supporting documentation process. SOE records should be maintained and made readily available for review by ADB's disbursement and review mission or upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.²³

9. The minimum value per withdrawal application is \$100,000 equivalent. Individual payments below this amount should be paid from the imprest account or by the executing agency (or the implementing agency) and subsequently claimed to ADB through reimbursement, unless otherwise accepted by ADB.

10. For the counterpart funds, the IAs will allocate the designated funding for the project as specified in the project agreement. Counterpart funds from the government will be disbursed and liquidated by PIUs to contractors and service providers. The disbursement will follow this process: (i) project implementing agreements will be mutually signed between each PIU and respective city government; (ii) project implementing agreements will become effective; (iii) according to the progress of the contract, PIUs will submit disbursement request to the

²² The bank charges in the operation of the imprest account may be financed from the loan proceeds.

²³ Checklist for SOE procedures available in Chapter 9 and formats in Appendix 10B of the Loan Disbursement Handbook (<http://www.adb.org/sites/default/files/institutional-document/33606/files/loan-disbursement-handbook.pdf>)

project management office of the respective city governments; and (iv) once approved, counterpart funds will be disbursed from finance bureau of the respective city governments.

C. Accounting

11. The IAs will maintain, or cause to be maintained, separate books and records by funding source for all expenditures incurred on the project. Consolidated project financial statements will be prepared annually in accordance with the government's accounting laws and regulations, which are consistent with international accounting principles and practices.²⁴

D. Auditing and Public Disclosure

12. The XPG will cause the detailed consolidated project financial statements to be audited in accordance with International Standards on Auditing and the Government Auditing Standards of the PRC (where these are consistent with International Standards on Auditing), by an auditor acceptable to ADB. The audited project financial statement will be submitted in the English language to ADB within 6 months of the end of the financial year by the executing agency.

13. The annual audit report for the project will include an audit management letter,²⁵ and auditor's opinions which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan and grant proceeds were used only for the purposes of the project or not; (iii) the level of compliance for each financial covenant contained in the legal agreements for the project; (iv) use of the imprest fund procedure; and (v) use of the SOE procedure certifying to the eligibility of those expenditures claimed under SOE procedures, and proper use of the SOE and imprest procedures in accordance with ADB's Loan Disbursement Handbook (2015, as amended from time to time) and the project documents.

14. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

15. The government has been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements. ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

16. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).²⁶

²⁴ Applicable laws, regulations, and guidelines include:

- (i) The Accounting Law of the PRC (2000).
- (ii) State-owned Construction Enterprise Accounting Control Regulations.
- (iii) Capital Construction Financial Control Regulations.
- (iv) Accounting Methods for Projects Financed by the World Bank.

²⁵ A management letter means formal communications from the auditor to the client management in accordance with the International Standard on Auditing 265 (communicating deficiencies in internal control to those charged with governance and management), which is not required to be provided separately as it is equivalent to the Audit Findings and Recommendations prepared by the project auditor and submitted to ADB.

²⁶ <http://www.adb.org/site/disclosure/public-communications-policy/pcp-handbook>.

After review, ADB will disclose the 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. The Audit Management Letter will not be disclosed.

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting and Retroactive Financing

1. All advance contracting and retroactive financing will be undertaken in conformity with ADB's Procurement Guidelines (2015, as amended from time to time)²⁷ and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).²⁸ The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. It was explained to the borrower: the executing agency, implementing agencies, and project implementing units (PIUs) that (i) advance contracting includes the advertisement, bidding documents, (not prequalification), evaluation of bids and up to the recommendation of contracts award, and that all steps will require ADB's no objection; (ii) approval of advance contracting and retroactive financing does not commit ADB to finance the project; and (iii) where advance contracting is approved, ADB's approval must be sought for the draft prequalification and bidding documents before they are issued.

2. To expedite project implementation, the government requested ADB to approve advance contracting, which includes the recruitment of consultants and procurement of civil works; and retroactive financing of eligible expenditures for consulting services, civil works, and equipment procurement.

3. **Advance contracting.** Advance contracting will include (i) prequalification of contractors, tendering, and bid evaluation for civil works contract packages; (ii) awarding of contracts; and (iii) recruitment of consultants. The issuance of invitations to bid, the draft prequalification, and bidding documents under advance procurement action will be subject to ADB approval.

4. **Retroactive financing.** The government was informed that as a general rule, retroactive financing is permitted only if (i) it is specifically agreed by ADB and the Borrower; (ii) the goods, works, services, and consultants for which it is requested are procured in accordance with ADB's Procurement Guidelines (2015, as amended from time to time) and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time); (iii) the amount to be retroactively financed does not exceed 20% of the loan amount; (iv) the due diligence on the proposed contracts for advance contracting and retroactive financing on engineering, environmental, financial, social and other safeguard requirements has completed to the satisfactory of the project preparation requirements; and (v) the expenditures must have been incurred before the loan effectiveness of the relevant loan but, generally, no earlier than 12 months before signing of the Loan Agreement. In either instance, detailed assessments (due diligence) on each retroactive financing proposal must demonstrate that (i) the expenditures incurred are genuine, reasonable, and material to getting the project off the ground; and (ii) they were incurred for proper reasons, in a transparent manner over a reasonable period of time. The government has been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the project.

²⁷ <http://www.adb.org/documents/procurement-guidelines>.

²⁸ <http://www.adb.org/documents/guidelines-use-consultants-asian-development-bank-and-its-borrowers>.

B. Procurement of Goods, Works, and Consulting Services

5. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2015, as amended from time to time). International competitive bidding (ICB) will be used for civil works contracts estimated to cost \$40 million and above. National competitive bidding (NCB) will be used for civil works contracts estimated to cost more than \$100,000 equivalent to below \$40 million. For goods and equipment, ICB will be used for values exceeding \$3 million, while NCB will be used for goods and equipment for more than \$100,000 to below \$3 million equivalent. For NCB, the first draft English language of the procurement documents (prequalification, bidding documents, and draft contract) should be submitted for ADB approval regardless of the estimated contract amount. Subsequent procurements are subject to post review. All ICB contracts are subject to prior review. Prior review and approval of ADB of the procurement documents (prequalification, bidding, contract) is required.

6. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines is in Section C. Since the project is located in a remote area of the PRC particular attention will be paid to ensure that a satisfactory number of bidders participate in each competitive bidding.

7. All consultants financed by ADB will be recruited according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The terms of reference for project implementation consulting service and start-up consulting service are detailed in Section D. An estimated 121 person-months (16 international, 105 national) of consulting services are required to (i) facilitate project management and implementation, (ii) provide capacity building and institutional strengthening, and (iii) required external monitoring.

C. Procurement Plan

Basic Data

Project Name: Xinjiang Tacheng Border Cities and Counties Development Project	
Project Number: 46063	Approval Number:
Country: People's Republic of China	Executing Agency: Xinjiang Uygur Autonomous Region Government
Loan Amount: \$150.0 million	
ADB Financing: \$150 million	
Non-ADB Financing:	
Date of First Procurement Plan: (loan approval date)	Date of this Procurement Plan: May 2015

1. Process Thresholds, Review and 18-Month Procurement Plan

a. Procurement and Consulting Methods and Thresholds

8. Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works	
Method	Threshold
International Competitive Bidding (ICB) for Works	\$40 million or more
International Competitive Bidding for Goods	\$3 million or more
National Competitive Bidding (NCB) for Works	More than \$100,000 to less than \$40 million
National Competitive Bidding for Goods	More than \$100,000 to less than \$3 million
Shopping for Works	\$100,000 and below
Shopping for Goods	\$100,000 and below

Consulting Services	
Method	Comments
Quality and Cost Based Selection (QCBS) Individual Consultant Selection (ICS)	Quality and Cost Ratio = 80:20

b. Goods and Works Contracts Estimated to Cost \$1 Million or More

9. The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

Goods and works contracts estimated to cost more than \$1.0 million

Package No	General Description	Estimated Value	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement (Quarter/Year)
Tacheng Subproject						
<u>Civil Work</u>						
CTC01	Second Ring Road & Hemu Nan Road	\$8,364,251	NCB (AC&RF)	Prior	1S1E	Q3/2015
CTC02	Hemei Road & Tianyuan Nan Road	\$7,186,134	NCB	Post	1S1E	Q2/2016
CTC03	Changye Yi Street & Heshan Nan Road	\$9,031,675	NCB	Post	1S1E	Q3/2016
CTC04	Xixing Nan Road, Chanye Si Street & Chanye Nan San Road	\$12,106,380	NCB	Prior	1S1E	Q3/2017
CTC05	Third Ring Road & Fifth Ring Road	\$15,105,887	NCB	Prior	1S1E	Q3/2018
CTC06	Fourth Ring Road & Tiuguan Xi Road	\$6,122,469	NCB	Post	1S1E	Q4/2018
CTC07	Tacheng Alley Rehabilitation	\$2,848,317	NCB	Post	1S1E	Q4/2015
CTC08	Water Supply Pipe Lines on Existing Roads	\$3,603,093	NCB	Post	1S1E	Q3/2016
CTC09	Sanitary Sewer Pipe Line on Existing Roads	\$5,081,898	NCB	Post	1S1E	Q3/2016
CTC10	Primary Heating Pipe Line on New Roads - Phase I	\$6,817,433	NCB	Post	1S1E	Q4/2015
CTC11	Primary Heating Pipe Line - Phase II (Liaota)	\$8,714,181	NCB	Post	1S1E	Q4/2018
CTC12	Primary Heating Pipe Line - Phase II (Tacheng)	\$5,203,330	NCB	Post	1S1E	Q1/2019
CTC13	River Rehabilitation	\$18,111,229	NCB	Prior	1S1E	Q4/2015
CTC14	Embankment Vegetation & Trees	\$6,219,126	NCB	Post	1S1E	Q3/2016
CTC15	4 Bridges over Kalanggur River	\$7,028,437	NCB	Post	1S1E	Q1/2016
ETC02	Street Lighting	\$3,690,134	ICB	Prior	1S1E	Q4/2015
ETC04	Heating Exchange Stations & Equipment - Phase I	\$2,343,291	NCB	Post	1S1E	Q4/2015
ETC05	Heating Exchange Stations & Equipment - Phase II	\$3,716,672	ICB	Prior	1S1E	Q4/2017
ETC06	MSW and Urban Maintenance Equipment	\$2,379,600	NCB	Post	1S1E	Q3/2016
Emin Subproject						
<u>Civil Work</u>						
CEM01	Arxiate Road, Wenhua Road, Guihua Wu Road	\$14,339,601	NCB (AC&RF)	Prior	1S1E	Q3/2015
CEM02	Guihua Qi Road & Guihua Jiu Road	\$5,359,851	NCB (AC&RF)	Prior	1S1E	Q4/2015
Tuoli Subproject						
<u>Civil Work</u>						
CTL01	Outer Ring Road(K0+00 to K5+200)	\$6,639,621	NCB(AC&RF)	Prior	1S1E	Q4/2015
CTL02	Outer Ring Road(K5+200 to K10+500)	\$6,767,306	NCB	Post	1S1E	Q3/2016
CTL03	Outer Ring Road(K10+500 to K14+090)	\$4,584,135	NCB	Post	1S1E	Q3/2016
Yumin Subproject						
<u>Civil Work</u>						
CYM01	Donghuan Road and Guihua Yi Road & Longzhen Road	\$6,194,292	NCB	Prior	1S1E	Q4/2015
CYM02	Guihua Er Road, Yujinxian Road & Honghua Road	\$5,074,890	NCB	Post	1S1E	Q4/2017
<u>Equipment Supply & Installation</u>						
EYM01	Maintenance Equipment	\$1,449,646	NCB	Post	1S1E	Q1/2016

AC = advance contracting, ICB = international competitive bidding, NCB = national competitive bidding, RF = retroactive financing

c. Consulting Services Contracts Estimated to Cost \$100,000 or More

10. The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

Package No.	General Description	Estimated Value	Procurement Method	Review (Prior/Post)	Advertisement Date (quarter/year)	Type of Proposal
CS1	Consulting Services and Capacity Development	\$1,623,200	QCBS (AC)	Prior	Q2 2015	FTP

AC = advance contracting, FTP = full technical proposal, QCBS = quality- and cost-based selection

Source: Asian Development Bank.

d. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

11. The following table groups smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

Package No.	General Description	Estimated Value	Procurement Method	Review (Prior/Post)	Bidding Procedure	Advertisement (quarter/year)
ETC01	Baktu Port Equipment	\$676,691	NCB	Post	1S1E	Q1/2016
ETC03	Flood Monitoring Equipment	\$190,933	NCB	Post	1S1E	Q3/2016
EEM01	Maintenance Equipment	\$186,695	NCB	Post	1S1E	Q3/2016
ETL01	Maintenance Equipment	\$141,667	NCB	Post	1S1E	Q3/2016

AC = advance contracting, ICB = international competitive bidding, NCB = national competitive bidding, RF = retroactive financing

Source: Asian Development Bank

Package No.	General Description	Estimated Value	Procurement Method	Review (Prior/Post)	Advertisement (quarter/year)	Type of Proposal
CS2	Start Up Support	\$76,800	ICS (AC&RF)	Prior	Q2 2015	

AC = advance contracting, BTP = biodata technical proposal, ICS = individual consultant selection, RF = retroactive financing

Source: Asian Development Bank.

2. Indicative List of Packages Required Under the Project

12. The following table provides an indicative list of goods, works and consulting services contracts over the life of the project.

Summary of Contract Packages

Package No.	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Review (prior/post)	Bidding Procedure
	Works		0	ICB	Prior	1S1E
	Works	\$40,897,616	5	NCB	Prior	1S1E
	Works	\$129,605,923	17	NCB	Post	1S1E
	Goods	\$7,406,806	2	ICB	Prior	1S1E
	Goods	\$7,368,523	7	NCB	Post	1S1E

AC = advance contracting, ICB = international competitive bidding, NCB = national competitive bidding, RF = retroactive financing

Source: Asian Development Bank

3. Consultant's Inputs and Terms of Reference²⁹

13. **Introduction.** The project management consulting service and capacity development service will be recruited in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). Tacheng Prefecture project management office (PMO) on behalf of Tacheng Prefecture Government will be responsible for engaging consultants through QCBS (quality- and cost-based selection) for the project management and capacity development consulting service.³⁰ Under the project, the consulting services will be provided in two areas:

- (i) **Project implementation management.** Project management and capacity development will provide project management assistance to the executing agency and implementing agencies, and PIUs to comply with ADB procedural requirements including: (a) project management and contract management; (b) project performance management system (PPMS); (c) procurement of contracts; (d) disbursement and contract management; (e) construction planning, supervision, and monitoring; (f) reporting requirements; (g) safeguard management and monitoring; and (h) corporate planning and financial management.
- (ii) **Capacity development.** The consultants will also provide capacity development support to the executing agency and/or implementing agencies and PIUs with (a) the project specified capacity development on the innovative technologies and special features designed for the project, provide technical and implementation support so that the designed special features can be materialized; (b) operation and maintenance (O&M) of project components; and (c) training, organization of study visits, and workshops.

²⁹ The terms of reference (TOR) was prepared by ADB and the executing agency. The PPTA consultants were not involved in the preparation of the TOR.

³⁰ <http://www.adb.org/documents/guidelines-use-consultants-asian-development-bank-and-its-borrowers>.

14. **Consulting Services for Project Management and Capacity Development**

15. Project management and capacity development consulting service will be engaged by QCBS method with a standard quality: cost ratio of 80:20 with full technical proposal procedure. The outline terms of reference are in the following paragraphs. The consulting firm will assist the executing agency, implementing agencies, and PIUs in the following tasks:

(a) Project Management and Technical Audit

- (i) Set up institutional framework, operational procedure, document filing system, and work plan to guide and facilitate the project implementation.
- (ii) Set up project performance management system (PPMS) in accordance with ADB's policy requirements, including establishing baseline and operation mechanism for data collection, analysis, and reporting.
- (iii) Upgrade and improve the project management information system to (a) ensure efficient and effective information sharing and coordination about the project management (e.g., procurement, disbursement, construction, safeguard and compliance); and (b) monitoring the project's design and monitoring framework, through the use of the PPMS.
- (iv) Conduct design, technical, environmental and social as well as gender/social action plans' review and audit, and provide expert comments on engineering detailed design in accordance with the required design codes and standards. Assist PIUs/PMO with implementation of resettlement and gender/social action plans and internal monitoring/reporting.
- (v) Assist the executing agency and/or implementing agencies and PIU to establish quality assurance and quality control system, and help the PIUs to implement and monitor the quality assurance and/or quality control program to ensure all works are completed in accordance with contract document requirements.
- (vi) Assist the executing agency and/or implementing agencies and PIUs to establish construction safety program, and help PIUs to implement and monitor the safety program and to ensure the safety for all construction activities.
- (vii) Conduct routine site visits and provide technical inputs to construction planning, supervision, and monitoring for quality control of the subproject construction.
- (viii) Provide expert inputs, review, and certification for contract variations and prepare necessary documentations (e.g., a due diligence report) in accordance with the government and ADB requirements.
- (ix) Review procurement documentations including technical specifications, bill of quantity, bidding documents, bid evaluation procedures, and contract negotiations.
- (x) Conduct contract management during the project implementation to include monitoring construction progress, preparing semiannual and annual progress report, reviewing and certifying the contractors' claims for payments, coordinating project implementation among contractors and various stakeholders, and coordinating daily operational tasks.

(b) Financial Management

- (i) Establish an efficient and effective financial management system for the project implementation (e.g., fund disbursement management, withdrawal application review, use of loan proceeds, and counterpart funds) in accordance with ADB policy and procedural requirements.

- (ii) Assist the PMO and PIUs in preparing financial statements and consolidated financial statements according to relevant project financial covenants, and make necessary arrangement with auditing units to supervise the financial management of PIUs.
- (iii) Provide training and assistance in preparing disbursement applications, review and certify applications, assist in disbursement processing and reimbursement procedures.

(c) Support for Compliance with Asian Development Bank Safeguard Requirements and other Social Aspects

- (i) Review and update the environmental management plan (EMP), resettlement plans, and, if required, the EMDP, social development action plan (SDAP), and gender action plan (GAP).
- (ii) Support the PIUs in contracting and managing local environmental monitoring stations (EMS) for the conduct of periodic environment impact monitoring in compliance with the approved monitoring plan defined in the updated EMP.
- (iii) Support the engagement of the external monitor to conduct semi-annual review of the implementation of the resettlement plans and EMDP issues.
- (iv) Help Tacheng Prefecture project management office (TPPMO), and PIUs establish management supervision mechanisms for implementation, monitoring, and reporting of the project safeguards issues based on the relevant ADB documentation (i.e., EMP, resettlement plans, and EMDP) as well as the GAP, and SDAP, and provide support for their implementation.
- (v) Help TPPMO and PIUs ensure implementation of the RPs, EMDP, EMP, GAP and SDAP requirements by conducting necessary workshops and focus groups meetings.
- (vi) Conduct compliance monitoring of safeguards issues, assist the PIUs to formulate corrective actions where necessary, and help the TPPMO to prepare safeguards and social development section in the semi-annual progress report and relevant safeguards monitoring reports (i.e., annual environment monitoring report, and semi-annual resettlement monitoring report).
- (vii) Assist in establishing and managing grievance redress mechanism (GRM), in accordance with EMP, RPs, and EMDP including assistance to the PIUs to establish city-level project public complaint units, and to provide training for project public complaint members and GRM access points.
- (viii) Assist TPPMO and PIUs, and other relevant agencies to develop reporting formats and establish mechanisms to prepare and submit the environment and social safeguards-related reports specified in the loan and project agreements.

(d) Institutional Strengthening and Reporting

- (i) Collect all necessary information, edit, draft, and submit the reports on time required under loan and project covenants with quality acceptable to the executing agency and ADB.
- (ii) Organize and provide training on the skills necessary for construction supervision, project management, implementation of GAP, SDAP, and safeguards plans (EMP, resettlement plans, and EMDP) for ADB requirements.
- (iii) Discuss with the executing agency and implementing agencies to finalize a training plan, organize appropriate training according to the plan; and design an evaluation

questionnaire to gauge the usefulness of the training/capacity building design and performance of the trainers.

- (iv) Coordinate and prepare study tours on (a) advanced MSW management systems and practices; (b) good practices in road safety; (c) urban transport planning and management; and (d) border trade development and trade logistic development.

(e) Capacity Building Support

- (i) **Urban transport and road safety.** Assist the executing agency and/or implementing agencies and PIUs to introduce and implement the concept of people-centered urban transportation system, with emphasis on promoting pedestrian and bicycle traffic, public transportation including bus priority lane implementation, urban parking management, low carbon urban transport, to improve the urban road safety by conducting road safety audit, development urban road safety program consisting of 3E components (engineering, education, and enforcement).
- (ii) **Municipal solid waste management.** Assist the executing agency and/or implementing agencies and PIUs to introduce reduce, reuse, and recycle based municipal solid waste management system to (a) reduce, reuse, and recycle municipal solid waste, (b) help the PIUs to implement the proposed integrated solid waste management components, (c) develop public awareness program and coordinate to implement the program to raise the public awareness of promoting MSW 3Rs; (d) provide technical support for the component implementation, develop and implement training, study tours, workshops, and seminars on advanced MSW and management method.
- (iii) **Border trade development and improvement.** Assist the executing agency and/or implementing agencies and PIUs to develop border trade development strategy including business and production development to promote border trade with the neighboring countries, and the logistic development strategy in consideration of the location and local conditions. Evaluate the existing border trade facilities at Baktu Port and develop border trade facility improvement plan to facility the border trade development.

(f) Scope of Service for Start-up Specialist

16. In consideration of the weak project implementation capacity for ADB and other international institutional funded projects, and in order to assist EA/IAs to plan and prepare the project implementation in early stage of the implementation, especially for the advanced contracting and retroactive financing packages, a start-up consulting service package has been developed to provide assistance in procurement, land acquisition and resettlement. The details scope of the services for the specialists are summarized in the followings:

17. **Procurement and contract management** (national 5 person-months). The national procurement and contract management specialist shall have a minimum of 10 years of experience in procurement and contract management in urban infrastructure development and municipal service projects. The procurement and contract management specialist will be responsible to provide technical and management supports for bidding document review, procurement assistance, contract bid review and evaluation, and other procurement related tasks. The specific tasks may include:

- (i) Provide assistance in preparing and processing ADB project implementation including project management, contract management, social and environmental safeguard, financial management, and other project management tasks related to ADB project processing requirements.
- (ii) Assist the EA and/or IAs to carry out procurement on civil work, equipment purchase and installation, consulting services, and other contracts in accordance with the PRC and ADB policies and procedure requirements.
- (iii) Provide technical support in design review, bill of quantities, and bidding document review, technical specification review, and other procurement documents review. Provide bidding and procurement process assistance; coordinate with bidding company and other involved agencies, provide assistance in bids review and bid evaluation, bid evaluation report preparation, and other bidding related tasks.
- (iv) Provide assistance in procurement processing including to review the bidding documents, bidding evaluation reports and contracts, and other related documents to bidding procedures.
- (v) Provide training and capacity development on ADB project implementation policies, procedures, safeguard, etc.

18. **Resettlement specialist** (national 3 person-months). The national resettlement specialist shall have a minimum of 10 years of experience in urban infrastructure development and municipal service projects. The resettlement specialist will provide early support for resettlement plan updating and implementation in compliance of ADB safeguard policies and procedures, and coordinate the internal and external monitoring and other safeguard related tasks. The specialist must have good English proficiency to communicate with ADB and to fulfill all English reporting requirements. The specific tasks may include:

- (i) Based on the final engineering design and latest development on the project sites, update the resettlement plans that were prepared based on the feasibility study stage. The new changes in land acquisition, resettlement, compensation standards and other new factors that could have impact to the land acquisition and resettlement needs to be considered.
- (ii) Develop a framework for implementing and monitoring the resettlement plans implementation.
- (iii) Provide practical advice for PMO/PIUs on the implementation of relevant plans within both ADB and domestic policy frameworks.
- (iv) Assist the executing agency and/or implementing agencies to develop plan to carry out the resettlement plans, provide assistance in implementing the resettlement plans, conduct monitoring and coordinate with the external monitoring agency to ensure the implementation is carried out in accordance with the government and ADB policies and procedures.
- (v) Provide assistance in selection of resettlement external monitoring agency and coordinate with the external agency on all monitoring activities as ADB requires.
- (vi) Provide training on ADB Involuntary resettlement policy and procedures, the implementation of RP, RP monitoring, and other ADB requirements.
- (vii) Assist PIUs to set up grievance redress mechanisms in accordance with the RPs.

