Report and Recommendation of the President to the Board of Directors

Project Number: 46048–002
November 2014

Proposed Loan
People's Republic of China: Jilin Urban Development Project

CURRENCY EQUIVALENTS

(as of 21 October 2014)

Currency unit	–	yuan (CNY)
CNY1.00	=	$0.1632
$1.00	=	CNY6.1242

ABBREVIATIONS

3R	–	reduce, reuse, recycle
ADB	–	Asian Development Bank
BCMG	–	Baicheng Municipal Government
BEDZ	–	Baicheng Economic Development Zone
BSMG	–	Baishan Municipal Government
GAP	–	gender action plan
ISWM	–	integrated solid waste management
JPG	–	Jilin provincial government
km	–	kilometer
MSW	–	municipal solid waste
NRW	–	nonrevenue water
O&M	–	operation and maintenance
PAM	–	project administration manual
PIU	–	project implementation unit
PMO	–	project management office
PRC	–	People's Republic of China
t/d	–	tons per day

NOTE

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

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PROJECT AT A GLANCE

1. Basic Data — **Project Number:** 46048-002

Project Name	Jilin Urban Development Project	**Department /Division**	EARD/EASS
Country	China, People's Republic of	**Executing Agency**	Jilin Provincial Government
Borrower	China, People's Republic of		

2. Sector

	Subsector(s)	ADB Financing ($ million)
✓ **Water and other urban infrastructure and services**	Other urban services	30.00
	Urban solid waste management	25.00
	Urban water supply	35.00
Transport	Urban roads and traffic management	60.00
	Total	**150.00**

3. Strategic Agenda

	Subcomponents	Climate Change Information	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Climate Change impact on the Project	Low
Environmentally sustainable growth (ESG)	Eco-efficiency Urban environmental improvement		
Regional integration (RCI)	Pillar 4: Other regional public goods		

4. Drivers of Change

	Components	Gender Equity and Mainstreaming	
Governance and capacity development (GCD)	Anticorruption Civil society participation Institutional development Organizational development	Effective gender mainstreaming (EGM)	✓
Knowledge solutions (KNS)	Pilot-testing innovation and learning		
Partnerships (PAR)	Civil society organizations Implementation		
Private sector development (PSD)	Public sector goods and services essential for private sector development		

5. Poverty Targeting

		Location Impact	
Project directly targets poverty	No	Rural	Low
		Urban	High

6. Risk Categorization: Complex

7. Safeguard Categorization **Environment:** B **Involuntary Resettlement:** A **Indigenous Peoples:** C

8. Financing

Modality and Sources	Amount ($ million)
ADB	**150.00**
Sovereign Project loan: Ordinary capital resources	150.00
Cofinancing	**0.00**
None	0.00
Counterpart	**236.84**
Government	236.84
Total	**386.84**

9. Effective Development Cooperation

Use of country procurement systems	No
Use of country public financial management systems	No

Source: Asian Development Bank

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to the People's Republic of China (PRC) for the Jilin Urban Development Project.[1]

2. The project will address urgent infrastructure needs, introduce best practices, and pilot innovative municipal services solutions to develop Baishan and Baicheng cities in Jilin Province (in the northeast region of the PRC) as livable and resource-efficient medium-sized cities. It will make provision for (i) urban roads and municipal services in Baicheng that promote people-centered urban transport; (ii) the introduction of integrated solid waste management (ISWM) in both cities, based on the reduce, reuse, recycle (3R) principle that includes composting solutions; and (iii) improvement of water supply services in Baishan, emphasizing water conservation, water supply safety, and energy efficiency.[2]

II. THE PROJECT

A. Rationale

3. The PRC's National New Urbanization Plan, 2014–2020 aims to increase the urbanization rate from the current 54% to 60% by 2020 (representing about 100 million new urban residents), and to 70% by 2030 (equal to about 300 million new urban residents).[3] Urbanization is perceived as a means to sustain economic growth through domestic consumption,[4] and to achieve more balanced development by directing the future urban population away from large cities.[5] The strategy focuses on the development of medium-sized cities (in which more than one-third of the urban population lives) as an important means of absorbing future urban residents in a sustainable, inclusive, and efficient manner.[6] These cities have the potential to generate sufficient economies of scale to cluster local economic activities, while their proximity to the rural population supports rural and urban integration,[7] and balances the development of industry and job markets nationally and in each province. Although they benefit from some advantages,[8] they suffer from a deficit of infrastructure and municipal services, resulting in environmental pollution and constrained economic development. The capacity of medium-sized cities to pilot, implement, and replicate efficient urban infrastructure and municipal service delivery best practices will play an essential role in the quality and livability of the country's urban development.