(g) Scope of Services for Project Implementation Specialists

19. **Urban development specialist/team leader** (international, 8 person-months). The team leader shall be a registered professional engineer with a postgraduate degree and a minimum of 10 years of experience in urban development and urban infrastructure improvement projects financed by ADB or the World Bank. The specialist shall take overall leadership to ensure the successful management and implementation of the project. Specific tasks are explained below:

- (i) Develop detailed work plan, including the specialist input schedule for the project implementation and update the work plan periodically based on the project implementation progress.
- (ii) Develop and establish the project management system to manage and monitor the project implementation progress. Prepare and submit project management manual for approval.
- (iii) Develop and establish contract management system to manage and monitor the procurement process and the implementation of the contracts. Prepare and submit project contract management manual.
- (iv) Coordinate with the financial specialists to develop and establish a financial management and disbursement management system. Prepare and submit project financial management manual.
- (v) Coordinate with team specialists to organize specialist inputs base on the project implementation progress and project development needs. Provide coordination among team specialists, ADB, EA, IAs, and other stakeholders to facilitate the implementation of the project.
- (vi) Take overall responsibility to coordinate preparing and submitting all deliverables, including progress report, monitoring reports, semiannual and annual reports, project completion report, etc.
- (vii) Take responsibility to undertake with the EA at midterm and closing stages of the project, a policy dialogue on water tariff reform.
- (viii) Develop capacity development and training plan and, coordinate and carryout capacity development and training.
- (ix) Monitor overall project progress, contract management, safeguards-related issues and plans, social and gender issues related targets and activities, and the project's development impacts through the PPMS.
- (x) Assist the executing agency to engage qualified external monitors timely in accordance with ADB policies and procedures.

20. **Urban Civil specialist/deputy team leader** (national, 20 person-months). The specialist shall be a civil engineer with a minimum of 8 years of experience in urban development and municipal services projects. The specialist shall take a leading role to work with the team leader to provide overall project management and coordination for the project implementation. The specific tasks may include the following:

- (i) Work with the team leader to provide day-to-day project management and coordination for the project implementation including communication among the executing agency, implementing agencies, and PIUs contractors and other project entities.
- (ii) Provide overall guidance to project-wide construction supervision, contract management, financial and disbursement management, conduct regular site

- inspections and discussions with contractors to assist the implementing agencies and PIUs for construction supervision.
- (iii) Provide technical assistance in civil engineering, water supply, drainage, district heating and other municipal services for the project implementation.
- (iv) Assist the team leader to coordinate among the team specialists to supervise tendering and contracting process.
- (v) Assist the EA, IAs and PIUs for contract management by keeping good records of awarded contracts as well as proposed procurement packages, analyzing needs of contract variations, and issues arising from civil works construction and goods installment, and controlling overall disbursement and residual loan progress.
- (vi) Assist the team leader to coordinate with team specialists for their inputs base on the project implementation progress and project development needs. Provide coordination among team specialists, ADB, executing agency, implementing agencies, and other stakeholders to facilitate the implementation of the project.
- (vii) Together with the team leader, undertake with the EA at midterm and closing stages of the project, a policy dialogue on water tariff reform.
- (viii) Work with the team leader and responsible to coordinate preparing and submitting all deliverables including progress report, monitoring reports, semiannual and annual reports, project completion report, etc.
- (ix) Monitor overall project progress, contract management, safeguards-related issues and plans, social and gender issues related targets and activities, and the project's development impacts through the PPMS.
- (x) Prepare the plans for training and seminars and give the deliverables in both Chinese and English.

21. **Urban road and bridge specialist** (national, 6 person-months). The national specialist shall have a minimum of 10 year experience in the field of urban infrastructures such as bridge and roads, urban planning and public transport for ADB and World Bank projects. The specialist will be responsible to provide technical and management supports for the implementation of urban road and bridge component for the project city/towns. The specific tasks may include:

- (i) Responsible to provide all technical, procurement, and construction supports for the implementation of the urban road and bridge component.
- (ii) Conduct technical review of the urban road component and provide expert comments on engineering detailed design in accordance with the contract documents and applicable national design codes and standards as well as the best international practices.
- (iii) Provide support and review on the bidding documents, bill of quantities, technical specifications, and other contract documents. Provide assistance to the procurement and bidding process including bid review and bid evaluation.
- (iv) Review the current urban planning of the project city and provide recommendations on urban planning improvement in consideration of economic development, urbanization, green development, environmental and ecological preservation development, etc.
- (v) Conduct site inspections to review construction progress, provide technical support to construction planning and construction method, and verify the completion and compliance with the contract documents including the design drawing.
- (vi) Review and inspect the quality of the construction items and safety measures in the construction site, carry out the quality assurance and/or quality control and construction safety plans.
- (vii) Prepare and submit the report on urban road component, provide technical input to other project required reports.

- (viii) Coordinate with the team leader and other team specialist to develop capacity development and training program for people centered urban transport system, and provide training for urban transport improvement.

22. **Municipal solid waste specialist** (international, 2 person-months; national, 6 person-months). The international and national MSW specialists shall have a minimum of 10 and 8 years of experience in municipal solid waste management. The MSW team will be responsible to provide technical and management supports for the implementation of the municipal solid waste components in the project cities. The specific tasks may include:

- (i) Responsible to provide all technical, procurement, and construction supports for the implementation of the solid waste management component, especially to provide guidance and recommendations to the IA and design institute to develop the detailed pilot project component for direct collection and disposal to the landfill site at the selected communities, and to develop the detailed design for recycle stations at the selected communities.
- (ii) The MSW team shall assist the IA to design and develop the public awareness campaign to promote 3Rs for urban residents as part of the capacity development program. The team is also responsible to develop the MSW public awareness campaign implementation plan, and assist IA to implement the campaign.
- (iii) Conduct technical review of the solid waste component and provide expert comments on engineering detailed design in accordance with the contract documents and applicable national design codes and standards as well as the best international practices.
- (iv) Provide support and review on the bidding documents, bill of quantities, technical specifications and other contract documents. Provide assistance to the procurement and bidding process including bid review and bid evaluation.
- (v) Conduct site inspections to review construction progress, provide technical support to construction planning and construction method, and verify the completion and compliance with the contract documents including the design drawings.
- (vi) Review and inspect the quality of the construction items and safety measures in the construction site, carry out the quality assurance and/or quality control and construction safety plans.
- (vii) Provide technical support for the commissioning and equipment testing, and provide support for the facility O&M.
- (viii) Prepare and submit the specialist report on solid waste management component, and provide technical input to other project required reports.
- (ix) Provide input for the training and capacity development, and coordinate with the team leader and other team specialists to carry out training program.

23. **District heating specialist (national, 3 person-months)**. The national specialist shall have a minimum of 10 years experienced in the field of district heating for ADB and World Bank projects. The specialist will be responsible to provide technical and management supports for the implementation of the district heating component for the project city/towns. The specific tasks may include:

- (i) Responsible to provide all technical, procurement, and construction supports for the implementation of the district heating component.
- (ii) Conduct technical review of the district heating and provide expert comments on engineering detailed design in accordance with the contract documents and

- applicable national design codes and standards as well as the best international practices.
- (iii) Provide support and review on the bidding documents, bill of quantities, technical specifications, and other contract documents. Provide assistance to the procurement and bidding process including bid review and bid evaluation.
- (iv) Conduct site inspections to review construction progress, provide technical support to construction planning and construction method, and verify the completion and compliance with the contract documents including the design drawing.
- (v) Review and inspect the quality of the construction items and safety measures in the construction site, carry out the quality assurance and/or quality control and construction safety plans.
- (vi) Prepare and submit the specialist report on district heating component, provide technical input to other project required reports.
- (vii) Coordinate with the team leader and other team specialist to develop capacity development and training program for district heating as well as heating reform and energy conservation, and provide training for district heating improvement.

24. **River rehabilitation specialist** (international 1 person-month, national, 3 person-months). The international and national specialists shall have a minimum of 10 and 8 years experienced in the field of river rehabilitation, river ecological and environmental protection for ADB and World Bank projects. The specialist will be responsible to provide technical and management supports for the implementation of the river rehabilitation component for the project city/towns. The specific tasks may include:

- (i) Responsible to provide all technical, procurement, and construction supports for the implementation of the river rehabilitation component.
- (ii) The specialist team shall introduce the best practices for river rehabilitation used in the developed countries, especially the approach of using natural and ecologically friendly means of river embankment construction to best protect the river and the river basin area, avoiding large hardened river embankment structure when it is possible.
- (iii) Provide guidance and recommendations on the detailed engineering design for the river embankment and flood protection facilities by incorporating the best international practice wherever feasible to achieve the better ecological and environmental benefits.
- (iv) Conduct technical review of the river rehabilitation and provide expert comments on engineering detailed design in accordance with the contract documents and applicable national design codes and standards as well as the best international practices.
- (v) Provide support and review on the bidding documents, bill of quantities, technical specifications, and other contract documents. Provide assistance to the procurement and bidding process including bid review and bid evaluation.
- (vi) Conduct site inspections to review construction progress, provide technical support to construction planning and construction method, and verify the completion and compliance with the contract documents including the design drawing.
- (vii) Review and inspect the quality of the construction items and safety measures in the construction site, carry out the quality assurance and/or quality control and construction safety plans.
- (viii) Prepare and submit the specialist report on district heating component, provide technical input to other project required reports.
- (ix) In coordination with both the team leader and deputy team leader, prepare at a midterm stage of the project a river basin management plan.

- (x) Coordinate with the team leader and other team specialist to develop capacity development and training program for river rehabilitation, flood control, river and river basin protection, river ecological protection and restoration, and provide training for district heating improvement.

25. **Procurement and contract management** (international, 2 person-months; national 6 person-months). The international and national procurement and contract management specialists shall have a minimum of 10 and 8 years of experience in procurement and contract management in urban infrastructure development and municipal service projects. The procurement specialist team will be responsible to provide technical and management supports for bidding document review, procurement assistance, contract bid review and evaluation, and other procurement related tasks. The specific tasks may include:

- (i) Assist the EA and IAs to carry out procurement on civil work, equipment purchase and installation, consulting services, and other contracts in accordance with the PRC and ADB policies and procedure requirements.
- (ii) Provide technical support in design review, bill of quantities, and bidding document review, technical specification review, and other procurement documents review. Provide bidding and procurement process assistance; coordinate with bidding company and other involved agencies, provide assistance in bids review and bid evaluation, bid evaluation report preparation, and other bidding related tasks.
- (iii) Develop contract management system and provide contract management assistance including procurement plan updating, contract award and disbursement monitoring and management, procurement planning and projection, and other contract management tasks.
- (iv) Provide inputs for contract management and procurement to progress reports, project midterm and completion reports, and other project required reports.
- (v) Assist the team leader to coordinate among the team specialists to provide project implementation support on technical review, procurement documents review, and contract variation requests review, due diligence report, contractor's claims, and other project management support.
- (vi) Provide input for the training and capacity development, coordinate with the team leader and other team specialists to carry out training program and provide support to the capacity development activities.
- (vii) Review the bidding documents, bidding evaluation reports and contracts, and other related documents to bidding procedures.

26. **Environment specialists** (international 1 person-month, national, 8 person-months). The international and national environmental specialists shall have a minimum of 10 and 8 years of experience in environmental services for urban infrastructure development and municipal service projects, respectively. The environmental specialists will be responsible to provide technical and management support to ensure compliance during project implementation with the initial environmental examination (IEE) and environmental management plan (EMP). Specific tasks include:

- (i) Assist to establish the environmental management system, consisting of relevant staffing, inspection, monitoring, grievance redress mechanism, reporting, and initiating corrective actions or measures.
- (ii) Assist TPPMO and PIUs to update the EMP including the mitigation measures and environmental monitoring program therein, based on the detailed engineering design and submit for executing agency and ADB's clearance and disclosure.

- (iii) Assist PIUs in contracting of environment monitoring agency/agencies and coordinate with the agency on all monitoring activities as required by domestic and ADB policies and procedures.
- (iv) Review the site-specific EMPs prepared by contractors.
- (v) Assist the TPPMO and PIUs to establish a Grievance Redress Mechanism (GRM), including project public complaint units (PPCU), and provide training for the PPCU and GRM access points.
- (vi) Conduct regular EMP compliance assessments, undertake site visits as required, identify any environment-related implementation issues, propose necessary corrective actions, reflect these in a corrective action plan.
- (vii) Assist the PIUs and TPPMO to prepare annual environmental monitoring and progress reports to ADB.
- (viii) Provide training to TPPMO, LPMOs and PIUs on environmental laws, regulations and policies, ADB Safeguard Policy (2009), EMP implementation, and GRM in accordance with the training plan defined in the EMP.
- (ix) Help TPG prepare a strategy to adapt to anticipated climate change. The strategy shall combine periodic assessment and review of the hydrology and the state of knowledge about climate change every 10 years, incremental upgrade of flood control facilities to restore the desired standard, and strong reliance on non-structural measures (such as the review and strengthening of measures flood monitoring and early warning systems, emergency preparedness and response plans, etc).
- (x) Prior to mid-term review mission, provide support to local project management offices and PIUs in organizing public meetings in the project city/towns to present and discuss EMP implementation progress, solicit community opinions and concerns, and agree on required corrective actions.
- (xi) Prior to project completion, organize surveys in the project city/town to assess community satisfaction with project implementation, project outputs, and EMP implementation performance, and document the results in the project completion report (PCR).
- (xii) Provide input of environmental protection to progress report, midterm report, project completion report, and other project required documents.
- (xiii) Assist the team leader to coordinate among the team specialists to provide project implementation support on technical review, procurement documents review and contract variation requests review, due diligence report, contractor's claims and other project management support.

27. **Social and gender and ethnic minorities specialist** (national 8 person-months). The national social and gender ethnic minorities specialist shall have a minimum of 10 years of social development (including gender) experience in urban infrastructure development and municipal service projects and previous work in Xinjiang. The specialist will be responsible to provide social development and social safeguard aspect support for the project implementation in compliance of ADB safeguard policies and procedures including the implementation of SDAP, GAP, EMDP and RPs, and coordinate the internal and external monitoring and other safeguard related tasks. The specialist must have good English proficiency to communicate with ADB and to fulfill all English reporting requirements. The specific tasks may include:

- (i) Provide practical advice for EA/IA on the implementation of the EMDP, GAP and SDAP within both ADB and domestic policy frameworks.

- (ii) Ensure that the EMDP, SDAP and GAP are reviewed and updated, as needed. Make sure that the EMDP, SDAP and GAP are properly implemented.
- (iii) Assist EA/IA to conduct monitoring and coordinate with the PIU resettlement/social specialists to ensure the implementation is carried out in accordance with the government and ADB policies and procedures.
- (iv) Assist the EA/IA to design and conduct public awareness campaigns identified under EMDP, GAP and SDAP.
- (v) Work in close collaboration with and mentor the “safeguard” focal point staff in the PMO and PIUs and the women appointed in the community offices;
- (vi) Together with the resettlement specialist provide assistance in selection of resettlement/social external monitoring agency and coordinate with the external agency on all monitoring activities as ADB requires; Review external social monitoring reports during both construction and operation periods and submit to the authority for concurrence, prior to submission to ADB.
- (vii) Provide relevant inputs for project progress reports, semiannual monitoring reports, project completion report, and other project required documents.
- (viii) Provide support for carrying out capacity building training, and provide management support to the capacity development activities. Provide training on (a) proper implementation of EMDP, and related ADB requirements and (b) proper implementation of GAP and SDAP and related ADB requirements.
- (ix) Assist the team leader to coordinate among the team specialists to provide project implementation support on technical review, procurement documents review and contract variation requests review, due diligence report, contractor’s claims and other project management support.

28. **Resettlement specialist** (national 8 person-months). The national resettlement specialist shall have a minimum of 10 years of experience in urban infrastructure development and municipal service projects. The resettlement specialist will be responsible to provide support for resettlement plan implementation in compliance of ADB safeguard policies and procedures, and coordinate the internal and external monitoring and other safeguard related tasks. The specialist must have good English proficiency to communicate with ADB and to fulfill all English reporting requirements. The specific tasks may include:

- (i) Develop a framework for implementing and monitoring the resettlement plans implementation. Verify and update the resettlement plans based on the detailed engineering design and submit for the executing agency and ADB’s approval to ensure actual practices are in accordance with the plans. Provide practical advice for PMO/PIUs on the implementation of relevant plans within both ADB and domestic policy frameworks.
- (ii) Collect additional information and conduct additional consultation to ensure that the RPs and EMDP are being implemented.
- (iii) Assist the EA and IAs to develop plan to carry out the resettlement plans, provide assistance in implementing the resettlement plans, conduct monitoring and coordinate with the external monitoring agency to ensure the implementation is carried out in accordance with the government and ADB policies and procedures.
- (iv) Assist PIUs to collect information and prepare quarterly monitoring reports for the TPPMO.
- (v) Provide assistance in selection of resettlement external monitoring agency and coordinate with the external agency on all monitoring activities as ADB requires; Review external environment monitoring reports during both construction and operation periods and submit to the authority for approval.

- (vi) Provide support for carrying out capacity building training, and provide management support to the capacity development activities. Provide training on proper implementation of RP, and other ADB requirements.
- (vii) Assist PIUs with preparation of Resettlement Completion Reports.

29. **External Resettlement and Social Monitor** (national 10 person-months). An external resettlement and social monitor will be an individual consultant engaged for the whole duration of project implementation. The specialist shall have a minimum of 10 years of experience in urban infrastructure development and municipal service projects. He/she needs to be familiar with Xinjiang social, poverty and ethnic minority issues. Knowledge of Kazakh is a plus. The consultant with a total input of 10 person-months and engaged by domestic fund will assist TPG and its IAs to examine and verify the project's social and resettlement safeguards performance. The external resettlement and social monitor must be independent and will:

- (i) Conduct a baseline survey (sex disaggregated, wherever possible) of affected persons and monitoring to ensure implementation of RPs, EMDP, SDAP and GAP, are in compliance with ADB's safeguard and other relevant policies.
- (ii) Provide recommendations to resolve any issues or problems on implementation of plans (as specified above), and provide advice to TPG and implementing agencies.
- (iii) Verify and comment on the accuracy of the resettlement and EMDP internal monitoring undertaken by the PIU staff, with assistance from the consultants and recommend measures to rectify the identified deficiencies.
- (iv) Conduct semiannual independent monitoring of the implementation of the RPs, EMDP, SDAP and GAP against the approved plans, including entitlements and eligibility, compensation options and standards, consultations and participation, income and livelihood rehabilitation, achievement of the no-worse-off objective, etc., grievances and redresses, recommend corrective actions including household surveys and FGDs (as per TOR in RPs and EMDP).
- (v) Assess the performance of IAs to implement plans.
- (vi) Check whether TPG PMO and implementing agencies are paying special attention to vulnerable groups, in accordance with the RPs including women, the poor, and ethnic minority groups to assess whether they have participated and fully regained their standard of living.
- (vii) Submit English and Chinese external resettlement and social monitoring reports to
- (viii) TPG and ADB with quality acceptable to ADB every six months during and until completion of resettlement process, including two annual evaluation reports, and activities under the EMDP, SDAP and GAP.

30. **Project performance monitoring system (PPMS) specialist** (national, 5 person-months). The national PPMS specialist shall have a minimum of 8 years of experience in PPMS monitoring for ADB urban development and municipal service projects. The specialist will be responsible to PPMS monitoring services meeting ADB PPMS policy and procedure requirements and provide assistance to the EA and IAs to complete project performance monitoring requirements per PRC government requirements. The specific tasks may include:

- (i) Based on the PPMS system developed during the project preparation and in consultation with the EA and IAs, the specialist shall develop a detailed PPMS framework and implementation plan, including the overall monitoring system, refinement of indicators, targets and goals, sources for monitoring data, reporting system, etc.

- (ii) Update indicators and design a PPMS sheet according to the project design and monitoring framework. The selected indicators should provide a practical and meaningful measure of key Project impacts, outcomes, outputs and achievements. Specified targets and goals should be measurable and achievable.
- (iii) Ensure collection, analysis and reporting of sex-disaggregated data wherever relevant.
- (iv) In coordinating with the EA and IAs to conduct baseline value survey at the beginning of the project implementation, and prepare initial PPMS report.
- (v) Based on the designed PPMS, conduct periodic PPMS monitoring and data collection, prepare and submit PPMS reports in accordance with ADB requirements semiannually. The monitoring reports should include: (i) summary of monitoring data for major indicators; (ii) major existing and potential problems; (iii) recommended mitigation or prevention measures which shall be incorporated in the updated PPMS implementation plan; (iv) assessment of previous follow-up actions; and (v) conclusions and recommendations.
- (vi) Provide inputs for contract management and procurement to progress reports, project midterm and completion reports, and other project required reports.
- (vii) Provide input for the training and capacity development; coordinate with the TL and other team specialists to carry out training program for PPMS development and implementation, and provide support to the capacity development activities.
- (viii) Provide assistance and supports to the executing agency and/or implementing agencies to complete the project performance monitoring tasks in compliance of PRC auditing and monitoring policies and requirements.

31. **Financial and economic specialist** (national, 6 person-months). The national financial and economic specialist shall have a minimum of 10 years of experience in urban infrastructure development and municipal service projects. The financial and economic specialist will be responsible to provide financial and economic supports for the project implementation in compliance of ADB and domestic requirements on financial management, financial and economic analysis, disbursement and other financial and economic tasks. The specialist must have a professional accountancy qualification (certified public accountant). The specialist must have good English proficiency to communicate with ADB and to fulfill all English reporting requirements. The specific tasks may include:

- (i) Assist the EA and IAs to develop financial management system, financial management plan, disbursement plan and projection; work with team leader to prepare and submit project financial management manual.
- (ii) Assist the EA and IAs to establish project accounting and disbursement system to comply ADB disbursement requirements and domestic financial management and financial annual auditing requirements; provide assistance in accounting management and disbursement processing, annual auditing and other financial related tasks.
- (iii) Provide assistance to review the EA and IAs financial statements and provide comments to meet ADB requirements.
- (iv) Provide the update economic assessment and analysis for the midterm review and project completion report and to provide the updated economic analysis results for ADB.
- (v) Provide input of financial and economic aspect to progress report, midterm report, project completion report, and other required documents.

- (vi) Assist the team leader to coordinate among the team specialists to provide project implementation support on technical review, procurement documents review and contract variation requests review, due diligence report, contractor's claims and other project management support.
- (vii) Provide support for carrying out capacity building training, and provide management support to the capacity development activities. Develop training program and conduct training on: (a) ADB's disbursement procedure and financial management (including financial audit) and project financial management, (b) organizational financial management and financial audit system and (c) public financial management.
- (viii) Review the withdrawal applications and assist in disbursement application and process.

(h) Scope of Services for Capacity Development Specialists

32. In addition to the regular implementation and management support, the capacity development component is intended to help the EA/IAs to improve their management capacity in urban development, infrastructure and municipal services, O&M, especially in introducing the new technologies, new concepts, new management tools and methods that have been successfully used and proven effective in the developed countries. In consideration of the current situation in the project cities and counties, the capacity development program has been developed in the focus areas of urban transports, MSW management (incorporated in the implementation and management package), and border trade development. The detailed scope of work for the specialists are summarized in the following:

33. **Capacity development urban transport specialists** (international, 1 person-month; national, 2 person-months). The international and national specialists shall have a minimum of 10 and 8-years experienced in the field of urban transport, urban planning and public transport for ADB and World Bank projects. The urban transport team will be responsible to provide technical and management supports for the implementation of urban road components and provide assistance to improve the urban transport. The specific tasks may include:

- (i) Review and update urban transport improvement plan based on the latest urban development and urban transport development, especially in pedestrian and bicycle traffic, non-motorized traffic, and public transport.
- (ii) Develop detailed work plan for implementing the urban transport improvement plan including institutional arrangement, investment, engineering and technical aspects, public consultation, education and public awareness, and implementing schedule.
- (iii) Assess the existing urban transport system, especially the current pedestrian and bicycle traffic planning and facilities, public transportation system, intelligent transport system applications, urban parking and parking management system, and other urban transport system; identify the problems on the current urban transport system causing traffic congestion, air pollution and unsafe urban transport; develop urban transport improvement plan for promoting people-centered urban transportation system by improving the pedestrian and bicycle system, non-motorized traffic, and public transport system.
- (iv) Introduce the concept of public transportation oriented urban development, and present national and international case and best practices; introduce public transportation and pedestrian and NMT oriented commercial and residential development; Organize at the early stage of the project implementation both international and national study tours on best example of public transportation.

- (v) Assist EA/IAs to develop implantation plan for urban transport improvement, and provide technical and management support for the plan implementation.
- (vi) Assess the existing public transportation system including public bus, taxi, high speed railroad, etc. Identify problems in the public transport system for coverage, effectiveness, schedule, convenience, safety and other relevant issues; Develop public transport improvement plan to promote public transport in the urban area including public transport planning, bus priority lanes, intermodal transport among bus, bicycle, pedestrian, railroad traffic, motor vehicle traffic, etc.
- (vii) Coordinate with the team leader and other team specialist to develop capacity development and training program for people centered urban transport system, and provide training for urban transport improvement.
- (viii) Prepare and submit urban transport improvement report outlining improvements on urban transport, public transportation, public education, and awareness campaign program.

34. **Capacity development urban traffic safety specialist** (national, 2 person-months). The national specialist shall have a minimum of 10 years experienced in the field of urban transport, urban planning and public transport and urban traffic safety for ADB and World Bank projects. The urban traffic safety team will be responsible to provide technical and management supports for urban traffic safety improvement. The specialist must have good English proficiency to communicate with ADB and to fulfill all English reporting requirements. The specific tasks may include:

- (i) Evaluate the existing traffic safety condition and develop traffic safety improvement plan on the latest urban development and urban transport situation, especially in pedestrian and bicycle traffic (including bike lanes network planning), NMT, and public transport.
- (ii) Develop detailed work plan for implementing the urban traffic safety improvement plan. The urban traffic safety shall address the 3E urban traffic safety program for Engineering, Education and Enforcement, and the plan shall cover institutional arrangement, investment, engineering and technical aspects, public consultation, education and public awareness, and implementing schedule.
- (iii) Conduct urban traffic safety auditing to assess the existing urban traffic safety situation, especially the current pedestrian and bicycle traffic, public transportation system, motor vehicle traffic, and all other urban traffic safety problems.
- (iv) Prepare and submit urban traffic safety auditing report.
- (v) Assist EA/IAs to develop public education and public awareness campaign program to promote people centered urban transport system promoting pedestrian and bicycle traffic, non-motorized traffic, public traffic, low carbon urban transport; Provide technical and management support for the plan implementation.
- (vi) Coordinate with the team leader and other team specialist to develop capacity development and training program for people centered urban transport system, and provide training for urban transport improvement.
- (vii) Prepare and submit urban transport improvement report outlining improvements on urban transport, public transportation, public education, and awareness campaign program.

35. **Capacity development border trade specialist** (international 1 person-month; national, 2 person-months). The international and national border trade specialists shall have a minimum of 10 and 8 years experienced in trade and border trade development and regional development. The

border trade team will be responsible to provide technical and management supports for promoting border trade development for the proposed component. The specific tasks may include:

- (i) Evaluate the current border trade situation in the project city and the border port including goods for trade, the production and transportation of the goods, market development trend, local resources for production and export, transportation and other border trade support facilities.
- (ii) Evaluate the government institutional arrangement and policies on promoting border trade, investment for border trade production, government investment and construction plan to facility border trade, and border trade development plan to attract more investments coming to the project city.
- (iii) Assess and document potential social and environmental issues related to increase cross border trade.
- (iv) Conduct study on promoting border trade development including to identify key import and export products from local and the neighboring countries, policy and legal framework to encourage productions and investments, market analysis for local border trade development, regional corporation, investment plan, etc.
- (v) Develop border trade development plan for local government covering institutional arrangement, policies and legal framework, favorable policies and incentives to promote border trade production and investment; develop border trade development implementation plan, and provide assistance for the plan implementation.
- (vi) Coordinate with the team leader and other team specialist to develop capacity development and training program for border trade, and provide training for border trade development.
- (vii) Prepare and submit border trade development report outlining border trade development strategy and regional cooperation in border trade development.

36. **Capacity development border trade logistic specialist** (national, 2 person-months). The national border trade logistic specialist shall have a minimum of 10 years experienced in border trade and logistic development. The border trade logistic team will be responsible to provide technical and management supports for promoting border trade logistic development for the proposed component. The specific tasks may include:

- (i) Evaluate the current border trade logistic setup and arrangement in the project city and the border port including border trade goods storage and transportation, logistic facilities, procedures for goods flow and processing at the custom, custom equipment and automation, local resources for logistic development, and other border trade and logistic support facilities.
- (ii) Evaluate the government institutional arrangement and policies on promoting border trade and logistic development, investment for logistic development, government investment and construction plan for logistic facilities, and logistic development plan to attract more investments coming to the project city.
- (iii) Conduct study on promoting logistic development including policies and legal framework to attract more investment for logistic development, identify the key areas and facility for logistic development, strategic and investment plan to develop local logistic center for border trade development.
- (iv) Develop border trade logistic development plan for local government covering institutional arrangement, policies and legal framework, favorable policies and incentives to promote border trade logistic development, develop border trade logistic development implementation plan, and provide assistance for the plan implementation.

- (v) Coordinate with the team leader and other team specialist to develop capacity development and training program for border trade logistic development, and provide training for border trade and logistic development.
- (vi) Prepare and submit border trade logistic development report outlining border trade logistic development strategy, logistic development implementation plan and implementation of the border trade logistic development.

37. **Inputs and Cost of Consulting Services.** The consulting service inputs for project management and capacity development as well as the start-up assistance are summarized below in Table 9.

Table 9: Project Implementation Support and Capacity Development

Item		Cost (\$)
A. Remuneration		
	International consultant (PM)	16 pm 330,000.00
	National consultants (PM)	105 pm 623,000.00
	Subtotal =	953,000.00
B. Initial project implementation support		76,800.00
C. Workshops and seminars		63,000.00
D. Per diem, transport, translation and office, study tours, public campaign		
1	Per diem	169,500.00
2	Transport	46,908.33
3	Office equipment and operation	20,000.00
4	Report	17,192.00
5	Translation	50,000.00
6	Oversea study tours	97,920.00
7	Domestic study tours	48,000.00
8	Public awareness campaign & safeguard action plans	130,000.00
9	Contingency	27,680.00
	Subtotal =	607,200.33
	Grand Total =	1,700,000.33
pm = person month		
Asian Development Bank.		

VII. SAFEGUARDS

A. Environment

1. **Environment due diligence.** The Project is environment category B. A project initial environmental examination (IEE) was prepared. The IEE complies with ADB's policies and requirements including ADB's Safeguard Policy Statement (2009).³¹ The IEE consolidates findings of five environmental impact statements (EIS) and six tabular environment impact assessments (TEIA) prepared for all project components by a licensed institute in compliance with the PRC Law on Environmental Impact Assessment (2003), the Technical Guidelines for Environmental Impact Assessment (HJ/T2-93) and other relevant PRC regulations and guidelines. All domestic EISs and TEIAs have been approved by to the Tacheng Prefecture Environment Protection Bureau (TPEPB).

2. **Environment benefits.** The project will have significant environment, health, and safety benefits. The project will facilitate environmentally sustainable urban infrastructure development by improving urban road linkages and related facilities by rehabilitating and upgrading urban roads and street alleys, constructing urban roads and bridges, improving water supply and sewer coverage, installing energy-efficient LED street lighting, and expanding public green areas. The project will improve public transport services and implement road safety and traffic management initiatives. Key environment benefits are highlighted here:

3. **People-centered transport facilities.** All new roads will be developed with safe and adequately wide footpaths as well as fully segregated non-motorized lanes where possible. Traffic safety will be promoted through adequate design of the roadway itself (including key interventions such as appropriate street lighting, safe roadway alignments, adequate shoulders, signage, roadway markings, and protective barriers in vulnerable areas). Project design has emphasized investments in public transport facilities, including the installation of 28 weather-protected public bus shelters along project roads in Tacheng, Emin and Yumin. The use of LED street lights will result in energy savings over 2.43 million kilowatt hour per year with an estimated carbon dioxide equivalent emission reduction of 2,420 tons per annum (t/a) as compared to conventional street lighting.³²

4. **Flood control and river revitalization.** In Tacheng City, the Project will construct and rehabilitate unstable river embankments along 15.2-kilometers (km) of the Kalangguer River, significantly improving the city's ability for flood control and protection. Consequently, damages of floods to houses, facilities and goods, as well as farm lands and crops, will be prevented and/or mitigated. The most direct benefit of the project will be that the flooding of an estimated 14-square kilometers (m²) area will be avoided should a 1-in-50-year flood occur. The revitalization of the Kalangguer riverfront will include a 15 meter (m) band of trees along both sides to improve visual appearance, and carbon sink to offset city vehicle emissions. The 167,000 trees will cover some 36 hectare (ha), which are expected to sequester 1,170 tons of carbon dioxide per year.

5. **District heating.** With project support, the Tacheng Municipal Government will commission new district heating distribution capacity to supply a new service areas. The planned combined heat and power plan (CHP) will provide hot water to the district heating system. The proposed development will substantially improve energy efficiency and service quality, expand district

³¹ ADB. 2009. Safeguard Policy Statement. Manila.

³² A KWh electricity saving reduces 0.997 kg of CO₂.

heating coverage by 930,000 square meters, and ultimately lead to emission reductions resulting from the shift in heat source.

6. **Solid waste.** The project will support upgrading the existing collection system to enhance collection efficiency and meet environmental compliance, building new collection stations to serve expanded urban area, and piloting sorting and recycling scheme in three communities in Tacheng. Some 103 t/d of solid waste will be collected and disposed in Tacheng City after implementation of the project.

7. **Anticipated impacts.** Construction and operation of project facilities do have potential impacts to the environment in the four project cities and counties. Project construction will require significant earthwork that will temporarily increase soil erosion.³³ Dust and noise generated by road construction activities will be a nuisance to nearby residents, especially for road and alley rehabilitation works in Tacheng, Emin and Yumin. Discharge of wastewater from construction sites could potentially pollute surface and groundwater in the project's area of influence. River sediment dredging and works on the Kalanguer riverbanks could stir up the sediment, releasing suspended solids and nutrients into the water column affecting water quality and ecology. During operation, traffic travelling on the project roads will generate air and noise pollution, potentially affecting nearby sensitive receptors. Operation of heat exchange stations in Tacheng, and solid waste collection stations in Tacheng and Yumin, could generate odor and noise impacts. The IEE predicts that these impacts will be localized, and that they can be mitigated through the implementation of the environmental management plan (EMP), which is annexed and forms part of the PAM (Attachment 1). The EMP defines mitigation measures, monitoring requirements, and institutional responsibilities to ensure proper environmental management throughout the project construction and operation.

8. **EMP implementation arrangements.** The responsibilities for environmental management and supervision during the various stages of implementation of the project are defined in the EMP.³⁴ TPG (through the TPPMO) and the project cities (through the LPMOs and PIUs) will assume overall responsibility for implementing, supervising, monitoring and reporting on the EMP. Their capacity to implement the EMP, as well as the capacity of the project implementing and operating agencies to manage project facilities, will be strengthened through capacity building and training activities defined in the EMP. TPPMO and the PIUs will appoint qualified staff to coordinate and monitor EMP implementation. These will be supported by environment management specialists contracted under the project management consultancy package.

9. The **TPPMO** will have the overall responsibility delegated by Tacheng Prefecture DRC for supervising the implementation of the EMP, coordinating the environment grievance redress mechanism (GRM) and reporting to ADB. The TPPMO will assign one safeguards officer (TPPMO-SO) in charge to supervise the effective implementation of the EMP.

10. Each **PIU** will establish an environmental management unit (EMU) which will take charge of (i) coordinating the implementation of the EMP and developing implementation details; (ii) supervising the implementation of mitigation measures during project construction and operation (the PIU will hire construction supervision companies, CSCs); (iii) ensuring that environmental management, monitoring, and mitigation measures are incorporated into bidding documents, construction contracts and operation management plans; (iv) organizing periodic environmental

³³ According to the water and soil conservation plan, the project will impact 475ha of land, require 2.71 mio m³ of borrow and generate 0.97 mio m³ of spoil, and induce 24,300 tons of soil erosion if soil protection measures are not implemented.

³⁴ Any revisions of EMP will be disclosed in compliance with Public Communications Policy (2011).

monitoring in compliance with the approved monitoring plan (**Table EMP-6/7**); (v) submitting semiannual EMP progress reports to the TPPMO for consolidation and submission to ADB; (vi) act as local entry points to the GRM; and (vii) responding to any unforeseen adverse impact beyond those mentioned in the domestic EISs and TEIAs, the project IEE and the EMP.

11. Environment specialist under project management consulting services (CS-ES). Environment specialist (international, 1 person-month, and national, 8 person-months) will be hired under the project management consulting services (CS-ES). The CS-ES will advise the TPPMO, LPMOs, PIUs, contractors and CSCs on all aspects of environmental management and monitoring for the project. The CS-ES will (i) assist in updating the EMP and environmental monitoring program, as needed; (ii) supervise the implementation of the mitigation measures specified in the EMP; (iii) on behalf of the EA, prepare the annual environment monitoring reports in English and submit them to ADB; (iv) provide training to the TPPMO, LPMOs, PIUs, CSCs, and contractors on the PRC's environmental laws, regulations and policies, ADB SPS, World Bank Environmental, Health and Safety (EHS) Guideline, EMP implementation, and GRM in accordance with the training plan defined in Table EMP-8; (v) identify any environment-related implementation issues, and propose necessary corrective actions. The CS-ES will also provide support to LPMOs and PIUs in organizing public meetings in the project city/towns prior to mid-term mission to present and discuss EMP implementation progress, solicit community opinions and concerns, and agree on required corrective actions. Prior to project completion report, the CS-ES will organize surveys in the project city/town to assess community satisfaction with project implementation, project outputs, and EMP implementation performance, and document the results in the project completion report (PCR).

12. Construction contractors, construction supervision companies (CSCs). Construction contractors will be responsible for implementing relevant mitigation measures during construction under the supervision of the CSCs and PIUs. Contractors will develop site-specific EMPs based on the project EMP. CSCs will be contracted by the PIUs. The CSCs will be responsible for supervising construction progress and quality, and EMP implementation on construction sites. Each CSC will assign one engineer on each construction site to: (i) supervise the contractor's EMP implementation performance; and (ii) prepare the contractor's environmental management performance section in monthly project progress reports submitted to the PIUs.

13. Environmental monitoring stations (EMS). The PIUs will contract the local environment monitoring stations at project city/county level to conduct periodic environmental quality monitoring during construction and operation in accordance with the monitoring plan (Table EMP-6/7).

14. Grievance redress mechanism (GRM). Environment safeguards related grievances may occur during construction and operation of the project. In consultation with the TPPMO, the LPMOs, the IAs, the PIUs, it was agreed that one GRM will be established to address community concerns and complaints. The GRM will be coordinated by the TPPMO, with GRM access points at local level (contractors, PIUs, and IAs). TPPMO will establish an environmental GRM with local GRMs established at project city level and coordinated by the PIUs, which will follow the procedure and timeframe defined in the EMP (Figure EMP-1). XPMO and ADB will be informed on, and involved in, the grievance resolution process. The CS-ES will provide training on the GRM to ensure that responsibilities and procedures are clear.

B. Involuntary Resettlement

15. The project is classified as Category A for involuntary resettlement due to significant land acquisition and resettlement impacts. The implementing agencies, with the support of a local

institute, prepared resettlement plans for components of (i) Tacheng, (ii) Emin, (iii) Tuoli, and (iv) Yumin. The resettlement planning and implementation is designed to ensure that the affected persons (APs) will be better off or at least not worse off as a result of the project.

16. In total, the permanent land acquisition and house demolition required by the project will affect a total of 684 households and 2,389 persons. Among these, 831 persons belong to ethnic minority groups, accounting for 34.7%. The project will affect 6 townships, and 14 communities/administrative villages. In total, the project will acquire about 1,474 mu of collective land and 1,481 mu of state-owned land. A total of 91,001 square meters (m²) of residential houses and 18,317 m² shops and enterprises will be demolished. The impacts of the project are summarized in Table VII-1.

Table VII-1: Summary of Land Acquisition and Resettlement Impacts

	Permanent Land Acquisition (mu)				House Demolition (m ²)				
		Of which							
City/ county	Collec- tive	Cultiva- ted	House Plot/ other	State- owned	Residential	Shops/ enter- prises	Affected House- hold	Affected Persons	Ethnic Minority People
Tacheng	840.74	626.07	214.67	902.67	70,307.20	16,712.53	450	1,526	438
Emin	93.73	81	12.73	87.9	20,693.80	1,604.30	106	385	186
Tuoli	377.63	373.93	3.7	467.68	0	0	82	323	182
Yumin	161.79	161.79	0	22.85	0	0	46	155	25
Total	1,473.89	1,242.79	231.1	1,481.10	91,001.00	18,316.83	684	2,389	831

17. This RP is formulated in accordance with The Land Administration Law of the PRC (2004), The Decision of the State Council on Intensifying the Reform and Tightening the Land Administration (Guo Fa [2004] No. 28), Notice on the Promulgation and Implementation of Autonomous Unified Annual Output Value Standard (new MLR [2011] 19), Approved on Autonomous Unified Annual Output Value Standard Land (Xin Fa [2010] 323), Notice on Adjusting Charge Standard of Compensation and Resettlement Fees in Grassland [2010] 2679, and Safeguard Policy Statement (SPS) of ADB (June 2009). The PMO, PIU, and local town and township government of each project city/county will provide necessary assistance for house construction and relocation during resettlement implementation.

18. **Institutional arrangements.** Each project implementing unit (PIU) will establish a resettlement office for supervision of implementation, continued public consultation, monitoring of progress, and response to grievances. The grievance address procedures will be established and be included in each RP and relevant resettlement information booklets. The PMO and PIU of each project city/county will have at least two full-time staff responsible for land acquisition and resettlement, respectively. The staff from each component resettlement office will take the lead responsibility for coordinating the planning, implementation, financing, and monitoring of land acquisition and resettlement. They will work closely with relevant village officials, land administration bureaus, house demolition offices and grassland monitoring and supervision station, and will be responsible for supervision and monitoring of resettlement (e.g., delivery of entitlements, selection of new housing sites, restoration of incomes, provision of replacement land, and other economic measures). The resettlement supervision milestones are in Table VII-2. A training program will be organized for the resettlement officers.

19. RPs will be updated/finalized based on final design and census of APs/detailed measurement survey and sent to ADB for review and approval prior to commencement of land acquisition and house demolition and award of civil works contracts. All compensation and resettlement assistances will be paid to affected households prior to commencement of construction activities. The cost estimate for land acquisition and resettlement for the four components is equivalent to CNY370.64 million or \$45.366 million in 2014 prices, which will be financed by the IAs. Resettlement implementation will be scheduled to precede the component construction schedules. Resettlement implementation will be completed prior to component construction. The implementing offices and the city/county governments will ensure that such funds are made available on a timely manner.

20. **Grievance redress mechanism.** The PIUs will establish the four stages of grievance mechanism at the village-level, township government, city/county land acquisition office, and People's court as elaborated below:

- Stage 1: If any displaced person is dissatisfied with any land acquisition and resettlement of any other safeguards related problems, he/she may file an oral or written appeal with the community committee/sub-district office orally or in writing. In case of an oral appeal, the community committee/sub-district office shall handle such appeal and keep written records. Such appeal should be solved within 2 weeks.
- Stage 2: If the displaced person is dissatisfied with the disposition of Stage 1, he/she may file an appeal with project city/county resettlement office or land and resources bureau (depending upon the issue) after receiving such disposition, which shall make a disposition within 2 weeks.
- Stage 3: If the displaced person is still dissatisfied with the disposition of Stage 2, he/she may file an appeal with the city/county PMO receiving such disposition, which shall make a disposition within 2 weeks.
- Stage 4: If the displaced person is still dissatisfied with the disposition of Stage 3, he/she may apply for administrative reconsideration with the city/county government after receiving such disposition within 3 months.

21. Displaced persons may file an appeal on any aspect of resettlement, including compensation rates, etc. The above means of appeal, and the names, locations, persons responsible and telephone numbers of the appeal accepting agencies will be communicated to the displaced persons at a meeting, through an announcement or the resettlement information booklet, so that the displaced persons know their right of appeal. Mass media will be used to strengthen publicity and reportage, and comments and suggestions on resettlement from all parties concerned will be compiled into messages for disposition by the resettlement organization at all levels. All agencies will accept grievances and appeals from the displaced persons for free, and costs so reasonably incurred will be disbursed from the contingency costs. During the whole construction period of the project, these appeal procedures will remain effective to ensure that the displaced persons can use them to address relevant issues. Affected persons can also submit complaints to ADB which will be handled by the project team. If an affected person is still not satisfied and believes he/she has been harmed due to non-compliance with ADB policy, s/he may submit a complaint to ADB's *Accountability Mechanism*.³⁵

³⁵ <http://www.adb.org/site/accountability-mechanism/main>.

22. **Monitoring.** A detailed plan for both the internal and external monitoring and evaluation (M&E) are included in the RPs. Each city/county PIU will prepare an internal monitoring report and submit the report to Tacheng Prefecture PMO quarterly. Tacheng Prefecture PMO will submit the report to ADB. Furthermore, the Tacheng Prefecture PMO will employ an external resettlement monitoring institute to establish an independent external monitoring system in order to deliver a truly independent and unbiased external monitoring report. A baseline study of displaced persons will be completed before commencement of the land acquisition and resettlement and the first monitoring report will be submitted in March 2015. After that and until completion of the land acquisition and resettlement, semi-annual monitoring reports will be prepared and submitted for ADB's review and annually for two (2) years after completion of the resettlement. The implementation plan of the RPs is summarized in Table VII-2.

Table VII-2: Implementation and Supervision Milestones

No.	Resettlement Tasks	Target	Responsible Agency	Deadline
1.	Consultation and Disclosure			
1.1	Draft RP circulation and endorsement	Cities and project Counties.	IA and county governments	Jan 2015
1.2	RIB distribution	All affected villages and people	City and County ROs	Feb 2015
1.3	Consultations for updating RP	Seriously affected villages and people	IA, City and County ROs, consultant	Dec 2014
1.4	RPs distribution	All affected villages	City and County ROs	Jan 2015
2.	Resettlement Plan & Budget			
2.1.	DMS		DI, city & county ROs, affected villages and APs	Mar 2015
2.2	Updating RP based on DMS		IA, consultant	Mar 2015
2.3	Approval of final RP & budget		Each City & county Government	Mar 2015
3.	Capacity Building			
3.1	Establishment of a resettlement offices at various levels		IA, Local governments	Dec 2014
3.2	ROs capacity building	30 staff	IA, Consultant	Dec 2014
3.3	Designate village authorities	All affected villages	City and County ROs	Dec 2014
4.	Commencement and Completion of Resettlement			
4.1	Agreements with villages and APs	All villages and APs	City & County ROs	Mar 2015– Oct 2017
4.2	Commencement of LAR		All ROs	Mar 2015
4.3	Disbursement of compensation to APs		City & County ROs	Mar 2015 onwards
4.6	Completion		All ROs	31 Dec 2018
5.	Monitoring & Evaluation			
5.1	Internal monitoring reports	Semi-annual reports	IA	Feb and Aug each year
5.2	Contracting external monitor		IA	Jan 2015
5.3	Baseline survey	10-20% of seriously affected HHs 50% affected villages	External monitor	Feb 2015 (during and shortly after DMS)
5.4	External monitoring report	Semi-annual reports	External monitor	Mar and Sep each year
5.5	Resettlement completion report	Report	PMO	31 Dec 2019

C. Ethnic Minorities

23. The project is classified as category B for the indigenous peoples safeguard. The total population of ethnic minorities in Tacheng Prefecture is about 46% of the total population. The top seven minorities in the Project area and Tacheng Prefecture based on the last census are Kazakh, Hui, Mongolia, Uygur, Daur, Russian and Xibe. The majority of ethnic people in these counties are Kazakh, who, in 2012, represented over 76% of the ethnic minority population in the project city/counties. The poverty and social analysis found that the urban communities are ethnically mixed, and some aspects, such as cultural and language differences are maintained. Not all ethnic minority people speak Chinese, especially those middle-aged or older. The employment of the ethnic minorities in the project area does not concentrate on any particular area. Although traditionally they have been engaged in livestock breeding, and farming, however the farming doesn't provide enough jobs, and many people look for jobs in cities in order to increase their income. It doesn't apply to rural women, especially at 40 ages and more. They are overloaded with household and farming responsibilities. Traditionally, most of the local ethnic minority cultures discourage women from being outspoken in public. This aspect of traditional gender roles still affects the extent to which some ethnic minority women will actively participate in mixed public meeting. Urban life provides ethnic minorities with more opportunity to receive basic education, take job positions and participate in social activities in urban areas. According to the PSA, there are no barriers for them to live in urban areas with other peoples including Han. However, physical and cultural traits still distinguish the ethnic minority from the Han.

24. Accordingly, a number of measures have been developed in the project design to enable the effective involvement and participation of both ethnic minority men and women in planning and decision-making throughout the entire project cycle, especially with respect to those activities involving information dissemination, consultation, resettlement, prevention of communicable diseases, and benefits from temporary employment opportunities.

25. Ethnic Minority Development Plan (EMDP) has been developed which focuses on measures to facilitate the inclusion of ethnic minority people in all project activities and to protect them from any disadvantages that language barriers may create with respect to employment by project contractors. They also include measures to ensure that their customs and beliefs will be respected throughout implementation. Ethnic minorities will not be adversely affected, except for 224 households for resettlement in 12 communities/villages. Appropriate livelihood restoration measures associated with resettlement are incorporated in the resettlement plans. The project ethnic minority development plan endorsed by the TPG has been disclosed on February 2015 in both the Chinese and Kazakh languages to ethnic minority people targeted by the project. The ethnic minority development plan has also been uploaded on the ADB website. Semiannual internal and external monitoring of the ethnic minority development plan (EMDP) will be conducted, and monitoring reports will be forwarded directly to both the TPPMO and ADB until the project completion. Detailed monitoring and reporting arrangements are included in this document (Table IX.1) and the project agreement.³⁶

26. Key issues addressed in the EMDP ensure (i) that affected ethnic minority people are effectively involved in planning, implementation, and monitoring of the project; (ii) that impacts and risks potentially affecting ethnic minority people are mitigated; (iii) that ethnic minority people will benefit from such positive impacts as temporary job creation, and (iv) that Daur folk custom tourism development will be promoted. Prior to the commencement of any component, the city/county PMO

³⁶ Ethnic Minority Development Plan (accessible from the list of linked documents in Appendix 2).

will ensure that briefings on ADB's policy requirements with respect to ethnic minorities, and on the EMDP, are provided both for their own members, and for PIUs. The Ethnic and Religious Affairs Bureaus (ERABs) will assist in these briefings. Contractors, their supervisors, and workers will also be required to undergo briefings on local ethnic minority customs and beliefs, and to ensure that no offence to ethnic minority beliefs or customs occurs during construction.

27. The EMDP includes measures to mitigate potential social risks and to enhance project benefits, particularly for women and the poor. The project will support (i) the targets set for the contractors with respect to the employment of ethnic minorities (40%), including females; (ii) measures to facilitate the effective inclusion of ethnic minorities (40%) in project activities through the public participation and awareness, by removing potential language and cultural barriers to such participation; and (iii) ethnic tourism development through promoting Daur Nationality Folk Custom Museum activities; and (iv) measures to reduce the risk of unintentional offence being caused to ethnic minority communities during project implementation. The RPs provide for special training to assist ethnic minorities affected by land acquisition or resettlement to restore their livelihoods and living conditions. Implementation and monitoring of the EMDP is included in the loan assurances and design and monitoring framework.

28. The actions to be implemented under the EMDP are for the most part to be included as part of the project's administrative budget. Where local government agencies collaborate with actions in the EMDP, the local government administrative budgets will cover the costs of local government staffing and other related costs. Each PMO will nominate at least one person to be responsible for overseeing the implementation of the EMDP, the social development action plan, the gender action plan, and to coordinate the social monitoring. The ERABs in each county will provide support as necessary, as will the community offices, the county centers for disease control (CDC) and the Labor bureaus. A national social, gender and ethnic minorities specialist (8 person-months) will be hired under the project implementation consulting service to advise PMOs and PIUs on social, gender and ethnic minorities aspect of the project, and to provide trainings and support to "safeguard" focal point staff in the PMOs and PIUs. An external monitoring agency to provide independent monitoring and evaluation of the EMDP has been included in the overall project budget.

VIII. GENDER AND SOCIAL DIMENSIONS

A. Summary Poverty Reduction and Social Strategy

1. This section describes the required actions for gender and social dimensions, other than social safeguards. A social, poverty, and gender analysis was undertaken in accordance guidelines of the Asian Development Bank. The analysis collected information to assist in the design of the project by identifying the poor, examining causes of poverty, and recommending poverty reduction measures within the scope of the project.

2. **Key Issues.** XUAR is one of the 12 less-developed provinces and autonomous regions in the western PRC. The total population of XUAR was 22.65 million in 2012. The population of Tacheng City and Emin, Tuoli and Yumin counties was 469,000. The majority of ethnic people in these counties are Kazakh, who, in 2012, represented over 76% of the ethnic minority population in the project city/counties. The other ethnic groups are Hui, Uygur, Mongol, Daur, Russian, Khalkhas and Xibe. The poverty rate of XUAR and four project city/counties was 10.1 and 12.7%, respectively. By 2013, the official urban poverty incidence of Tacheng Prefecture was 10.4%, much higher than the average of both the PRC (2.8%) and XUAR (9.1%), while its rural poverty incidence was 8.3%, same as the average of the PRC (8.5%) and lower than that of XUAR (10.8%). However, the rural lowest living guarantee line of Tacheng Prefecture is only 83.1% of the national standard.³⁷ Both urban and rural poverty incidences of all four project city/counties,³⁸ were higher than the average of Tacheng Prefecture. Tuoli is one of the national key poverty counties and Yumin is one of Xinjiang key poverty counties. With an intensification of rural-urban migration, the percentage of urban population in Tacheng Prefecture has grown significantly in recent years up to 75% (2012) of total population. A considerable share of this new urban population resides in urban alleys without pavement, street lighting and other fundamental facilities, resulting in very difficult living conditions. A harsh natural environment, lack of investment in key urban infrastructure and a high demographic pressure have led to a high level of environmental degradation and are increasingly affecting the living standards of the urban populations who have to do without proper basic infrastructures and municipal services.

3. The direct beneficiaries of the project are all urban and some rural residents in the Project areas of Tacheng City and Emin, Tuoli and Yumin counties of Tacheng Prefecture accounting for 256,751 people, including about 34,533 poor (13.5% of the total population), 127,268 female residents (49.6% of the total population) and 120,183 ethnic minority people (46.8% of the total population). Public awareness programs and implementation of the transport safety and sanitation management will ensure the positive and long-term social benefits of the project. Construction activities will directly create 1,286 temporary jobs during the project implementation. The operation and maintenance of the project outputs will directly create an estimated 237 permanent jobs. Many temporary jobs will be unskilled, and contractors are required to employ local workers when possible. The Tacheng Prefecture PMO has set up employment targets for women (30%), poor population (15%) and ethnic minorities (40%). Project implementing units (PIU) will ensure that all PRC labor laws and core labor standards are respected. This will be closely monitored under the project performance monitoring system. Details on specific measures to ensure the poverty and social benefits are in the gender action plan, social development action plan in the PAM, and ethnic minority development plan.

³⁷ The rural low guaranty line of Tacheng Prefecture is annual CNY1,912 per capita, and the national standard is annual CNY2,300 per capita.

³⁸ The urban and rural poverty incidences are 11.8% and 12.2% of Tacheng City, 16.0% and 14.0% of Emin, 13.7% and 8.9% of Tuoli, and 12.5% and 13.5% of Yumin.

4. **Design Features.** The project will implement the following:

(i) **Gender Action Plan (GAP).** The gender action plan (GAP) will promote gender inclusion in the project activities and monitoring system. It will address gender mainstreaming in all project components and under training and capacity building. Implementation and monitoring of GAP is included in the loan assurances (see Table VIII-1).

(ii) **Social Development Action Plan (SDAP).** The social development action plan (SDAP) includes targets for employment for the poor and women on project works and subsequent operation and maintenance, protection of labor that will be employed on project works, mitigation of HIV/AIDS and consultation with and participation of community members throughout project implementation. In addition, it ensures that: (i) traffic safety awareness training programs, and (ii) solid waste reuse, reduce, and recycling programs; and (iii) public hearings for heating service and solid waste management are conducted for the local residents. Implementation and monitoring of the SDAP is included in the loan assurances (see Table VIII-2).

B. Gender and Development

5. The poverty and social analysis indicates that women strongly support the project and are unsatisfied with heating services, dirty solid waste collection environment, and poor mobility and access. Women are generally burdened with family and household responsibility, and are employed in low-paying jobs. Improving heating services by providing stable district heating will benefit women by relieving women's time in running household heating stoves and enjoying better living conditions. Improving community waste collection environment by community-based 3R waste sorting with 2 bin system will benefit women by reducing illness and associated time and cost burdens. Improving transportation by establishing road network and public transport, pedestrian and non-motorized transport will benefit women by increasing access, mobility and safety; reducing time and cost burdens, and caring family daily life efficiently. Women will benefit by employment priority during the project implementation and operation. Women's participation in public hearings, 3R waste sorting program design, public transport service and road safety program, and relevant public awareness activities will strengthen effective project implementation and sustainable development.

6. The project is categorized as Effective Gender Mainstreaming (EGM). A gender action plan (GAP) has been prepared for the project and gender specific parameters have been included in the project's design and monitoring framework to ensure that targets are met, women fully participate in the project and enjoy project benefits, and adverse effects upon women are avoided or mitigated. Tacheng Municipal Government (TMG) will work with the All China Women's Federation, municipal and county government agencies, contractors, and communities to facilitate the participation of women in paid work opportunities for physical works, and ensures that all labor laws of the People's Republic of China and core labor standards are respected. Project assurances include that (i) contractors be required to employ women with specific targets, (ii) implementation of GAP is ensured; and (iii) GAP targets and implementation will be monitored. The safeguard staff will have gender expertise and be responsible for ensuring the implementation of the GAP, and reporting on progress and achievements.

7. The project will ensure that: (i) priority will be given to women for employment, including a 30% target for project employment opportunities during the project construction phase, and 30% target for the project operation phase; (ii) women will not be discriminated on the basis of age or sex with respect to any job that they are capable of carrying out; (iii) sex disaggregated baseline

and survey data will be collected; and (iv) the GAP is implemented. Tacheng project management office with the assistance of the project management consulting firm are responsible for the implementation of the GAP, and reporting on progress and achievements of the project. TMG agreed to provide necessary costs for implementation of the GAP (Table 1) and SDAP (Table 2). All activities in GAP and SDAP are part of the capacity building component (e.g., training, consultation, awareness raising activities). Therefore, no additional cost is required specifically for the implementation of GAP.

8. The safeguard and social/gender staff will ensure gender disaggregated baseline and survey data will be collected; and implementation of GAP will be monitored. The project implementation consultant will include a social/gender specialist to mentor the social/safeguard staff as necessary, and to facilitate achievement of the Project's gender and development objectives. The GAP will be monitored semiannually and reported via the semiannual progress reports and during ADB review missions.

Table VIII-1: Gender Action Plan

Activity	Target and Indicators	Responsible Party	Budget	Time (year)
A. River Rehabilitation, Heating Pipeline and Stations, Water and Sewage Pipeline, and Roads – All Outputs				
1. Ensure women employment opportunity in the project construction and operations 2. Ensure work environment and conditions (any separate latrines, washing arrangements, women only dormitories, safety measures during the night, child care facilities etc.) on construction sites are conducive to the participation of women 3. Ensure equal pay for equal work 4. Provide separate HIV/AIDS/STIs and sexual harassment awareness for construction workers and communities 5. Provide public awareness drug use and human trafficking	Targets: <ul style="list-style-type: none"> ➤ Number and % of job positions for female laborers disaggregated by skilled/unskilled jobs. <i>Target:</i> 30% in project construction, and 30% in operations, including EM women (baseline for women construction workers was 0 in 2013) ➤ 100% work sites with facilities (i.e., latrines) designed particularly for female workers ➤ Wages paid to local women and local men by type of job ➤ Number and % of people receiving HIV/AIDS/STIs and sexual harassment awareness by sex and target groups. <i>Target:</i> 50% women for people in communities. ➤ Number and % of people participating in drug use and human trafficking awareness by sex and target groups. <i>Target:</i> 50% women for people in communities. 	PIUs, contractors, project operators Monitored by LB, TPMO and PMOs Supported by SDGS, ACWF, POCs, CCs and LB Contractors, CDPC	Salary included in project civil works cost and paid by contractors Salary included in operation cost and paid by project operators Cost for awareness included in SDAP	2015–2019 (whole construction period) 2017–ongoing (from operation of any subprojects)
B. Tacheng City Infrastructures, Municipal Services, District heating, MSW Management, and River Rehabilitation Component – Output 1				
6. Ensure women are involved in preparation and implementation of waste sorting at source 7. Public participation and consultation for waste sorting in selected communities	Targets: <ul style="list-style-type: none"> ➤ Establishment of community-based waste sorting groups in selected 20 communities with 50% female participation ➤ 50% female participants 	PMOs Supported by PIUs, CCs, Consultants	No cost required	2015–2019 (whole construction period)
C. Road and Related Infrastructure Facilities Outputs of Tacheng, Emin, Tuoli and Yumin – Outputs 1 to 4				
8. Ensure women participation in community consultation and decision making processes related to road design features (traffic signal, marks, pedestrian crossings, lighting, etc) 9. Ensure road safety programs focusing on non-motorized transport and pedestrian safety conducted for schools and residents	Targets: <ul style="list-style-type: none"> ➤ Number and % of primary and middle schools in DPA (39 primary and 20 middle schools) ➤ At least 70% local residents, including professional drivers (14,000 residents, Liaota New Area, affected villages of Emin, Tuoli and Yumin) 	PMOs, TPB Supported by PIU, CCs, EB, Consultants	Road safety awareness and campaign cost included in SDAP	2015–2019 (whole construction period)

Activity	Target and Indicators	Responsible Party	Budget	Time (year)
10. Integration of gender-responsive physical design features in roads and public transport services	Targets: <ul style="list-style-type: none"> ➤ At least 50% of female participants in road safety program and consultation on road design features and public transport services ➤ Number and type of completed gender-responsive design features that address safety risks and increase access for female users and children 			
D. Project Management and Capacity Development – Output 5				
11. Ensure a social development (gender and public awareness) consultant included in the loan implementation consultant's team to guide GAP/SDAP implementation and provide training 12. At least one staff member is allocated in each PMO and PIU (hereafter referred to as "safeguard staff") to be responsible for social/gender issues 13. Nominate at least one woman in community offices to act as a liaison person between residents and the PMO, and to attend all project-related public meetings, consultations, etc. to facilitate effective participation of all attendees 14. Sex-disaggregated data will be collected in the management information system to ensure monitoring, evaluation, and reporting of GAP and SDAP 15. Gender awareness training for PMOs and PIUs staff on (i) ADB gender policies; (ii) the GAP; and (iii) the benefits to be derived from gender mainstreaming in infrastructure and urban development projects 16. Orientation for staff from community offices on GAP implementation	Targets: <ul style="list-style-type: none"> ➤ 100% activities designed in GAP are implemented with instruction of the social/gender consultant and support of the staff ➤ At least one person appointed in each PMO/PIU, and community offices ➤ Social and gender indicators included in PPMS ➤ Monitoring reports on GAP and SDAP ➤ 100% staff of PMO and IAs receive the training ➤ 100% female staff appointed by each community receive training ➤ Number and % of women attending the trainings conducted on (i) project management, (ii) public financial management, (iii) solid waste management, and (iv) road safety and transport (30% female participants) 	TPPMO, PMOs Supported by SDGS, PMOs, PIUs, local government	Consultant cost included in SDAP Consultant cost included in the project budget	2015–2019 (whole project implementation period) 2015–2019

3R = reduce, reuse and recycle, ACWF = All China Women's Federation, ADB = Asian Development Bank, CB = Construction Bureau, CC = community committees, EB = education bureau, GAP = gender action plan, IA = implementing agency, LB = Labor Bureau, MSW = municipal solid waste, O&M = operation and maintenance, PIU = project implementing unit, PMO = project management office of project city/counties, POC = project operation company, SDAP = social development action plan, TPB = traffic police branch, TPMO = Tacheng Prefecture project management office

C. Social Development Action Plan

9. The social development action plan (SDAP) will facilitate continued consultation and participation of communities in the project, as well as ensure that labor rights and entitlements are observed and that the needs of poor households are considered. It sets out activities (i) for the mitigation of adverse impacts and risks identified in the course of the poverty and social analysis of the project, and (ii) to help maximize the benefits to be derived from the project. Its implementation will be monitored through the project performance management system, project progress reports, and ADB supervision missions.

10. To address the risk of spread of HIV/AIDS, drug use and human trafficking, the project requires (i) inclusion of clauses on HIV/AIDS and other communicable disease into contract bidding documents; (ii) conduct of public health and HIV/AIDS prevention education to the civil works contractors and LIP employees; (iii) establishment of health measures for construction workers (e.g., setting up a temporary infirmary, using local medical resources); and (iv) conduct of diverse publicity activities on HIV/AIDS, drug use and human trafficking (e.g., brochures, posters and picture albums) in local communities and at Baktu border port. These activities will be done with the assistance of the Center for Disease Prevention and Control. The PMOs and PIUs will monitor and report on progress.

11. The creation of new job opportunities is seen as a very important outcome of the project. To increase residents' income, the project will generate about 1,286 jobs (413 skilled and 873 unskilled jobs) at the construction and 237 full time jobs at the operation stages, 15% of them are first made available to the poor, 30% to women and 40% to ethnic minorities. It will be important that project employment opportunities for unskilled workers are advertised well in advance through media and notices in the public places most frequented by village and community residents. The project specific recommendations include:

- (i) In conjunction with the Department of Labor and Social Security, Poverty Alleviation and Development Office and/or ACWF, local PMOs ensure local advertising process is in place to assist, for contractors to recruit appropriate local labor.
- (ii) In some areas, local people employed by contractors may have had very little experience in the labor market of anything other than very short-term casual work. Measures to protect those local labors may be necessary, which requires all employees to have a written contract, and information about whom they can approach to help resolve labor disputes or misunderstandings.

D. Other Social Aspects

12. **Labor issues.** National labor standards will be followed. Civil works contracts will stipulate priorities to (i) employ local people for works; (ii) ensure equal opportunities for women and men; (iii) pay equal wages for work of equal value; (iv) pay women's wages directly to them; (v) not employ children or forced labor; and (vi) ensure that all contracted labor have written contracts. Specific targets for employment have been included in the GAP and SDAP. PMO is responsible for the implementation of the GAP and SDAP. The detailed SDAP is provided in Table VIII-2. PMO will monitor contractors' compliance with these project assurances in conjunction with the Departments of Labor and Social Security Bureau, and Civil Affairs.

13. Under the project implementation consulting service, a social and gender specialist will be engaged to support the TPPMO to implement, monitor, and report on progress of the GAP, SDAP, and other social aspects. The SDAP will be monitored semiannually and reported via semiannual progress reports.

Table VIII-2: Social Development Action Plan

Activity	Target and Indicators	Responsibility Party	Budget and Cost	Timing
A. Generating Job Opportunities to increase Residents' Income				
1. Employment during Project Construction (i) Ensure employment priority to local people in construction contracts with contractors (ii) Ensure training on labor law, job skills, safety, sanitation, etc to be provided by contractors	Targets: ➤ A total 1,286 temporary jobs will be created (about 129 technical and management position, 284 positions of skilled labors, and 873 positions for unskilled labors) ➤ At least 30% women, 40% ethnic minority and 15% poor for laborers in landscaping and civil work ➤ 100% contracted laborers get training Indicators: • No. of local people employed (disaggregated by sex, skilled/unskilled, ethnicity and income) • Wages (disaggregated by sex and ethnicity) paid to local people • No. of laborers trained (disaggregated by sex and ethnicity)	PMOs, PIUs, LSSB, SDGP, contractors, local street offices, and township governments	Included in project civil works cost and paid by contractors	2015–2019
2. Employment during Project Operation (i) Ensure employment priority to local people (ii) Ensure training workers on labor law, job skills, safety, sanitation, etc to be provided by PIUs	Targets: ➤ A total 237 full time jobs will be created (about 22 technical and management position, 80 positions of skilled labors, and 132 positions for unskilled labors) ➤ At least 30% women, 40% ethnic minority and 15% poor for laborers in new solid waste management, river landscaping and road maintenance ➤ 100% contracted laborers get training Indicators: • No. of local people employed (disaggregated by sex, skilled/unskilled, ethnicity and poverty status) • Wages (disaggregated by sex and ethnicity) paid to local people • No. of workers trained (disaggregated by sex and ethnicity)	PMOs, PIUs, SDGP, LSSB, POCs, local street offices, township governments, labor bureau, and construction bureau	Included in project operation cost and paid by POCs	2017–2019 and onwards
B. Mitigation Measures to Reduce Potential Risks				
3. Control and Prevention of HIV/AIDS/STI, other communicable diseases, drug use and human trafficking (i) Ensure local CDPC provides training to worksite health promoters (ii) Ensure to provide manuals, posters, and drawings - Provide public awareness on drug use and human trafficking)	Targets: ➤ 100% contractors establish connection with local CDPC ➤ 100% construction staff and workers get HIV/AIDS and STI counseling ➤ Number and % of people participating in drug use and human trafficking awareness by sex and target groups. : 50% women for people in communities Indicators: • No. of total contractors connected with local CDPC • No. of manuals, posters or drawing distributed at worker living area, local communities and Baktu border port	PIUs, contractors, public security bureau local CDPCs, and local governments	Awareness training costs for workers are included in contract costs Local CDPCs costs included in local health bureau budget at about RMB20,000	2015–2019

Activity	Target and Indicators	Responsibility Party	Budget and Cost	Timing
C. Enhancement Measures				
4. Strengthen Solid Waste Sorting at Source (i) Establish a management institution led by PMOs and responsibilities (ii) Public sanitation management campaign including 3R in schools (lecture or picture exhibition, handbooks, etc.) (iii) Hold public participation and consultation for waste sorting in selected communities (iv) Design and prepare household garbage 3R Instruction handbook (v) Provide trash bins and containers in selected communities	Targets: > Selected residence communities (20 in Liaota New area) in Tacheng City > 100% primary and middle schools in DPA (30 primary and 10 middle schools) > At least 50% female and 40% ethnic minority participants Indicators: • No. of handbook copies • No. of bins and containers • No. of schools and communities • No. of participants (disaggregated by sex, ethnicity, students, residents)	PMOs, SDGP, TESB, CCs, EB, and PIUs	Bins and containers are included in project construction cost Handbook and consulting service cost is included capacity building of the project at about RMB200,000	2015–2017
5. Strengthen Traffic Road Safety and Public Awareness (i) Traffic signals and marks on street (ii) Special traffic marks and calming measures on roads near schools (iii) Road safety campaign in schools (picture exhibition, etc.) (iv) Road safety campaign in DPA (picture exhibition, etc.)	Target: > 100% signal and marks on newly constructed roads and roads near school > 100% primary and middle schools in DPA (39 primary and 20 middle schools) > At least 70% local residents (14,000 residents, Liaota new area, affected villages of Emin, Tuoli and Yumin) > At least 50% female participants (rural and urban residents) Indicators: • No. of schools and communities • No. of participants (disaggregated by sex, ethnicity, students, residents)	EB and TPB, PIUs	New signal and mark cost is included in project construction cost Picture exhibition cost is included capacity building of the project at about RMB100,000	2015–2018
6. Strengthen Public Participation in Tariff Reform of Heating and Solid Waste (i) Participation of women, ethnic minority and low-income people in tariff hearings (ii) Provide subsidy for low-income inhabitants when heating and solid waste treatment prices are increased	Target: > At least 40% female, 50% ethnic minority and 25% low-income participants > 100% urban low-income inhabitants Indicators • No. of participants (disaggregated by sex, ethnicity and income) • No. of low-income people to receive subsidy	PMO, FB, PB		2015 onward

CDPC = centers for disease prevention and control, DPA = Direct Project Area, EB = Education Bureau, EMP = environment management plan, FB = Finance Bureau, LSSB = Labor and social security bureau; PADO = Poverty Alleviation and Development Office, PB = Price Bureau, PMOs = project management office of Tacheng City, Emin, Tuoli and Yumin counties, PIUs = Project Implementing Units, POCs = Project Operation Companies, STI = sexually transmitted infection, TESB = Tacheng municipal environment and sanitation bureau, TPB = traffic police branch, TPMO = Tacheng Prefecture project management office; TTB = Tacheng City tourism bureau

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION

Design and Monitoring Framework

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Impact Improved urban environment, living conditions, and border trade capacity in the project border cities and counties	By 2024 Average annual growth rates of gross domestic product per capita are maintained at 8% (from CNY36,550) (2012 data) and urban residents' average annual per capita disposable income is increased by 6% from CNY17,921 in Tacheng Prefecture (2012 data) Tacheng Prefecture border trade increases on average by 8% annually from CNY448 million (2012) Urban resident satisfaction rate with urban infrastructure and municipal services increased to 85% from 70% (2013)	Tacheng, Emin, Tuoli, Yumin, and XUAR statistical yearbooks Survey reports from Tacheng, Emin, Tuoli, and Yumin statistic bureaus	Assumptions Central and provincial governments continue investments and support to Tacheng Prefecture and Baktu Port development The city and county master plans of Tacheng, Emin, Tuoli, and Yumin are implemented effectively Regional cooperation with the neighboring countries is maintained and strengthened Risk Insufficient funds to support implementation of project cities and counties' master plans
Outcome Enhanced delivery and efficiency of municipal services in project border cities and counties	By 2020 (baseline 2014) Annual probability of seasonal flooding reduced to 2% (baseline: 10%) Protected area increased by 17.0 km ² in Tacheng City (baseline: 0 km ²) Road fatality rate per 10,000 persons reduced to 5.00% from 5.07% (XUAR average in 2014) in project cities and counties 20% of the MSW or 20 tons/day in Tacheng City are sorted and recycled for reuse (baseline: 5%) 82% of residents in Tacheng City have access to district heating (baseline: 0%) 91% of residents in Tacheng City are connected to sewerage network (baseline: 0%)	Independent professional verification of flood protection standards Tacheng, Emin, Tuoli, Yumin, and XUAR statistical yearbooks Survey reports from Tacheng, Emin, Tuoli, and Yumin statistic bureaus Project completion report PPMS Report	Assumptions Government commitment and support for environmentally sustainable urban development Risks Effective stakeholder participation and ownership are not developed

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Outputs 1. Improved urban infrastructures and municipal services in Tacheng City	By 2020 (baseline 2014: 0) 15.2 km of Kalangguer River rehabilitated and 37 ha of tree-planting completed 29.5 km of urban roads, six 20 m span bridges and 14.1 km of rehabilitated urban alleys put into use 47.7 km of water supply piping network, 48.8 km of sanitary sewer piping network and 40.6 km of primary hot water heating pipe network are operational Equipment and systems for MSW direct collection, sorting and disposal, are operational Upgraded monitoring, cleaning, and MSW equipment in Baktu Land Port put into use Establishment of community-based waste sorting groups in selected 20 communities with 50% of women participation	Project completion and semi-annual progress reports	Assumptions Project counterpart fund is appropriated timely The project is properly managed and monitored to ensure final implementation is completed in compliance with contract documents Risk Land acquisition approvals and implementation are delayed
2. Improved urban infrastructures and municipal services in Emin County	10.1 km of rehabilitated and newly constructed urban roads 7.7 km of water supply piping network 10 km sanitary sewer piping network are put into use	Project completion and progress reports	
3. Improved urban infrastructures and municipal services in Tuoli County	14.1 km of newly constructed urban road and upgraded maintenance equipment are put into use 30% of those employed in road maintenance are women	Project completion and progress reports	
4. Improved urban infrastructures and municipal services in Yumin County	9.7 km of newly constructed outer ring urban road and upgraded maintenance and MSW equipment are put into use.	Project completion and progress reports	
5. Improved and inclusive capacity and project management	Training, with 30% of attendees women, conducted on (i) project management; (ii) public financial management for project cities; (iii) municipal solid waste management assessment, planning, and training; (iv) road safety and transport planning assessment and training; and (v) border trade and logistic development	Project completion and progress reports	Assumption Project financing is provided on time Risk Recruitment of the loan implementation consultant is delayed

Activities with Milestones	Inputs
<p>1. Tacheng Subproject</p> <p>1.1 Preliminary design by Q2 2015</p> <p>1.2 Preparation of bidding documents by Q2 2015</p> <p>1.3 Construction drawing by Q3 2015</p> <p>1.4 Land acquisition and resettlement by Q3 2015</p> <p>1.5 Road and associated facilities by Q3 2015</p> <p>1.6 Upgrade of Baktu equipment by Q2 2016</p> <p>1.7 Alley rehabilitation by Q4 2015</p> <p>1.8 Rehabilitation of Kalangguer River by Q4 2015</p> <p>1.9 Improvements to MSW handling by Q4 2016</p> <p>2. Emin Subproject</p> <p>2.1 Preliminary design by Q2 2015</p> <p>2.2 Preparation of bidding documents by Q2 2015</p> <p>2.3 Construction drawings by Q2 2015</p> <p>2.4 Land acquisition and resettlement by Q2 2015</p> <p>2.5 Construction of roads by Q3 2015</p> <p>3. Tuoli Subproject</p> <p>3.1 Preliminary design by Q2 2015</p> <p>3.2 Preparation of bidding documents by Q2 2015</p> <p>3.3 Construction drawings by Q2 2015</p> <p>3.4 Land acquisition and resettlement by Q2 2015</p> <p>3.5 Construction of roads by Q4 2015</p> <p>3.6 Upgrade of maintenance equipment by Q4 2016</p> <p>4. Yumin Subproject</p> <p>4.1 Preliminary design by Q2 2015</p> <p>4.2 Preparation of bidding documents by Q2 2015</p> <p>4.3 Construction drawings by Q2 2015</p> <p>4.4 Land acquisition and resettlement by Q2 2015</p> <p>4.5 Construction of roads by Q3 2015</p> <p>4.6 Maintenance and MSW equipment by Q4 2016</p> <p>5. Capacity development and institutional arrangement</p> <p>5.1 Recruitment and mobilization of consultants by Q3 2015</p> <p>5.2 Establishment of a project management system for executing and implementing agencies, and project implementation units by Q3 2015</p> <p>5.3 Establishment of PPMS for executing and implementing agencies by Q3 2015</p> <p>5.4 Establishment of resettlement plan monitoring system by Q4 2015</p> <p>5.5 Capacity building by Q2 2021</p> <p>5.6 Implementation of EMP, GAP, EMDP, resettlement plans, and SDAP by Q2 2021</p> <p>5.7 Monitoring of implementation of EMP, GAP, EMDP, resettlement plans, and SDAP until Q2 2021</p>	<p>Loan</p> <p>ADB: \$150.0 million</p> <p>Counterpart funding:</p> <p>Tacheng Municipal Government: \$112.73 million</p> <p>Emin County Government: 21.61 million</p> <p>Tuoli County Government: 10.65 million</p> <p>Yumin County Government: 7.88 million</p>

ADB = Asian Development Bank, EA = executing agency, EMDP = ethnic minority development plan, EMP = environment management plan, GAP = gender action plan, GDP = gross domestic product, ha = hectare, IA = implementing agency, km = kilometer, km² = square kilometer, m³/d = cubic meter per day, O&M = operation and maintenance, PIU = project implementation unit, PPMS = project performance management system, RP = resettlement plan, SDAP = social development action plan.

Source: Asian Development Bank.

1. Monitoring

(a) Project Performance Monitoring

1. The project performance management system (PPMS) indicators, their relevance, and monitoring practicalities will be discussed with the executing agency, implementing agencies and project beneficiaries during project implementation. Disaggregated baseline data for output and outcome indicators gathered during project processing will be updated and reported semiannually through the semiannual progress reports of the Tacheng Prefecture project management office (PMO) and after each ADB review mission. These semiannual reports will provide information necessary to update ADB's project performance reporting system.³⁹ At the start of project implementation, the PMO and implementing agencies, with the project implementation consulting services, will develop integrated PPMS procedures to generate data systematically on the inputs and outputs of the components, as well as the indicators to be used to measure the project's impact and outcome taking into account the components' scope. The PMO will be responsible for monitoring and reporting on project performance. The basis for performance monitoring will be the design and monitoring framework (DMF), which identifies performance targets for the impact, outcomes, and outputs of the project. By collecting data from the sources identified in the DMF, the PMO will be able to report on an annual basis the performance of the project. Specific reporting requirements will be set out in the agreement between ADB and the Government. The PMO will collect the data, calculate the indicators, analyze the results, and prepare a brief report describing the extent to which the project is generating the intended outputs and outcomes, as well as the overall impact on the project municipalities. The relevance and practicability of data collection for indicators was confirmed with the PMO and the implementing agencies. Meanwhile, the agreed socioeconomic and environmental indicators to be used will be further enhanced to measure project impacts. The PMO and the implementing agencies agreed and confirmed that they will (i) refine and integrate the PPMS framework at the start of project implementation; (ii) confirm that targets are achievable; (iii) develop recording, monitoring, and reporting arrangements; and (iv) establish systems and procedures no later than 6 months after project inception.

(b) Compliance Monitoring

2. The executing agency, with assistance of four city/county governments, project implementing units (PIUs) and the project management consulting service, will conduct compliance monitoring, submit reports and information to ADB concerning the use of the loan proceeds, project implementation, PIUs' project implementation performance, and compliance of loan and project covenants. These reports will include (i) semiannual progress reports on project implementation; and (ii) a project completion report, which should be submitted no later than 3 months after the completion of the project facilities. The compliance status of loan and project covenants will be reported and assessed through the semiannual progress report. ADB review missions will verify these statuses.

(c) Safeguards Monitoring

(i) Environment

3. **Internal monitoring and reporting by construction supervision companies.** During construction, construction supervision companies (CSC) will be responsible for conducting internal

³⁹ <http://www.adb.org/documents/handbook-project-implementation>.

EMP monitoring and supervision in accordance with the monitoring plan defined in the EMP. The results will be reported through the CSCs' reports to the PIUs.

4. **Physical monitoring by environmental monitoring stations.** The PIUs will contract the local environmental monitoring stations (EMS) to conduct physical monitoring in accordance with the monitoring plan. Monitoring will be conducted during construction and operation period, until a project completion report (PCR) is issued. Quarterly monitoring reports will be prepared by the EMSs and submitted to the relevant PIU.

5. **Environmental management plan implementation monitoring and progress reporting.** The CS-ES will review project progress and compliance with the EMP based on field visits, and the review of the environmental impact monitoring conducted by the EMSs. The findings of the CS-ES will be reported to ADB through the annual EMP monitoring and progress reports. The reports will include (i) progress made in EMP implementation, (ii) overall effectiveness of the EMP implementation (including public and occupational health and safety), (iii) environmental monitoring and compliance, (iv) institutional strengthening and training, (v) public consultation (including GRM), and (vi) any problems encountered during construction and operation, and the relevant corrective actions undertaken. The CS-ES will help the LPPMO prepare the reports and submit the English report to ADB for appraisal and disclosure.

6. **Project completion environmental audits.** Within 3 months after each subproject completion, or no later than one year with permission of the TPEPB, environmental acceptance monitoring and audit reports of each subproject completion shall be (i) prepared by a licensed environmental monitoring institute in accordance with the PRC Guideline on Project Completion Environmental Audit (2001), (ii) reviewed for approval of the official commencement of individual subproject operation by environmental authorities, and (iii) finally reported to ADB through the annual EMP monitoring and progress reporting process.

(ii) Resettlement

7. Internal and external monitoring of resettlement plan implementation will be conducted. Monitoring methodologies are specified in the resettlement plans. Each implementing agency will carry out internal supervision and monitoring and report to TPPMO/ADB semiannually to ensure compliance with the provisions of the resettlement plans. The TPPMO and implementing agencies have agreed to a set of supervision milestones with ADB, to ensure timely and effective implementation of resettlement activities. An independent agency under contract to each implementing agency will implement external monitoring and evaluation. Semiannual external monitoring reports during resettlement activities and annual evaluation reports thereafter will be forwarded directly to both the TPPMO and ADB. The TPPMO shall prepare and submit a comprehensive resettlement completion report to ADB at the completion of the project.

(iii) Ethnic Minority Development Plan

8. Internal and external monitoring of the ethnic minority development plan (EMDP) will be conducted. Monitoring and reporting methodologies are specified in the EMDP. Each implementing agency will carry out internal supervision and monitoring and report to TPPMO/ADB semiannually to ensure compliance with the provisions of the EMDP, as well as timely and effective implementation of the EMDP. An independent agency under contract to each implementing agency will implement external monitoring and evaluation. Semiannual external monitoring and evaluation reports will be forwarded directly to both the TPPMO and ADB until the project completion. The TPPMO will prepare and submit an EMDP completion report to ADB within three months of physical completion.

(iv) Gender and Social Action Plans

9. Monitoring of the gender action plan (GAP) and social development action plan (SDAP) will be incorporated into the PPMS. Clear targets and indicators have been established and some indicators, such as those on employment, are also captured in the DMF. Assistance will be provided for the executing agency and implementing agencies by the resettlement and social development consultant who will help to set up effective monitoring systems and work with the focal points in the executing agency and implementing agencies to ensure implementation, monitoring and reporting of the GAP and SDAP. The GAP and SDAP will be monitored semiannually and reported via the semiannual progress reports and during ADB review missions.

(v) Evaluation

10. ADB, executing agency and implementing agencies will undertake a semiannual review mission to evaluate the progress of project implementation. ADB, executing agency and implementing agencies will undertake a comprehensive midterm review two years after the start of project implementation to have a detailed evaluation of the scope, implementation arrangements, resettlement, achievement of scheduled targets, and progress on the agenda for policy reform and capacity building measures. Feedback from the PPMS activities will be analyzed. Within three months of physical completion of the project, the TPPMO will submit a project completion report to ADB.⁴⁰

(vi) Reporting

11. The PMO will provide ADB with (i) semiannual progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports, including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for the next 12 months; and (iii) a project completion report within three months of physical completion of the project.

12. The executing agency and implementing agencies have agreed on the following reporting commitments: (i) submission of semiannual progress reports during project implementation; (ii) submission of periodic reports on the progress of safeguards monitoring, i.e., resettlement activities (semiannual), environmental monitoring (annual), EMDP, GAP and SDAP implementation (semiannual); (iii) submission of project completion report 3 months after completion of the project; and (iv) submission of audited project accounts and financial statements 6 months after the end of fiscal year. PPMS data will be incorporated in the semiannual progress reports.

13. The following table summarizes the key reporting requirements during project implementation.

⁴⁰ Project completion report format available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>

Table IX.1 Key Reporting Requirements

Report	Reference	Timing of Reporting
Project performance management system Develop comprehensive project performance management system procedures Reporting of baseline and progress data	Project Agreement, schedule, paragraphs	No later than 6 months after loan effectiveness Semiannual, included in the semiannual project progress reports
Semiannual project progress reports Audited project accounts and financial statements auditor's report (including auditor's opinion on the use of the imprest account and statement of expenditures)	Project Agreement, schedule, article	Semiannual, within 1 month after the end of each quarterly Not later than 6 months after the closure of fiscal year (end of June)
Resettlement monitoring: Internal monitoring reports for the executing and implementing agencies Land acquisition and resettlement phase—external monitoring report Post-land acquisition and resettlement phase—external evaluation report Resettlement completion report	Project Agreement, schedule, paragraphs	Included in the semiannual project progress reports Semiannual until activities are completed Annual reports for 2 years after the resettlement activities Within 3 months after project completion
EMDP Internal monitoring reports for the executing and implementing agencies External monitoring report EMDP completion report	Project Agreement, schedule, paragraphs	Included in the semiannual project progress reports Semiannual until activities are completed Within 3 months after project completion
Other social monitoring: Reporting on gender action plan implementation Reporting on social development action plan implementation	Project Agreement, schedule, paragraphs	Semiannual, included in the semiannual project progress reports Semiannual, included the semiannual project progress reports
Environment safeguards monitoring: Construction phase – Reporting on EMP implementation progress Construction phase – Environmental monitoring report Operations Phase—Environmental monitoring report Project completion report	Project Agreement, schedule, paragraphs Project Agreement, schedule, article	Included in the semiannual project progress reports Quarterly (EMS to PIUs and TPPMO), Annual (to ADB for disclosure) Annual, until a project completion report is issued Not later than 3 months after the physical completion of the project

(vii) Stakeholder Communication Strategy

14. Project information will be communicated through public consultation, information disclosure mechanism in ADB's and TPG's website, meetings, interviews, focus group discussions, and community consultation meetings, in accordance with ADB's requirements of information disclosure policy.

15. **Environment.** Meaningful consultation for each subproject has been conducted during feasibility study and domestic environmental impact assessments in accordance with the PRC Interim Guideline on Public Consultation in EIA (2006) and ADB's Safeguard Policy Statement (2009). A public consultation and communication plan is defined in the environmental management plan (**Table EMP-9**). Affected people will be consulted and informed through formal questionnaire surveys, site visits and informal interviews by the PIUs (through their environmental management unit), with support of the loan implementation consultant (CS-ES). Public meetings will be organized by the PIUs in the project city/towns prior to mid-term mission to present and discuss EMP implementation progress, solicit community opinions and concerns, and agree on required corrective actions. The loan implementation consultant will, prior to project completion report, organize surveys in the project city/town to assess community satisfaction with project implementation, project outputs, and EMP implementation performance. The results will be documented in the project completion report (PCR). The project's environmental information will be disclosed by the TPEPB and ADB as follows: (i) the project IEE is disclosed at www.adb.org; (ii) the Chinese EIAs were disclosed on the website of the Tacheng Prefecture environment protection bureau (TPEPB); and (iii) the annual environment monitoring reports will be disclosed at www.adb.org.

16. **Involuntary resettlement.** All of the affected households and towns/townships, leaders and town and township and district governments will be involved in the project impact and social-economic survey. Through meetings, interviews, focus group discussions, public consultation workshops, and community consultation meetings, local representatives have participated in the planning and concerns have been integrated into the four resettlement plans. Before implementation, the PMO and the implementing agencies will further discuss and consult with the affected persons' representatives the impacts on every town/township and the detailed compensation plan to ensure affected persons' interests are protected and to provide employment opportunities for the affected persons' livelihoods as a result of project implementation. The PMO and PIU in each implementing agency will disclose the resettlement plan in the offices as well as the community offices and to affected people in the local language. The resettlement plans will also be posted on the ADB website. Resettlement information booklets were distributed to affected households during project preparation. This guideline contains information such as the affected project area, proposed land acquisition and relocation implementation progress and procedure, compensation standards for land acquisition, relocation assistance, and livelihood restoration strategy. The respective component implementing units will establish project resettlement units for supervision of implementation, continued public consultation, monitoring of progress, and response to grievances. The grievance redress procedures will be established in early 2015 and explanations have been included in the resettlement information booklets.

17. **Ethnic Minority, Gender and Social Development Action Plan.** Consultations with communities have taken place and will continue at different points in the preparation and implementation of the GAP and SDAP within the project, and will be designed not only to inform people about the component or specific activities related to its preparation and implementation, but also to enable people in the community to ask questions, make suggestions, state preferences, and express concerns. Special attention will be paid to the participation of women, ethnic minorities and any other vulnerable groups, such as the poor. Consultation and public awareness will include, but not be limited to solid waste management, transport safety program, public hearings on tariff increase, communicable diseases, drug use and human trafficking. EMDP, GAP and SDAP will be monitored and reported semiannually and verified by external resettlement and social monitoring consultants.

18. Disclosure of social and environmental monitoring reports will be undertaken during project implementation.

X. ANTICORRUPTION POLICY

1. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.⁴¹ All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.⁴²

2. To support these efforts, relevant provisions are included in the loan agreement, and the bidding documents for the project. ADB's Anticorruption Policy (1998, as amended to date) will be explained to and discussed with the executing agency and/or implementing agencies and their project management offices (PMOs), and project implementing units (PIUs). Consistent with its commitment to good governance, accountability and transparency, ADB reserves the right to investigate any alleged corrupt, fraudulent, collusive, or coercive practices relating to the project. To address the risks on governance and corruption related to procurement of civil works, relevant provisions of ADB's Anticorruption Policy will be included in the loan agreement and the bidding documents for the project. In particular, all contracts financed by ADB in connection with the project will include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and/or implementing agencies, PIUs and all contractors, suppliers, consultants, and other service providers as they relate to the project. The executing agency has indicated its commitment to promote good governance and establish a corruption-free environment under the project. Further to this, a number of good governance and anticorruption provisions have been included in the loan and project agreements.

3. The executing agency and/or implementing agencies will, and with their PMOs and PIUs to, comply with ADB's Anticorruption Policy (1998, amended from time to time). The executing agency agrees (i) that ADB reserves the right to investigate any alleged corrupt, fraudulent, collusive, or coercive practices relating to the project; and (ii) to cooperate fully with, and to require contractors and suppliers 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.

4. The executing agency will (i) conduct periodic inspections on the contractors' activities related to fund withdrawals and settlements; and (ii) ensure that all contracts financed by ADB in connection with the project include relevant provisions of ADB's Anticorruption Policy (1998, as amended to date) in all bidding documents for the project specifying the right of ADB to audit and examine the records and accounts of MO and all the contractors, suppliers, consultants and other service providers as they relate to the project.

5. The executing agency and/or implementing agencies will also (i) involve the agencies responsible for oversight of each PIU in bidding and construction to enhance construction quality control and supervise effective work; (ii) introduce a dual-signing system in which each works contract winner also signs an anticorruption agreement with the employer; (iii) periodically inspect the contractors' activities related to fund withdrawals and settlements; (iv) require the project management consulting service to support PMOs and the PIUs to ensure good governance, accountability, and transparency in project operations; and (v) in consultation with relevant ministries at the central level, update rules and regulations on corporate governance and anticorruption to enhance the transparency of the operations of executing agency and/or implementing agencies, and the PIUs.

⁴¹ Available at: <http://www.adb.org/sites/default/files/pub/1998/anticorruption.pdf>.

⁴² ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>.

XI. ACCOUNTABILITY MECHANISM

1. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, they should approach the Accountability Mechanism.⁴³

⁴³ For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>.

XII. RECORD OF PAM CHANGES

1. The PAM is a living document and is subject to change after ADB Board approval of the project's report and recommendation of the President. It is concise yet informative, providing checklists of all activities related to project implementation along with the necessary procedures for the project management office's to effectively implement and monitor the project.

No.	Changes/Updates	Date	Remarks
1	PAM initial draft agreed	30 Nov 2014	Agreed during the loan fact-finding mission
2	Updated PAM agreed	19–20 May 2015	Agreed during the loan negotiation

PAM = project administration manual.

APPENDIXES

1. ENVIRONMENTAL MANAGEMENT PLAN

APPENDIX - Environmental Management Plan

PRC: Xinjiang Tacheng Border City and Counties Development Project

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A. Objectives

1. This Environmental Management Plan (EMP) was prepared for the proposed Xinjiang Tacheng Border City and Counties Development Project (the project) in conjunction with the domestic Environmental Impact Assessment (EIA) Institute¹, the design institute² and Tacheng Prefecture Project Management Office (TPPMO) based on the five domestic EIS reports, six tabular EIA reports, the feasibility study reports (FSRs), and the Water & Soil Conservation Plan for Tacheng municipality component, as well as the master plans of four project city/counties, and other project documents. The EMP covers all project implementation phases, including design & pre-construction, construction, and operation.

2. The EMP defines appropriate mitigation measures for the anticipated environmental impacts, and defines the institutional responsibilities and mechanisms to monitor and ensure the compliance with PRC's environmental laws, standards and regulations, and ADB's SPS. The EMP specifies (i) objectives; (ii) implementing organization and responsibilities; (iii) mitigation measures; (iv) inspection, monitoring, and reporting arrangements; (v) training and institutional strengthening; (v) future public consultation; and (vi) a feedback and adjustment mechanism.

3. In the design stage the TPPMO will pass the EMP to the design institute for incorporating mitigation measures into the detailed designs. The EMP will be updated at the end of the detailed design, as needed. To ensure that bidders will respond to the EMP's provisions in their proposals/tendering documents, the TPPMO, the local PMOs (LPMO) and the project implementation units (PIUs) will prepare and provide the following specification clauses for incorporation into all the bidding documents: (i) a list of environmental management requirements to be budgeted by the bidders in their proposals, (ii) environmental clauses for contractual terms and conditions, and (iii) component EISs and tabular EIAs, and project IEE including updated EMP for compliance.

B. Organizations and Their Responsibilities for Implementation of Project and EMP

4. Tacheng Prefecture Government (TPG) is the executive agency (EA) of the project. At the prefecture level, TPG has established the Tacheng Prefecture Project Leading Group (TPPLG) to provide policy guidance and coordination, and has also established TPPMO to manage, supervise and coordinate overall project implementation. The four project city/county governments (Tacheng, Emin, Tuoli and Yumin) are the implementing agencies (IAs), and they have already established LPMOs to manage and coordinate overall implementation of the project components on behalf of respective IAs in their respective city/counties. The PIUs have been also set up for physical implementation of their project components and subcomponents. The EMP implementation arrangements and responsibilities of the governmental organizations are summarized in **Table EMP-1**.

¹ Xinjiang Branch of Shenyang Municipal Engineering Design and Research Institute

² Xinjiang Branch of China Academy of eco-geography Science

Table EMP-1: Institutional Responsibilities for EMP implementation

No.	Agency	Environmental Management Roles and Responsibilities
1	Executing Agency (EA) – Tacheng Prefecture Government (TPG)	Overall policy and direction control. Responsible for project coordination with four project city/county governments, liaison with ADB and XUAR government agencies, financial management and administration.
2	Tacheng Prefecture Project Leading Group (TPPLG)	<p>Headed by the Vice Governor and consisting of TPDRG, TPEPB, TPHCD, TPFGB, and governments of the four project city/counties, responsible for:</p> <ul style="list-style-type: none"> • Provide overall project direction and any required policy guidance; • Oversee the preparation and implementation of the project; • Provide overall guidance to the project; • Support cross-agency policy dialogue; and • Review project progress and provide strategic advice to support effective project implementation.
3	Tacheng Prefecture Project Management Office (TPPMO)	<p>Responsible for day-to-day operation of the project on behalf of the EA, responsible for supervision and overall management to ensure smooth implementation of the Project:</p> <ul style="list-style-type: none"> • Responsible for all day-to-day management work during the project preparation and implementation periods; • Assign one staff as the safeguard officer (PMO-SO), in charge to supervise the effective implementation of the EMP; • Establishment of a prefecture level Grievance Redress Mechanism (GRM) with a Project Complaints Coordinating Unit (PCCU); • Communicate and coordinate with ADB for project management and implementation; and report the project implementation progress and compliance monitoring results to ADB; • Submit bidding documents, bid evaluation reports and other necessary documentations to ADB for necessary approval; • Procurement of project management consulting services (PMCS), including an environmental specialist (CS-ES) to assist in supervision, tracking and reporting on EMP implementation of all subprojects; and • Consolidate environmental monitoring reports prepared by PIUs and local environmental monitoring stations (EMSs) in periodic environment monitoring reports in a format acceptable to ADB, and submit them to ADB for disclosure.
4	Implementing Agencies (IAs) –Governments of project city/counties	Primarily responsible for project implementation for project components in their jurisdiction, including finance and administration, technical and procurement matters, monitoring and evaluation, and safeguard compliance.

No.	Agency	Environmental Management Roles and Responsibilities
5	Local Project Management Offices (LPMOs), established under IAs³	<p>They are the agencies on behalf of the IAs, responsible for supervision and coordination of their project components during the project implementation periods:</p> <ul style="list-style-type: none"> • Supervise the PIUs for proper management of the project component and subcomponents during the project implementation; • Communicate and coordinate with TPPMO and other government agencies for project management and implementation; • On behalf of the IAs, submit bidding documents, bid evaluation reports and other necessary documentations to TPPMO and ADB for necessary approval; • Submit required annual audit reports and financial statements of project accounting to TPPMO and ADB.
6	Project Implementing Units (PIU)⁴	<p>They are the agencies for day-to-day operation of the project under the supervision of the LPMOs, responsible for ensuring successful implementation of their own project components and subcomponents:</p> <ul style="list-style-type: none"> • Establishment of environment management units (EMU), in charge to supervise the effective implementation of the EMP; • Contracting of local environmental monitoring station (EMS) to conduct environmental compliance monitoring (air, water and noise); • Incorporation of EMP clauses into bidding documents (with support of bidding agency and CS-ES); • Tendering contractors and equipment with assistance of the international tendering agency and CS-ES; • Supervision and monitoring of the EMP implementation and reporting to the LPMOs and TPPMO (with support of CS-ES); • Administer and monitor contractors and suppliers' performance; • Contracting of construction supervision companies (CSC) to conduct daily environmental inspection and supervision and; • Participation in capacity building and training programs.
7	Operators of Project Facility: (i) Tacheng Municipal Facility Management Bureau; (ii) E'min HCB; (iii) Tuoli HCB; and (iv) Yumin HCB	<p>Ensuring successful ongoing operation and maintenance of the relevant project components:</p> <ul style="list-style-type: none"> • Commissioning of the constructed facilities; and • O&M of completed facilities, including environmental management, monitoring and reporting responsibilities.

³ The LPMOs of Tacheng, Emin, Tuoli and Yumin were established under the local DRCs.

⁴ There are three PIUs in Tachen City, the PIU for implementation of roads, bridges, water supply, sewer, district heating, Baktu equipment and MSW improvement in Liaota District is Tacheng DRC; the PIU for implementation of Kalanguer River Rehabilitation Component is Tacheng Municipal WRB, and the PIU to implement alley rehabilitation and MSW improvement in the existing urban area is municipal Housing and Construction Bureaus (HCB); the PIUs for the components of Emin, Tuoli and Yumin are local HCBs.

No.	Agency	Environmental Management Roles and Responsibilities
8	Civil Works Contractors	<p>Responsible for implementation of mitigation measures during construction phase:</p> <ul style="list-style-type: none"> • Prepare proposals that respond to the environmental clauses for contractual terms and conditions defined in Appendix 2, and environmental management requirements defined in the EMP; • assign a person responsible for environment, health, and safety; • develop and implement site-EMPs, to include the following plans: (a) Site drainage and soil erosion protection; (b) Spill control and management; (c) Environmental, health and safety management plan (EHSMP); (d) Surface water protection; (e) Temporary traffic management; (f) Construction site access control. These plans will be submitted to the PIUs' EMUs for approval, with support of the LEPBs; • Act as local entry point for the GRM; and • Participation in capacity building and training programs.

Source: Project Administration Manual (PAM), August 2014

5. The **TPPMO** will have the overall responsibility delegated by Tacheng Prefecture DRC for supervising the implementation of the EMP, coordinating the environment grievance redress mechanism (GRM) and reporting to ADB. The TPPMO will assign one safeguards officer (TPPMO-SO) in charge to supervise the effective implementation of the EMP.

6. **Environment staff within TPPMO, LPMOs and PIUs.** TPPMO is responsible for overall management of project preparation and implementation activities, coordinate implementation of environmental safeguards issues, inspect and monitor project progress and project impacts, and facilitate the communication and coordination with ADB. For environment safeguards, TPPMO will have the overall responsibility delegated by the EA for supervising the implementation of the EMP, establish a prefecture level GRM (PPCU) for coordinating and supervising the 6 PPCUs established in the PIUs and reporting to ADB. TPPMO will assign one safeguards officer (PMO-SO) and one environmental supervisor (PMO-ES) in charge to supervise the effective implementation of the EMP.

7. The LPMOs will supervise and coordinate implementation of the project components in their respective jurisdictions. Their main functions are: (1) supervise the PIUs for proper management of the project component and subcomponents; (ii) communicate and coordinate with TPPMO and other government agencies for project management; (iii) on behalf of the IAs, submit documents to TPPMO and ADB for necessary approval, including bidding documents, bid evaluation reports, annual audit reports and financial statements of project accounting, environmental monitoring reports and other necessary documentations.

8. Each PIU will establish an environmental management unit (EMU), which shall consist of at least one environment specialist. The EMU will take charge of: (i) coordinating the implementation of the EMP and developing implementation details; (ii) supervising the implementation of mitigation measures during project construction and operation (the PIU will hire construction supervision companies, CSCs); (iii) ensuring that environmental management, monitoring, and mitigation measures are incorporated into bidding documents, construction contracts and operation management plans; (iv) organizing periodic environmental monitoring in compliance with the

approved monitoring plan (Table EMP-7 and Table EMP-8); (v) submitting quarterly EMP progress reports to the LPMOs and TPPMO for consolidation and submission to ADB; (vi) act as local entry points to the GRM; and (vii) responding to any unforeseen adverse impact beyond those mentioned in the domestic EISs and TEIAs, the project IEE and the EMP.

9. Environment Specialist under Project Management Consulting Services (CS-ES). Environment specialists will be hired under the project management consulting services (CS-ES). The CS-ES will advise the TPPMO, LPMOs, PIUs, contractors and CSCs on all aspects of environmental management and monitoring for the project. The CS-ES will (i) assist in updating the EMP and environmental monitoring program, as needed; (ii) supervise the implementation of the mitigation measures specified in the EMP; (iii) on behalf of the EA, prepare the annual environment monitoring reports in English and submit them to ADB; (iv) provide training to the TPPMO, LPMOs, PIUs, CSCs, and contractors on the PRC's environmental laws, regulations and policies, ADB SPS, World Bank Environmental, Health and Safety (EHS) Guideline, EMP implementation, and GRM in accordance with the training plan defined in **Table EMP-9**; (v) identify any environment-related implementation issues, and propose necessary corrective actions. The CS-ES will also provide support to LPMOs and PIUs in organizing public meetings in the project city/towns prior to mid-term mission to present and discuss EMP implementation progress, solicit community opinions and concerns, and agree on required corrective actions. Prior to project completion report, the CS-ES will organize surveys in the project city/town to assess community satisfaction with project implementation, project outputs, and EMP implementation performance, and document the results in the project completion report (PCR).

10. Construction Contractors, Construction Supervision Companies (CSCs). Construction contractors will be responsible for implementing relevant mitigation measures during construction under the supervision of the CSCs and PIUs. Contractors will develop site-specific EMPs based on the project EMP. CSCs will be contracted by the PIUs. The CSCs will be responsible for supervising construction progress and quality, and EMP implementation on construction sites. Each CSC will assign one engineer on each construction site to: (i) supervise the contractor's EMP implementation performance; and (ii) prepare the contractor's environmental management performance section in monthly project progress reports submitted to the PIUs.

11. Environmental Monitoring Stations (EMS). The PIUs will contract the local environment monitoring stations at project city/county level to conduct periodic environmental quality monitoring during construction and operation in accordance with the monitoring plan (**Table EMP-7 and EMP-8**).

C. Potential Impacts and Mitigation Measures

12. Table EMP-2 to EMP-4 list the anticipated impacts and issues of the project components in the project city/counties during design and pre-construction, construction and operation phases as identified in the domestic EISs, tabular EIAs and this IEE, as well as corresponding mitigation measures defined to minimize those impacts. The mitigation measures will be incorporated into detailed design, bidding documents, construction contracts and operational management manuals, which will be implemented by design institutes (during detailed design), contractors under the supervision of CSCs and PIUs with technical support from the CS-ES (during construction), and PIUs (during operation). The effectiveness of these measures will be evaluated based on environmental inspections and monitoring to determine whether they should be continued, improved or adjusted.

Table EMP-2: Potential Impacts and Mitigation Measures during Preconstruction and Construction Phases

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
A. Design & Preconstruction Phases										
Detail design stage	Institutional strengthening for EMP Implementation & supervision	(1) Each PIU to establish an EMU, consisting of at least one environment specialist; (2) TPPMO to engage CS-ES and PMO-SO; (3) LPMO to engage IA-ES; and (4) Provide training to all environmental staff for EMP implementation and supervision.	LPMOs, PIUs, TPPMO	ADB, TPEPB	-	-	-	-	-	Counterpart funds (EA, IAs, PIUs)
	Updating EMP	(5) Update mitigation measures defined in this EMP based on final detailed design, as needed, submit to ADB for appraisal and disclosure; (6) In case of major change of project location (or additional physical component) that may cause substantial environmental impacts or involve additional affected people, IAs and/or PIUs should contract an EIA institute to conduct additional environmental assessment and also public consultation. The revised EIA reports should be submitted to relevant EPB and ADB for approval and disclosure. To determine whether the change is minor or major, TPPMO should consult with ADB.	PIUs, EMUs, TPPMO-SO	LEPBs, ADB, CS-ES, TPPMO	-	-	-	-	-	Counterpart funds (IAs, PIUs)
	Confirmation of land acquisition and resettlement	(7) Update LARP after detail design	DIs, PIUs	LBCA ⁶ , LBLM ⁶	-	-	-	-		Included in resettlement budget
Construction Preparation	Environmental monitoring stations	(8) Prior to construction, engage EMS ⁷ . (9) Prepare a detailed environmental monitoring plan in accordance to monitoring plan defined in this EMP, to be agreed upon at loan inception stage, and reflected in the first environment monitoring report.	PIUs, EMSs	TPPMO, ADB, CS-ES	15	10	4	2	2	Counterpart funds (PIUs)
	Bidding and contract documents	(10) Prepare environment section in the terms of reference for bidders;	DIs, LPMOs, PIUs	CS-ES, TPPMO	-	-	-	-		Included in detail design and

⁵ Local Bureau of Civil Affairs⁶ Local Bureau of Land Management⁷ Local Environmental Monitoring Station, which is the only licensed environmental monitoring units

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
		(11) Prepare environmental contract clauses for contractors, namely the special conditions (reference to clauses in Appendix 2, EMP and monitoring plan).								PMCS contracts
	EMP ⁸ training	(12) PMCS , CS-ES, or invited environment specialists and/or officials from the XUAR EPD and Tacheng Prefecture EPB provide training on construction environmental management and implementation and supervision of environmental mitigation measures to contractors and CSCs, in accordance with tentative training plan defined in this EMP.	PMCS, CS-ES	TPPMO, LPMOs, ADB	3.0	2.0	1.5	1.5	1.0	Included in the PMCS budget
	Establish operational GRM	(13) Establish a Project Public Complaints Unit (PPCU) at TPPMO; provide training for PPCU members and GRM access points; (14) Disclose the PPCU's phone number, fax, address, and email to the public on City EPB's website and on information boards at each construction site.	TPPMO, LPMOs, PIUs	TPPMO, CS-ES, ADB	-	-	-	-		Included in TPPMO's operation budget
	Land acquisition and resettlement (before construction)	(15) Ensure that all resettlement activities are reasonably completed before construction starts on any component.	PIUs, LLAROs ⁹ ,	TPPMO, LPMOs, LLBs, LBCAs	-	-	-	-		Included in the local Land Acquisition and Resettlement budget
Contractor Obligation prior to construction	Construction site EMP	(16) Each civil contractor shall prepare a Construction-site EMP, based on this EMP, which shall include the following plans: (a) Site drainage and soil erosion protection; (b) Spill control and management; (c) Environmental, health and safety management plan (EHSMP); (d) Surface water protection; (e) Temporary traffic management; (f) Construction site access control. These plans are further elaborated below (construction phase).	Contractors, CSC	EMUs, PIUs, CS-ES	-	-	-	-		Included in civil work contracts
Subtotal					18	12	5.5	3.5	3.0	
Total					42.0 (67,742 USD)					

⁸ Environmental management⁹ Local Land Acquisition and Resettlement Office

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
B. Construction Phase										

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
Soil & Geology	Soil erosion, soil contamination	(1)Develop and implement a Site Drainage and Soil Erosion Management Plan that responds to the WSECP approved by Tacheng WRB, and the project EISs. Measures shall include the following: - During road and bridge constructions, maintain slope stability at cut faces by implementing erosion protection measures such as terraces and silt barriers; - Stabilize all cut slopes, embankments, and other erosion-prone working areas while works are going on; - All earthwork disturbance areas must be stabilized within 30 days after earthworks have ceased at the sites; - Minimize active open excavation areas during trenching activities and use appropriate compaction techniques for pipe trenches construction; - Provide temporary detention ponds or containment to control silt runoff; - Construct intercepting ditches and drains to prevent runoff entering construction sites, and divert runoff from sites to existing drainage; - Strip and stockpile topsoil, cover or seed temporary soil stockpiles; - Limit construction and material handling during periods of rains and high winds; - Properly slope or re-vegetate disturbed surfaces, such as compacted pipeline trenches and cut banks; - Protect slopes on both sides of bridges and culverts; - Plant grass to protect slopes, especially on sandy soil and terraced slopes; and - Appropriately set up temporary construction camps and storage areas to minimize the land area required and impact on soil erosion;	Contractor, CSCs	PIUs, TPPMO, LEPBs, LWRBs, CS-ES	350	200	50	40	30	Included in construction contract

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
		(2) Implement the following measures to avoid soil contamination: - Properly store petroleum products, hazardous materials and wastes on impermeable surfaces in secured and covered areas, and use the best management practice to avoid soil contamination; - Remove all construction wastes from the site to approved waste disposal sites timely; - Establish emergency preparedness and response plan (Spill Management Plan); and - Provide spill cleanup measures and equipment at each construction site and require contractors to conduct training in emergency spill response procedures.								
	Earthwork, spoil disposal site management and restoration	(3) Transport surplus earth to the approved spoil disposal sites (as defined in the WSECP) with proper covering; (4) Conduct environmental restoration for all spoil sits after completion of the disposal	Contractors CSCs	LPMOs, PIUs, LEPBs, CS-ES, TPPMO	20.0	5.0	10.0	8.0	5.0	Included in construction contract
Surface water quality and hydrology	Impact on river hydrology by bridge construction	(5) River bridge pier construction shall be conducted during the dry season; construction during the high-flow season (April to June) will be prohibited; (6) Foundation treatment and pier grouting come first in pier construction; and (7) Provide adequate opening for flood flow before the high-flow season.	Contractors CSCs	PIUs, CS-ES, LEPBs, LWRB, TPPMO	30.0	30.0	15.0	8.0	5.0	Included in construction contract
	Impact on river hydrology by river rehabilitation works	(8) Set cofferdam diversion along the Kalangguer River; and (9) River bank constructions shall be conducted during the dry season, and construction during the high-flow season (April to June) shall be prohibited.								
	Surface and groundwater pollution	(10) During bridge and river bank constructions, pump slurry to shore and properly dispose cutting materials;								

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
		(11) Install sediment traps along the river to minimize sediment runoff into the river during earthwork; (12) Develop contingency plans for control of oil and other dangerous substances (Spill Management Plan); (13) Collect wastewater from construction activities in sedimentation tanks, retention ponds, and filter tanks to remove silts and oil; (14) Equip all areas where construction equipment is being washed with water collection basins and sediment traps; (15) Station fuel storage, maintenance shop and vehicle cleaning areas at least 500 m away from the nearest water body; (16) Locate storage facilities for fuels, oil, and other hazardous materials within secured areas on impermeable surfaces, and provided with bunds and cleanup installations; (17) Ensure that fuel suppliers are properly licensed. They shall follow proper protocol for transferring fuel and the PRC standard of JT3145-88 (Transportation, Loading and Unloading of Dangerous or Harmful Goods); (18) Locate construction worker camps at least 500 m from ecologically sensitive receivers, such as rivers, and natural water bodies, etc.; (19) Install eco-toilets and septic treatment and disposal systems at construction camps along with proper maintenance protocols; (20) The discharge of construction wastewater to the rivers and channels will be prohibited; (21) Conduct water quality monitoring in the rivers and the natural ponds during construction in accordance with the EMP monitoring program to identify and confirm results of the impact assessment and effectiveness of adopted mitigation measures.								
Ambient Air	Dust generated by construction	(22) Spray water daily on construction sites and earth/material handling routes where fugitive	Contractors, CSCs	PIUs, LEPBs, CS-ES,	25.0	5.0	18.0	15.0	12.0	Included in construction

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
	activities	dust is being generated; (23) Pay particular attention to dust suppression near sensitive receptors such as schools, hospitals and residential areas; and (24) Cover materials during truck transportation, in particular, the fine material, to avoid spillage or dust generation.		TPPMO-SO						contract
	Air emission from asphalt pavement, and vehicles and machinery	(25) Locate asphalt plants and mixers as far away as possible (at least 500 m downwind) from the nearest residential areas, and other sensitive receptors; (26) Store petroleum or other harmful materials in appropriate places and covering to minimize emission; (27) Maintain vehicles and construction machinery regularly to a high standard of efficient running and fuel-burning to ensure emissions from vehicle and construction machineries are in compliance with the PRC standards of GB18352-2005, GB17691-2005, GB11340-2005, GB2847-2005, and GB18285-2005; and (28) Initiate a regular inspection and certification system for vehicle and equipment emission.								

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
Noise	Noise generated from construction activities	<div><div>(29) Ensure that noise levels from source of equipment and machinery conform to the PRC standard of GB12523-90, and properly maintain construction vehicles and machineries to minimize noise;</div><div>(30) Apply noise reduction devices or methods where piling equipment (for Emin River bridge construction) is operating within 300 m of sensitive sites such as villages, mosques and residential areas;</div><div>(31) Locate sites for rock crushing, concrete-mixing, and similar activities at least 1 km away from sensitive areas;</div><div>(32) To reduce noise at night, prohibit the operation of machinery generating high levels of noise, such as piling, and movement of heavy vehicles along urban and village roads between 20:00 and 06:00 the next day in accordance with PRC regulations;</div><div>(33) Take special caution at construction sites that are close to such sensitive sites as schools, mosques and office buildings. When construction activities are unavoidable during the school seasons, the use of heavy equipment will be restricted to weekends and non-class hours.</div><div>(34) Place temporary hoardings or noise barriers around noise sources during construction, if necessary;</div><div>(35) Monitor noise at sensitive areas at regular intervals (refer to the monitoring plan in the EMP). If noise standards are exceeded, equipment and construction conditions shall be checked, and mitigation measures shall be implemented to rectify the situation; and</div><div>(36) Conduct monthly interviews with residents living adjacent to construction sites to identify community complaints about noise, and seek suggestions from community members to reduce noise annoyance. Community suggestions will be used to adjust work hours of noise-generating machinery.</div></div>	ContractorsCSCs	PIUs, CS-ES, LEPBs, PMO-SO	60.0	27.0	20.0	15.0	10.0	Included in construction contract

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
Vibration	Vibration generated by piling	(37) Piling and compaction operations at night and on Fridays (if near mosques) are prohibited. (38) Ensure compliance with relevant PRC standard on urban area environmental vibration to mitigate risk of damages to buildings and residences.	Contractors CSCs	PIUs, CS-ES, LEPB, TPPMO-SO	'	'	'	'	'	Included in construction contract
Solid Waste	Solid waste generated by construction activities and from workers' camps	(39) Provide appropriate waste collection and storage containers at locations away from surface water or sensitive receivers; (40) Reach agreement with municipal waste collection services prior to construction for regular collection of waste; (41) Properly remove and dispose of any significant residual materials, wastes and contaminated soils that remain on the ground timely during and after construction to designated sites. Any planned paving or vegetating of the area shall be done as soon as the materials are removed to protect and stabilize the soil; (42) Burning of waste is strictly prohibited. (43) Provide sufficient garbage bins at strategic locations and ensure that they are protected from birds and vermin, and emptied regularly (using the municipal solid waste collection systems).	Contractors CSCs	PIUs, CS-ES, LPMOs, LEPB, TPPMO-SO	80.0	30.0	20.0	15.0	10.0	Included in construction contract

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
Flora and Fauna	Protection of vegetation and fauna	<div><div>(44) Properly plant trees, bushes and grass in accordance with the FSR</div><div>(45) Protect existing vegetation nearby construction sites;</div><div>(46) Properly backfill, compact and re-vegetate pipeline trenches after pipeline installation;</div><div>(47) Protect existing trees and grassland during road, bridge, river rehabilitation and pipeline constructions; where a tree has to be removed or an area of grassland disturbed, replant trees and re-vegetate the area immediately after construction;</div><div>(48) Remove trees or shrubs only as a last resort if they impinge directly on permanent works or approved necessary temporary works;</div><div>(49) In compliance with the PRC's forestry law, undertake compensatory planting of an equivalent or larger area of affected trees and vegetation; and</div><div>(50) Use native plant species of local provenance for replanting; and</div><div>(51) Take special precautions during and after construction for the protection of small animals, reptiles, and birds of common species that live in the vegetated roadside and riverside areas, medians, inner areas of bridges, and green areas.</div></div>	Contractor, CSCs	PIUs, CS-ES, LPMOs, LFB ¹⁰ , PMO-SO	2,210.0 ¹¹	3,410.0 ¹²	474.9	2,015.9	302.8	Included in construction contract

¹⁰ Local Forestry Bureau.

¹¹ Including the roadside landscaping areas

¹² Including the riverside reforestation

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
Impact on physical cultural resources	Cultural resources	(52) Establish chance-find procedures for physical cultural resources; and (53) If a new site is unearthed, work shall be stopped immediately and local BCR and the LPMO promptly notified, and construction will resume only after thorough investigation and with the permission of the appropriate authority.	Contractor, CSCs	PIUs, CS-ES, LBCR ¹³ ,	6.0	5.0	5.0	3.0	2.0	Included in construction contract
Socio-economic impacts	Community health and safety	(54) Consult with local communities re: temporary impacts during construction (cutting off services, etc); (55) Develop and implement temporary traffic control and operation plan . The plan shall include provisions for diverting or scheduling construction traffic to avoid morning and afternoon peak traffic hours, regulating traffic at road crossings, selecting transport routes to reduce disturbance to regular traffic, reinstating roads, and opening them to traffic as soon as the construction is completed; (56) Conduct underground facilities survey and protection to avoid disturbances to utility services, where needed. (57) Disclose information to residents and businesses in advance through media of the construction activities, given the dates and duration of expected disruption; (58) Ensure that construction sites are well protected by placing clear signs at construction sites in view of the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc., and raising awareness on safety issues. All sites shall be secured, disabling access by members of the public								

¹³ Local Bureau of Cultural Relics

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
		through appropriate fencing whenever appropriate.								
	Occupational health and safety	(59) Each civil work contractor shall develop and implement an environmental, health and safety management plan (EHSMP) which shall include the following provisions: - Provide a clean and sufficient supply of fresh water, for construction sites and for all camps, offices and workshops; - Provide an adequate number of latrines and other sanitary arrangements at construction sites and work camps, and ensure that they are cleaned and maintained in a hygienic state; - Garbage receptacles at construction site and camps will be setup, which will be periodically cleared to prevent outbreak of diseases; - Provide personal protection equipment, such as safety boots, helmets, gloves, protective clothing, goggles, and ear protection, in accordance with relevant health and safety regulations for workers; - Ensure that occupational health and safety matters are given a high degree of publicity to all persons regularly or occasionally on each construction site. Posters will be displayed prominently in relevant areas of the site; and - Train all construction workers in basic sanitation, general health and safety matters, and on the specific hazards of their work. Implement SITs/HIV/AIDS and other communicable diseases awareness and prevention program to target the local community and construction workers.	Contractors	CSCs, LLBs, EPBs, CS-ES	50.0	20.0	15.0	10.0	8.0	Included in construction contract

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget of Component (10,000 CNY)					Source of Funds
			Who Implements	Who Supervise	Tacheng		E'min Infra	Tuoli. Infra	Yumin Infra	
					Infra.	River				
Subtotal					2831	3,732	627	2,129	384	
TOTAL					9,705.6 (15.6542 million USD)					

Source: Domestic EISs and FSRs, and PPTA Consultant's Report.

Table EMP-3: Potential Impacts and Mitigation Measures during Operation for Urban Infrastructure Components

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget (10,000 CNY)				Source of Funds	Performance Indicator
			Who Implement	Who Supervise	Tacheng	E'min	Tuoli	Yumin		
Ambient Air	Excessive vehicle emissions, odor emissions at solid waste collection stations, affecting ambient air quality	(1) Conduct periodic examination of emission of vehicle exhaust pollutants for each vehicle, including public buses, in accordance with PRC regulation (such as GB18352.3-2005); (2) Refuse registration to vehicles with excessive emissions; (3) Maintain solid waste collection facilities to minimize odors; and (4) Conduct air quality monitoring (through EMS) in accordance with the monitoring program until a PCR is issued.	HCBs, TMBs ¹⁴ , EMSs ¹⁵	LEPBs, LPMO, TPPMO	5.0/a ¹⁶	2.0/a	1.5/a	1.0/a	HCBs' operation budget	NO ₂ , CO, PM10, (GB 3095-2012 after 01/01/2016)
Acoustic Environment	Traffic noise along project roads	(5) Proper maintenance of trees planted along the proposed roadsides after construction.	HCBs	PIUs, CS-ES, CSCs	30.0/a	10.0/a	8.0/a	5.0/a	Included in civil works contracts	Tree No. and vegetation area (m ²).

¹⁴ Traffic Management Bureau

¹⁵ Environmental Monitoring Station

¹⁶ Include the monitoring cost only; the costs for vehicles emission are paid by drivers.

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget (10,000 CNY)				Source of Funds	Performance Indicator
			Who Implement	Who Supervise	Tacheng	E'min	Tuoli	Yumin		
		(6) Conduct ambient noise monitoring, determine whether mitigation measures will be required for sites where noise levels are expected to exceed by more than 3 dB(A);	HCBs, EMSs	LEPBs, LPMO	5.0/a	2.0/a	1.5/a	1.0/a	HCBs operation and maintenance budget	GB 3096-2008 Class II
Surface & Ground Water	Pollution from stormwater and snow melt runoffs and solid waste	(7) Routinely collect and properly dispose litter and debris from sidewalks, driveways, and parking lots, especially near rivers and channels; (8) Install litter traps along waterways (small floating mesh traps attached to one bank) and regularly empty these; (9) Clean the roadside catch basins before rainy season to avoid surface water pollution by storm water runoff flushing debris and silt; (10) Place garbage bins and containers along the road networks; (11) Maintain storm-water retention facilities along the roads nearby the rivers.	HCBs, EMSs	LEPBs, LWRBs	60.0/a	20.0/a	10.0/a	8.0/a	HCBs operation budget	SS, COD, Petroleum (GB3838-2002), and (GB/T14848-1993)
	Public toilets, sewers, wastewater collection and treatment	(12) Regularly inspect and maintain public toilets and sewers; (13) Review performance of linked WWTPs in the project city/counties (treatment performance, compliance with effluent standards), mitigate performance problems using process control measures.	HCBs, LEMSs, PIUs	LEPBs, LPMO	4.0/a	2.0/a	1.0/a	0.8/a	HCBs' operation budget	National WWTP Effluent quality standard of GB 18918-2002)
Health and Safety	Traffic safety	(14) Implementation of road safety and transport planning assessment and training: a) conduct traffic safety audit for the project city/counties; b) - identify safety concerns in traffic safety feature implementation, traffic safety education and enforcement needs; and c) develop program for public safety education and safety awareness.	PMCSL IS, LTMBs	LEPBs, LTMB, PSB ¹⁷	5.0/a	3.0/a	2.0/a	1.5/a	Capacity building budget of the loan	Training course satisfaction survey.
	Spills of dangerous goods	(15) Ensure that all trucks carrying hazardous materials are marked according to PRC norms; (16) Enforce traffic controls, and set speed limits for trucks carrying hazardous material; (17) Prepare a rapid spill response and clean up protocol so that in the event of a spill the appropriate people and equipment are quickly notified and action can be	HCBs, LTMBs	LEPBs, PSB, CS-ES	5.0/a	3.0/a	2.0/a	1.5/a	HCBs' operation budget	Presence of rapid spill response protocol

¹⁷ Public Security Bureau

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget (10,000 CNY)				Source of Funds	Performance Indicator
			Who Implement	Who Supervise	Tacheng	E'min	Tuoli	Yumin		
		taken.								
Flora	Vegetation	(18) Routinely inspect and properly maintain all roadside trees, slope stabilization sites, and landscaping vegetation. Keep at least 98% of survival rate.	HCBs	LEPBs, LFBs	10.0/a	5.0/a	2.0/a	1.5/a	HCBs' operation and maintenance budget	Survival rate of roadside vegetation (%)
Soil	Soil erosion	(19) Inspect and properly maintain erosion protection measures including seeded or stabilized slopes, drainage structures and retaining walls at least twice during the first year of the roads' operation to ensure that they are maintained properly and are functioning as designed.	HCBs	LEPBs, WRBs	4.0/a	2.5/a	2.0/a	1.0/a	HCBs' operation and maintenance budget	Marks (0-100) given by inspection expert team. from LWRBs
Natural Hazard	Reduced flood discharge capacity as result of accumulation of debris.	(20) Clean culverts, bridge piers, and drainage pipes before high runoff season;	HCBs	LEPBs, WRBs	8.0/a	5.0/a	3.0/a	2.0/a	HCBs' operation and maintenance budget	Annual EMR
District heating network operation	Backwash effluent of HESs	(21) Build and maintain equalization and sedimentation tanks (50m ³) in each HES for pH adjustment and sedimentation (SS≤400mg/L) before discharging backwash effluent is into the municipal sewer; (22) Regularly clean the sedimentation tank, dispose of accumulated sludge and sediments in the municipal landfill;	Heating supply comp.	LEPBs	10.0/a	-	-	-	Heating supply company's operation budget	Annual EMR
	Noise from HESs operation	(23) Build soundproof covers and walls at HES to reduce noise; (24) Regularly maintain the circulating pumps and keep the equipment in good condition;	Heating supply comp.	LEPBs	5.0/a	-	-	-	Heating supply company's operation budget	Annual EMR
	Deconstruction or retrofit of heat-only boilers, family stoves	(25) Dismantle small boilers and dispose of domestic stoves in compliance with standards for occupational health and safety and disposal of demolition wastes, including the Law on the Prevention and Control of Environmental Pollution by Solid Waste of PRC (2004); Occupational Disease Control Act (2002); and Work Safety Act (2002); (26) If asbestos or asbestos containing material (ACM) prove to be present, adhere to international guidelines	Heating supply comp.	LEPBs	N.N.	-	-	-	Heating supply company's operation budget	Annual EMR

Item	Potential Impacts and Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget (10,000 CNY)				Source of Funds	Performance Indicator
			Who Implement	Who Supervise	Tacheng	E'min	Tuoli	Yumin		
		for the demolishing and disposal of asbestos and ACM (World Bank EHS Good Practice Note on Asbestos: Occupational and Community Health Issues; WHO Policy and Guidelines; and ISO/FDIS 16000-7: Indoor air—Part 7: Sampling strategy for determination of airborne asbestos fiber concentrations.); (27) Reuse/recycle deconstruction wastes generated during demolition (e.g. iron, bricks, windows, doors, steel bars etc.); and (28) Dispose non-recyclable demolition debris the Tacheng municipal solid waste landfill.								
Subtotal		Recurrent costs			147/a	44.5/a	33.0/a	11.6/a		
TOTAL					236.1/a (356,613USD/a)					

Source: the domestic EIS Reports, SEPPs, and PPTA Consultant

Table EMP-4: Potential Impacts and Mitigation Measures during Operation for Kalangguer River Rehabilitation and Flood Control Components

Item	Potential Impacts/Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget (10,000 CNY)	Source of Funds	Performance Indicator
			Who Implement	Who Supervise			
Kalangguer River Embankment	Embankment stability	(1) Inspect all river embankment stabilization works for physical integrity. If signs of failure are discovered, a repair program will be implemented immediately;	WRB	LEPB, LPMO, TPPMO	10.0/a	Included in the WRB's operation cost	Project completion report
Routine maintenance of river embankment	Impaired flood flow capacity as a result of obstructions and waste accumulation, Pollution and blockage of river due to solid waste and wastewater discharge	(2) No artificial structures are allowed to be constructed to impound water restricting free flow of flood waters; (3) Regularly maintain the rivers and their embankments, including removal of garbage and vegetation; (4) Periodically remove solid waste and debris, and dispose in municipal landfill; (5) Inspect surrounding areas and ensure that no	WRB	LEPB, LPMO, TPPMO	40.0/a	Included in the WRB's operation cost	Visual inspection, satisfaction survey (prior to project completion mission)

Item	Potential Impacts/Issues	Mitigation Measures and/or Safeguards	Responsibility		Budget (10,000 CNY)	Source of Funds	Performance Indicator
			Who Implement	Who Supervise			
		wastewater is discharged to the rivers without prior treatment.					
Routine maintenance of riverside vegetation and landscaping area	Impaired flood flow capacity as a result of poor vegetation maintenance	(6) Daily maintenance: manage the vegetation including pruning, weeding and replacement of dead or dying trees and shrubs; (7) Pest control: The guiding principle will be prevention first followed by integrated treatment, no pesticide to avoid water pollution; and (8) Fire prevention: Measures for prevention of fire will be put in place.	WRB, PIU	IAs, LEPB, LPMO	50.0/a	Included in the WRBs' operation cost	Visual inspection, satisfaction survey (prior to project completion mission)
Flood protection over design flood levels	Flood monitoring and early warning	(9) Maintenance of flood early warning system including a coordination center, rainfall/snow melt monitoring stations, and flood warning broadcasting stations. (10) Early warning system to include entire area of impact, including downstream of the urban area.	PIU, WRB	LPMO, TPPMO, ADB	10.0/a	Included in project procurement plan	Project completion report
Kalangguer Reservoir	Minimum ecological flow	(11) Ensure that the Kalangguer River receives a minimum flow at all times in accordance with the Kalangguer reservoir operating rule on minimum flow provision as defined in the reservoir EIA approved by the Ministry of Environmental Protection in 2002.	WRB	LPMO, TPPMO	1.0/a	WRB operational budget	Annual EMR (first year operation)
TOTAL		Recurrent cost			111.0/a (179,032 USD)		

Source of the budget: the domestic EIA Reports, SEPPs, draft project administration manual (PAM)

D. Environmental Monitoring, Inspection and Reporting

13. The project monitoring program focuses on the environment within the project's areas of influence in the four project city/counties. A detailed environmental monitoring program is shown in **Table EMP-6**, which covers the scope of monitoring, monitoring parameters, time and frequency, implementing and supervising agencies, and estimated costs. The monitoring shall comply with the methodology provided in the relevant national environmental monitoring standards. Other associated standards to be followed are the national environmental quality standards of air, water and noise, and the pollutant discharge standards as well.

14. **Internal monitoring/supervision and reporting by CSCs.** During construction, CSCs will be responsible for conducting internal environmental inspections in accordance with the monitoring plan¹⁸ (**Table EMP-6**). Supervision results will be reported through the CSCs' monthly reports to the PIUs.

15. **Environmental impact monitoring by local EMSs.** The PIUs will contract the local EMSs to conduct environmental monitoring in accordance with the monitoring program (**Table EMP-6 and EMP-7**). A detailed cost breakdown will be provided by the local EMS when the environmental monitoring program is updated at the start of each component implementation. Monitoring will be conducted during construction and operation period, until a project completion report is issued. Quarterly monitoring reports will be prepared by the EMSs and submitted to PIUs, local EPBs, and TPPMO.

16. **EMP implementation compliance monitoring (Table EMP-5).** The CS-ES will review project progress and compliance with the EMP based on field visits, and the review of the environmental monitoring conducted by the EMSs. The findings of the CS-ES will be reported to ADB through the annual environment monitoring reports. The reports will include (i) progress made in EMP implementation, (ii) overall effectiveness of the EMP implementation (including community and occupational health and safety), (iii) environmental monitoring and compliance, (iv) institutional strengthening and training, (v) public consultation (including GRM), and (vi) any problems encountered during construction and operation, and the relevant corrective actions undertaken. The CS-ES will help TPPMO prepare the reports and submit the English report to ADB for appraisal and disclosure.

17. **Project completion environmental audits.** Within three months after each project component completion, or no later than one year with permission of the local EPBs, environmental acceptance monitoring and audit reports of each subproject completion shall be (i) prepared by a licensed environmental monitoring institute in accordance with the PRC Guideline on Project Completion Environmental Audit (2001), (ii) reviewed for approval of the official commencement of individual subproject operation by environmental authorities, and (iii) finally reported to ADB through the annual EMP monitoring and progress reporting process. The environmental audits can be conducted together with the overall project completion acceptance inspection.

¹⁸ The CSC will assign at least an environmental engineer on each of the construction sites.

Table EMP-5: Environmental Reporting Plan

Report	From	To	Frequency of Reporting
A. Construction Phase			
Construction progress reports	CSCs	PIUs	Monthly
Environmental impact monitoring reports	Local EMSs	PIUs, local EPBs, TPPMO	Quarterly
Environment monitoring reports	TPPMO, PIUs	ADB	Semiannually (summary, through semiannual project progress reports)
	TPPMO	ADB	Annually (stand-alone report for disclosure)
Environmental acceptance monitoring and audit reports	Licensed institute	local EPBs, TPPMO, IAs, PIUs, ADB	Within three month after component completion
B. Operation Phase			
Environment monitoring reports	TPPMO	ADB	Annually (until a PCR is issued)

Source: Domestic EIAs and PPTA Consultants

Table EMP-6: Environmental Monitoring Program (For Urban Infrastructure Components)

Subject	Parameter	Location	Frequency	Who Implements	Who Supervises	Estimated Cost (RMB 10,000)			
						Tacheng	Emin	Tuoli	Yumin
Construction Phase									
Surface water	SS, NH3-N, oil, CODcr, total coliforms	3 monitoring points per river crossing in Tacheng and Emin: At each project bridge, 50m upstream, and 100m downstream	Impact monitoring: Once per day, for 2 consecutive days, 2 times per year during construction season and high runoff (April, September)	LEMS	PIUs, LEPBs	9.0	5.0	2.0	1.5
Air	Inspection of dust mitigation measures (water spraying, cover transport vehicles, etc.); and maintenance of vehicles and construction equipment	Visual inspection at all construction sites.	Internal Monitoring: daily	CSCs	PIUs	Included in the construction supervision contract			
			External Monitoring: At least four times per year	CS-ES	TPPMO, LEPBs	Included in CS-ES contracts			
	TSP, PM ₁₀ ¹⁹ , NOx	At all construction sites (at least one point upwind, two points downwind) and sensitive receivers nearby ²⁰ .	Impact Monitoring: Twice per day for 3 consecutive days, 4 times per year during constructions.	LEMSs	PIUs, LPMOs, LEPBs	10.0	5.0	3.0	2.0
Noise	LAeq	At the boundary of all construction sites and sensitive receivers nearby ²⁰ .	Impact Monitoring: Twice per day (once in day time and once at night time) for 2 consecutive days, 4 times per year during construction.	LEMSs	LPMOs, EPBs	5.0	4.0	3.0	2.0
Solid Waste	Garbage from work-camps and construction waste at construction sites	Visual inspection at all construction sites and work-camps	Internal Monitoring: Daily	CSCs	PIUs	Included in the construction supervision contract			
			External Monitoring: Twice per year	CS-ES	LEPBs, TPPMO, ADB	Included in CS-ES contracts			
	Deconstruction of small heat-only boilers and	Visual inspection of deconstruction activities. (health and	Internal Monitoring: During deconstruction activities	HCB	Tacheng EPB, CS-ES	Included in HCB budget			

¹⁹ Tacheng EMS have no capacity to monitor PM_{2.5} in 2014-2015.

²⁰ See Chapter IV-sensitive receivers within project area of influence

Subject	Parameter	Location	Frequency	Who Implements	Who Supervises	Estimated Cost (RMB 10,000)			
						Tacheng	Emin	Tuoli	Yumin
	household stoves	safety, waste disposal).							
Soil erosion, vegetation	Soil erosion intensity, re-vegetation	Visual inspection at construction sites and spoil site	Internal Monitoring: check after rain events	CSCs	PIUs, LPMOs	Included in the construction supervision contract			
			External Monitoring: twice per year, and once after completion of construction	LSMI ²¹ , CS-ES	LEPBs, TPPMO, ADB	10.0	15.0	10.0	6.0
	Slope stability, topsoil stockpile and rehabilitation of construction sites	Visual inspection of all subgrade slopes and retaining walls, bridges, culverts	Internal Monitoring: At least four times per year	CSCs	PIUs	Included in the construction supervision contract			
			External Monitoring: At least once per construction season, and once after completion of construction.	CS-ES	LEPBs, EA, ADB	Included in CS-ES contracts			
	Compensatory plantings and re-vegetation spoil disposal sites and construction sites	Visual inspection at all disposal sites and temporary occupied lands	Internal Monitoring: At least four times per year	CSCs	PIUs	Included in the construction supervision contract			
			External Monitoring: At least once per construction season, and once after completion of construction.	CS-ES	LEPBs, EA, ADB	Included in CS-ES contracts			
Construction site health and safety	Work camp hygiene and safety, availability of clean water, construction site access control, and emergency response plans	Inspection at all construction sites and work-camps	Internal Monitoring: Monthly	CSCs	LPMOs, PIUs	Included in the construction supervision contract			
			External Monitoring: At least once per construction season, and once after completion of construction.	CS-ES	LPHB ²²	Included in CS-ES contract			
Subtotal						34.0	29.0	18.0	11.5
Total						92.5 (149,200 USD)			
Operation Phase									
Noise	LAeq	All sensitive receivers ²³ along the roads and nearby bridges; all HESs in Tacheng	Twice per day (once in day time and once at night time) for 2 consecutive days, twice per year	LEMSs	LPMOs, LEPBs	3.5/a	2.0/a	1.5/a	1.0/a
Air	SO2, NOx, PM10,	All sensitive receivers	Twice per day for 3	LEMSs	LPMOs,	5.0/a	3.0/a	2.0/a	1.5/a

²¹ Licensed soil erosion monitoring institute

²² Local Public Health Bureaus

²³ See Chapter IV of IEE

Subject	Parameter	Location	Frequency	Who Implements	Who Supervises	Estimated Cost (RMB 10,000)			
						Tacheng	Emin	Tuoli	Yumin
	CO	along the roads and nearby bridges	consecutive days, twice per year		LEPBs				
Surface water	pH, SS, DO, NH ₃ -N, oil, COD, total coliforms	50m upstream and 50 and 100m downstream of project bridges.	Once per day, for 3 consecutive days, once per year (during high flow).	LEMSs	LPMOs, LEPBs	5.0/a	3.0/a	1.5/a	0.5
Soil and Vegetation	Vegetation survival and coverage rate	Re-vegetated sites (spoil disposal sites, construction sites)	Spot check, twice per year	OPFs, LPMOs, PIUs	LEPBs, , TPPMO, LFBs ²⁴	Included in OPF's operation budget			
Traffic flow and safety	Vehicle numbers and road use (against predictions), accident incidents	Project roads	Road traffic monitoring program	OPFs, LPMOs	LTMBs ²⁵ , TPPMO				
HES backwash effluent quality	pH	Heat exchange stations (HES) within Liaota New District (21 HES locations)	Once per day, for 3 consecutive days, twice per year.	TEMS	TEPB	0.5/a			
Subtotal						14.0/a	8.0/a	5.0/a	3.0/a
Total						30.0 (47,580 USD)			

BOD₅ = 5-day biochemical oxygen demand; COD_{Cr} = chemical oxygen demand; CSC = construction supervision company; EMS = environmental monitoring station; EPB = environmental protection bureau; IA = implementation agency; LAeq = equivalent continuous A-weighted sound pressure level; LSMI = licensed soil erosion institute; NH₃-N = ammonia nitrogen; NO_x = nitrogen oxides; OPF = operators of project facilities; PM₁₀ = particles measuring 10µm or less; LPMO = local project management office; SO₂ = sulfur dioxide; SS = suspended solids; TPPMO = Tacheng Prefecture Project Management Office; TSP = total suspended particle

²⁴ Local Forestry Bureau

²⁵ Local Traffic Management Bureau

Table EMP-7: Environmental Monitoring Program For Kalangguer River Rehabilitation and Flood Control Components

Subject	Parameter	Location	Frequency	Who Implement	Who Supervise	Estimated Cost (RMB 10,000)
Construction Phase						
Construction and work-camp domestic wastewater and solid waste	pH, COD, NH ₃ -N, SS, oil	At discharge points of all construction sites, work camps	Impact Monitoring: One sampling each day each time, twice per year during construction season.	LEMS	PIU, LEPB, LWCB	6.0
Surface water	pH, DO, SS, NH ₃ -N, COD _{Cr} , oil, anionic surfactants	50 m upstream, and 100m downstream, and at site of construction activities on Kalangguer River.	Impact monitoring: one sampling each day, two consecutive days, 4 times per year during construction period, at least 5 monitoring points to be selected ²⁶ .	LEMS	TPPMO, LEPBs	5.0
Air	Visual Inspection of dust mitigation measures (water spraying, cover transport vehicles, etc.); and maintenance for vehicles and construction equipment	At all construction sites	Internal Monitoring: Daily	CSC	PIU	Includes in CSC contract
			External Monitoring: Twice per year	CS-ES	LEPB, LWCB	2.0
	PM10, SO ₂ , NO _x	At all construction sites (at least one point upwind, two points downwind);	Impact Monitoring: Twice per day for three consecutive days, twice per year during construction season	LEMS	PIUs, LEPBs,	5.0
Noise	LAeq	At boundary of construction sites, and at baseline monitoring points (Chapter IV of IEE).	Impact Monitoring: Twice per day (once in day time and once at night time) for 2 consecutive days, twice per year during construction season.	LEMS	PIUs, LEPB,	4.0
Soil erosion	Visual inspection of topsoil stockpile and construction site rehabilitation (e.g. compensatory plantings)	At all construction sites	Internal Monitoring: Daily	CSC	PIU	Included in the CSC contract
			External Monitoring: Twice per year during construction season	CS-ES	LEPB	Included in the CS-ES contract
Occupational health and safety	Inspection of hygiene status, availability of clean water and emergency response plans	At all construction sites and work-camps	Internal Monitoring: Daily	CSC	PIU	Included in the CSC contract

²⁶ One point at each of the five river sections (Chapter III of the IEE).

Subject	Parameter	Location	Frequency	Who Implement	Who Supervise	Estimated Cost (RMB 10,000)
Construction Phase						
			External Monitoring: Twice per year during construction season	CS-ES	LLB ²⁷	Included in the CS-ES contract
Subtotal					22.0 (35,484 USD)	
Operation Phase						
Surface water	pH, SS, NH ₃ -N, DO, COD _{Cr} , BOD ₅ , NO ₂ -N, oil, TP, TN, total coliform	4 points along the river, and at the proposed 5 monitoring sites (a point for each of the five sections)	Compliance monitoring: One sampling each day, three consecutive days, four times per year	LEMS	LEPB	4.0/a
Riverside vegetation	Water consumption for irrigation (m3/a)	Along project section of Kalangguer River	Internal Monitoring: Yearly	TWRB	LEPB, LFB	2.0/a
Floods	Water levels (m), water flow (m3/s)	Along Kalangguer River, including upstream and downstream areas	Internal Monitoring: Daily (through flood monitoring and early warning system)	TWRB		Included in TWRB budget
Subtotal (Recurrent cost)						6.0/a

COD_{Cr} = chemical oxygen demand; CSC = construction supervision company; IA = implementation agency; LEMS = Local Environmental Monitoring Station; LEPB = Local Environmental Protection Bureau; LWRB = Local Water Resource Bureau; LFB = Local Forestry Bureau; LAeq = equivalent continuous A-weighted sound pressure level; NH₃-N = ammonia nitrogen; NO_x = nitrogen oxides; PM₁₀ = particles measuring 10µm or less; SO₂ = sulfur dioxide; SS = suspended solids; TN = total nitrogen, TP = total phosphorus; TSP = total suspended particle;

²⁷ Local Labors' Bureau

E. Training

18. To ensure effective implementation of the EMP, the capacity of the TPPMO, LPMOs, PIUs, OPFs, CSCs and contractors must be strengthened, and all parties involved in implementing mitigation measures and monitoring of environmental performance must have an understanding of the goals, methods, and the best practices of project environmental management. Tacheng Prefecture EPB, the project management consulting services (PMCS) will offer training specific to their roles for the project. The main training emphasis will be to ensure that the contractors, CSCs, PIUs, IAs, LPMO, TPPMO and OPFs are well versed in environmentally sound practices and are able to undertake all construction and operation with the appropriate environmental safeguards.

19. The training program also addresses long-term capacity building needs, i.e. for the operational phase of the project. Training will be provided by qualified experts on infrastructures management, operation and maintenance of Kalangguer River, sustainable urban transport planning, road safety, waste sorting and recycling, and others.

20. The following training programs (**Table EMP-8**) will be delivered or organized by the PMCS during the course of project implementation. Training Needs Assessments will be conducted by the PMCS to tailor the training for maximum impact. The CS-ES will design an evaluation questionnaire to gauge the usefulness of the training/capacity building design and performance of the trainer. The evaluation will be taken into account in the trainer's performance evaluation.

Table EMP-8: Indicative List of Training Program Related to Environment

Training topic	Scope of Training	Trainer	Trainee
Procurement and contract management	(1) ADB's procurement guideline and bidding procedure (2) Bidding document preparation, including EMP clauses	start-up consultant, PMCS, CS-ES	CSC, IAs, LPMOs, PIUs
Implementation of EMP	(3) EMP implementation, including implementation responsibilities, environmental monitoring, inspection and reporting, consultation and participation, mechanism of EMP review, feedback and adjustment; (4) GRM, including GRM structure, responsibilities and timeframe, types of grievances, eligibility assessment; (5) and (6) Communication with the public by different means (Innovative community-based advocacy campaigns).	CS-ES, PMCS, TPEPB	CSC, IAs, PIUs, LPMOs, Contractors, GRM access points, and other related local bureaus
Municipal solid waste management	(7) International and national good practices for solid waste management (3 R principal) (8) Municipal solid waste management technologies and options (9) Public awareness program and public willingness (10) Use of performance indicators	CS-CB; CS-ES	CSC, IAs, LPMOs, PIUs, other related local bureaus
Sustainable transport planning	(11) Coordination with urban and regional plans (12) Transport demand and projection analysis (13) Transport data collection procedure (person-trip survey) (14) Policies for promoting sustainable, green and inclusive urban transport (15) Public transport planning and promotion	CS-CB, CS-SS	CSC, IAs, PIUs, LPMOs, other related local bureaus (e.g. transport bureau),
Road safety	(16) International and national good practice for road safety (17) Road safety audit tools and approaches (18) Data collection for road safety (19) Institutional responsibility and set-up (20) Policies for improving road safety (21) Public transport safety and security	CS-CB	CSC, IAs, PIUs, LPMOs, other related local bureaus

Training topic	Scope of Training	Trainer	Trainee
	(22) Public awareness program and education (23) Use of performance indicators		
River restoration and flood control	(24) River rehabilitation – international and national best practice (25) Flood emergency planning (26) Flood early warning system (27) Operation and maintenance of riverside vegetation	CS-ES, CS-CB	CSC, IAs, LPMOs, PIUs

ADB = Asian Development Bank, CSC = construction supervision company; EA = executing agency, EHS = environment health and safety, EMP = environment management plan, EPB = environment protection bureau, GRM = grievance redress mechanism, IA = implementing agency, PMCS = Project management consulting services; CS-ES = Environmental specialist, PMCS, PIU = project implementing unit, CS-CB = Capacity building consultants, PMCS, CS-SS = Social safeguards specialists, PMCS.

F. Public Consultation

21. Meaningful consultations were conducted during the domestic EIS preparation and PPTA. Direct public participation was conducted in each of the project city/counties as an ongoing element in the development of the components, and its outcome are described in Chapter VII of the IEE. These activities were carried out by the EIA institute in their preparation of the EISs, and by the PPTA consultants following the PRC National EIA Technical Guidelines and ADB SPS (2009) and Public Communication Policy (PCP, 2011).

22. Future plans for public involvement during the design, construction, and operation phases were developed during PPTA (**Table EMP-9**). Affected people will be consulted and informed through site visits and informal interviews by the PIUs (through their environmental management unit), with support of the CS-ES. Public meetings will be organized by the LPMOs and PIUs in the project city/towns prior to mid-term mission to present and discuss EMP implementation progress, solicit community opinions and concerns, and agree on required corrective actions. The CS-ES will, prior to project completion report, organize surveys in the project city/town to assess community satisfaction with project implementation, project outputs, and EMP implementation performance. The results will be documented in the project completion report (PCR). The project's environmental information will be disclosed by the local EPBs and ADB as follows: (i) the project IEE is disclosed at www.adb.org; (ii) the Chinese EISs and TEIAs were disclosed on the website of the Tacheng Prefecture Environmental Protection Department (TPEPD); and (iii) the annual environment monitoring reports will be disclosed at www.adb.org.

Table EMP-9: Consultation and Participation Plan

Organizer	Approach	Times/Frequency	Subjects	Participants
Project preparation				
EIA Institute	Questionnaires and interviews	During field work for EIA	Project priority, effects, attitudes to the Project and suggestions	Residents within project construction areas and local agencies
PPTA Consultants, ADB	Site visits, public consultations, and interviews	Two rounds of consultation in each of the city/counties	Comments and recommendations of APs and stakeholders	Representatives of APs and stakeholder agencies
Construction				
PIUs, TPPMO, CS-ES	Site visits, informal interviews	Regularly (during site inspections by PIU EMU)	Construction impacts, site safety, comments and suggestions	Construction workers within construction area; and residents within construction area
	Public meetings in each project city	Once prior to midterm review	EMP implementation progress, adjusting mitigation measures if necessary, construction impacts, comments and	Representatives of residents, APs, and related local agencies

Organizer	Approach	Times/Frequency	Subjects	Participants
			suggestions	
Operation				
CS-ES, TPPMO	Questionnaire survey	Prior to project completion	Community satisfaction with project implementation, project outputs, and EMP implementation performance.	Representatives of residents, APs, and related local agencies

EIA = Environmental Impact Assessment, AP = Affected people, OPF = Operator of Project Facilities, PIU = Project Implementing Unit, LPMO = Local Project Management Office, CS-ES = Environmental Specialist of Loan Implementation Support; PPTA = Project Preparation Technical Assistance.

G. Mechanism for Feedback and Adjustment

23. Based on environmental inspection and monitoring reports, the TPPMO, LPMOs, PIUs shall decide, in consultation with the CS-ES, whether (i) further mitigation measures are required as corrective actions, or (ii) some improvements are required for environmental management practices.

24. The effectiveness of mitigation measures and monitoring plans will be evaluated by a feedback reporting system. Adjustment to the EMP will be made, if necessary. The LPMOs and their EMUs will play a critical role in the feedback and adjustment mechanism.

25. If during inspection, substantial deviation from the EMP is observed or any changes are made to the project that may cause substantial adverse environmental impacts or increase the number of affected people, then the TPPMO and the LPMOs will immediately consult with ADB and form an EIA institute to conduct additional environmental assessment and, if necessary, further public consultation. The revised EIS/EIA report including the EMP will be submitted to the ADB for review, appraisal and disclosure. The revised EMP will be passed to the contractors, CSCs and OPFs for implementation.

H. Grievance Redress Mechanism (GRM)

26. A grievance redress mechanism (GRM) has been defined for environmental, health and safety concerns and grievances. In consultation with the TPPMO, the LPMOs, the IAs, the PIUs, it was agreed that one GRM will be established to address community concerns and complaints. The GRM will be coordinated by the TPPMO, with GRM access points at local level (contractors, PIUs, and IAs).

27. Grievances will most likely include disturbance of traffic; dust emissions; construction noise; inappropriate disposal of construction wastes; damage to private houses; safety measures for the protection of the public and construction workers; or surface water quality deterioration during bridge construction and Tacheng Kalangguer River rehabilitation and flood control works.

28. The GRM will be accessible to diverse members of the community, including more vulnerable groups such as women, minority and poor.

29. The TPPMO will establish a Project Public Complaint Unit (PPCU), which will be coordinated by the TPPMO-SO. The PPCU will instruct contractors, CSCs and the PIUs if people complain about specific project activities. The PPCU will coordinate with the concerned local EPB and other government divisions, if necessary, and will be supported by the CS-ES. The PPCU will establish a GRM tracking and documentation system, including procedures to retrieve data for reporting purposes to the TPPMO and ADB.

30. The contact persons for different GRM entry points, such as contractors, PIUs, local EPB, PPCU, etc., will be identified prior to construction. The contact details for the entry points (phone numbers, addresses, e-mail addresses) will be publicly disclosed on information boards at construction sites. The chart of GRM is shown in **Figure EMP-1**.

A. Step-by-Step GRM Procedure

31. The **procedure and timeframe** for the grievance redress mechanism are described as follows (see **Figure EMP-1**):

- i) **Stage 1:** If a concern arises during construction, the affected person can submit a written or oral complaint to the contractor directly. Whenever possible, the contractor will resolve the issue directly with the AP. The contractor shall give a clear reply within five (5) days. If successful, the contractor will inform the PPCU accordingly. The AP may also decide to submit a written or oral complaint to the PPCU, either directly or via one of the GRM entry points (local EPB, PIU, CSC). For an oral complaint, proper written records must be made.
- ii) **Stage 2:** If no appropriate solution can be found between the contractor and the AP²⁸, or if the AP decided in Stage 1 to submit a written or complaint directly to the PPCU, the latter will assess the eligibility of the complaint, identify the solution and provide a clear reply for the complainant within five (5) working days. The CS-ES will assist the PPCU in replying to the APs, if needed. The PPCU will also inform ADB and XPMO and submit all relevant documents. Meanwhile, the PPCU will timely convey the complaint/grievance and suggested solution to the contractors or PIU. The contractors during construction and the PIUs during operation will implement the agreed upon redress solution and report the outcome to the PPCU, preferably within seven (7) working days.
- iii) **Stage 3:** In case no solution can be identified by the PPCU, or the complainant is not satisfied with the proposed solution, the PPCU will organize, within 2-3 weeks, a multi-stakeholder hearing (meeting) involving all relevant stakeholders (including the complainant, contractor, local EPB, PIU, TPPMO). The hearing shall identify a solution acceptable to all, and formulate an action plan. The contractor during construction, and the PIU during operation will implement the agreed-upon redress solution and report the outcome to the PPCU within the agreed upon timeframe.

32. The PPCU shall accept the complaints/grievances lodged by the AP free of charge. Any cost incurred should be covered either by the contractor, or by the contingency of the project. The grievance procedures will remain valid throughout the duration of project construction and until project closure.

²⁸ The contractor has the obligation to forward the complaint to the PPCU if no solution is found during stage 1.

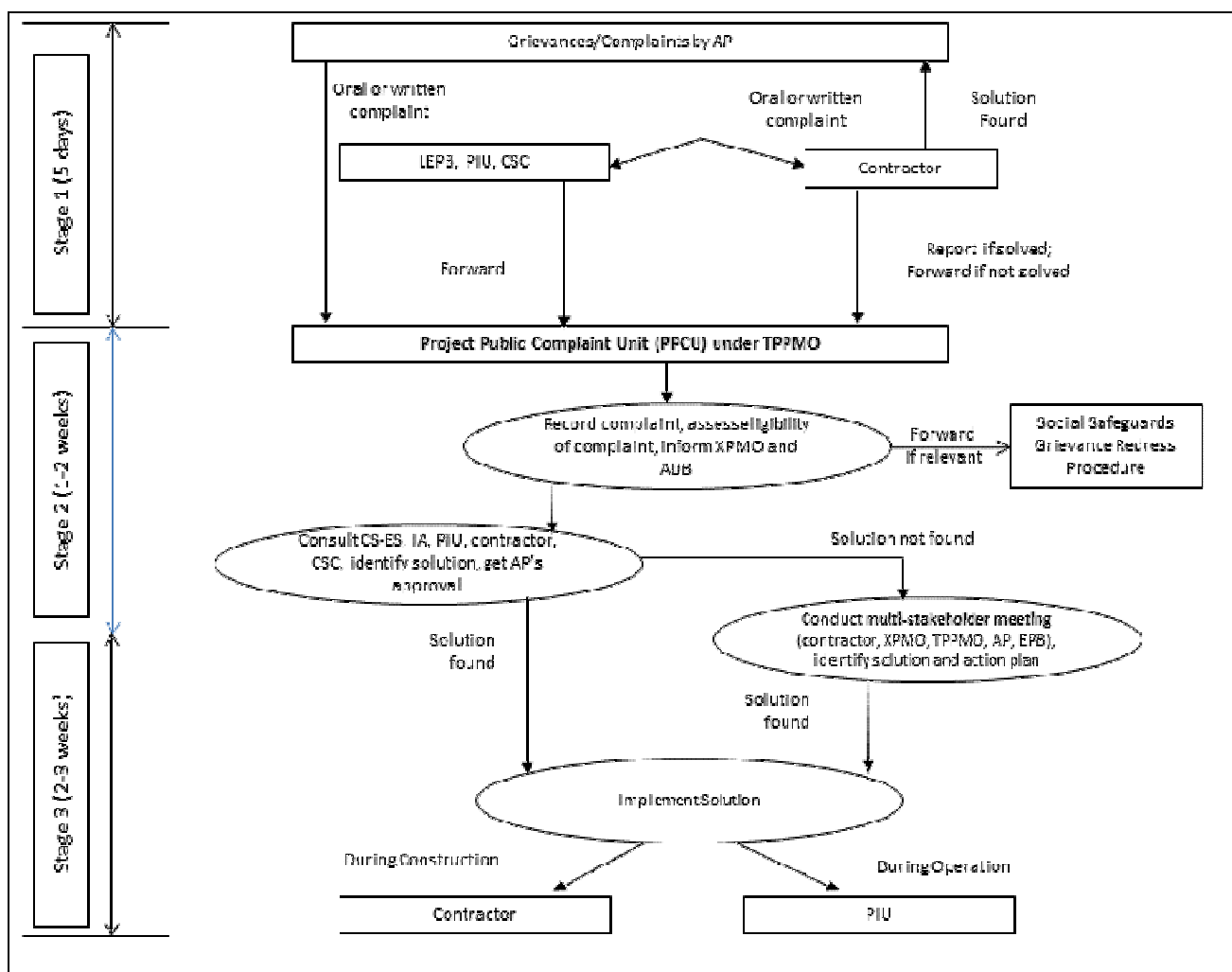


Figure EMP-1: Proposed GRM

Note: AP = affected person, EPB = environmental protection bureau, PIU = Project implementing unit; CS-ES = Environmental specialist of project management consultant services; TPPMO = Tacheng Prefecture project management office; PIU=project implementation unit; CSC=construction supervision company.

APPENDIX 2: ENVIRONMENTAL SAFEGUARD CLAUSES FOR CIVIL WORKS CONTRACTS

1. The general environment, health and safety obligations of the Contractor within this Contract, without prejudice to other official provisions in force, include the following:

- (i) The Contractor shall ensure that the construction and decommissioning of project facilities comply with (a) all applicable laws and regulations of the People's Republic of China (PRC) relating to environment, health and safety; (b) the Environmental Safeguards stipulated in ADB's Safeguards Policy Statement (2009); and (c) all measures and requirements set forth in the EMP (PAM, Appendix EMP).
- (ii) The Contractor shall establish a telephone hotline staffed at all times during working hours. Contact details shall be prominently displayed at the sites. The Contractor shall disseminate to the public in timely manner information on the construction progress, including anticipated activities that might cause safety risk.
- (iii) The Contractor shall secure, where necessary, appropriate permits and licenses before undertaking the works.
- (iv) The Contractor shall prepare a construction site-EMP based on the measures defined in the EMP prepared for the project (PAM, Appendix EMP), to be submitted to the Project Implementing Unit (PIU) and the Tacheng Prefecture PMO for review and approval. The site-EMP shall include the following sub-plans: which shall include the following plans: (a) Site drainage and soil erosion protection; (b) Spill control and management; (c) Environmental, health and safety management plan (EHSMP); (d) Surface water protection; (e) Temporary traffic management; (f) Construction site access control.
- (v) The Contractor shall assign sufficient qualified staff to manage site-EMP implementation, and ensure adequate financial resources are available to implement the site-EMP throughout the construction period.
- (vi) The Contractor shall provide equal pay for equal work, regardless of gender or ethnicity; provide those they employ with a written contract; provide the timely payment of wages; use local unskilled labor, as applicable, comply with core labor standards and the applicable labor laws and regulations, including stipulations related to employment, e.g. health, safety, welfare and the workers' rights, and anti-trafficking laws; and not employ child labor. Contractors shall maintain records of labor employment, including the name, ethnicity, age, gender, domicile, working time, and the payment of wages.
- (vii) The Contractor shall (a) disseminate information on sexually transmitted diseases (including HIV/AIDS) to sub-contractors/employees and local communities surrounding the Project construction sites; (b) implement HIV/AIDS awareness and prevention training for sub-contractors/employees; (c) provide necessary measures to ensure the safety and health of its sub-contractors/employees; and (d) observe local customs concerning acceptable behavior towards the local population.
- (viii) The Contractor shall take necessary precautions to avoid interruptions to water supply, wastewater collection, heating and other utility services during the civil works.
- (ix) The Contractor shall take appropriate sanctions against personnel violating the applicable specifications and provisions on environment, health and safety.
- (x) The Contractor shall document, and systematically report to the implementing agency, local PMO and PIU, of each incident or accident, damage or degradation

caused to the environment, workers or residents or their assets, in the course of the works.

- (xi) The Contractor shall provide all relevant information about the EMP, as well as the Site-EMP to subcontractor/s and be responsible for their actions.
- (xii) The Contractor shall provide the implementing agency and the PIU with a written notice of any unanticipated environmental, health and safety risks or impacts that arise during implementation of the contract that were not considered in the EMP.