4. Development in Jilin Province is centered in the cities of Changchun and Jilin, and improvements barely reach the remote, less-developed prefectures in the southeast and northwest, where Baishan (480,000 residents) and Baicheng (330,000 residents) cities,

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[1] The design and monitoring framework is in Appendix 1.

[2] ADB. 2012. *Technical Assistance to the People's Republic of China for Preparing the Jilin Urban Services Improvement Development Project.* Manila (TA 8172-PRC).

[3] Staff Council of the PRC. 2014. *National New Urbanization Plan, 2014–2020*. Beijing.

[4] Domestic consumption accounted for 36% of the PRC's gross domestic product in 2011; by comparison, it accounted for 72% in the United States, 65% in the United Kingdom, and 59% in India. The PRC's domestic markets are perceived to have the potential to sustain economic growth even if the global economy stagnates.

[5] Most large or mega cities in the PRC face significant challenges relating to the environment and congestion (e.g., escalating housing prices, traffic gridlock, extensive air and water pollution, water scarcity, and overcrowding).

[6] A medium-sized city has a population of 0.2–1.0 million.

[7] On 15 November 2013, the decisions by the Central Committee of the Communist Party of China indicated that urbanization and reform of the *hukou* (household registration) system should focus on small- and medium-sized cities, while migration to the large and mega cities should be strictly controlled.

[8] Such as lower living costs, healthier environments, household registration system reforms, proximity to large rural populations, and lower land costs.

respectively, are located.[9] The Jilin provincial government (JPG) has formulated a strategy that prioritizes development of the two cities, seeking to increase economic activity, decrease the poverty rates in their respective areas,[10] and balance development within the province.

5. Critical infrastructure gaps that prevent sustainable development of Baichang and Baishan cities have been identified. Residential areas in western Baicheng—the Baicheng Economic Development Zone (BEDZ)—have grown without proper access to central municipal services. An estimated 25,000 residents are not yet connected to the central wastewater treatment plant, and discharge wastewater into the surrounding environment or into unimproved septic tanks. A rational road network is absent within the BEDZ to provide adequate urban services to the existing population, properly connects the area to the rest of Baicheng, and facilitate the development of mixed-function areas to accommodate future residents and economic activities. The city's current road design allows little room for promoting public and nonmotorized transport.

6. The current daily generation of municipal solid waste (MSW) is 420 wet tons per day (t/d) in Baicheng and 330 wet t/d in Baishan. In Baicheng, a new sanitary landfill is under construction. In Baishan, the existing landfill is being rehabilitated and will reach its maximum capacity in 3 years. In the two cities, solid waste management relies on "truck and dump" operations, with little consideration for 3R principles, and limited disposal options. This results in pollution and inefficient use of waste resources.

7. Baishan's water supply has reached its full capacity and cannot ensure 24-hour water services. Currently, 30% of the population (144,000 people) lacks full-time access to water. The recent decline in the quality and quantity of the main water source (Dayangcha River) in Jiangyuan district combined with the growing population of Hunjiang district are putting Baishan's water supply safety at significant risk. Previously inadequate technical standards, aging pipes, and poor water supply dispatching efficiency have resulted in nonrevenue water (NRW) in Baishan reaching 65%; this in turn has caused inefficient water use, loss of income, and excessive energy consumption.

8. **Strategic fit.** While addressing priority infrastructure gaps, the project aims to promote best international practices and enhance investment proposals for long-term, resource-efficient, and environmentally compliant solutions. The project is aligned with the ADB country partnership strategy and ADB's urban and water operational plans, 2011–2020.[11] It is also in line with the National New Urbanization Plan, 2014–2020 and the government's Twelfth Five-Year Plan as it supports (i) balanced urbanization with development of cities that are livable, conserve resources, and are inclusive; and (ii) the sector objective of improving and piloting best practices with respect to water, solid waste, and municipal services.[12] Finally, the project continues the long-term strategic partnership that ADB has built through multiple investments to

[9] Baishan City population is projected to reach 700,000 by 2020. Baicheng City population is projected to reach 600,000 in 2020.

[10] The two cities and their surrounding rural areas have some of the highest poverty rates in the province.

[11] ADB. 2012. *Country Partnership Strategy: People's Republic of China, 2011–2015.* Manila; ADB. 2013. *Urban Operational Plan, 2012–2020.* Manila; and ADB. 2011. *Water Operational Plan, 2011–2020*. Manila.

[12] For example, the Twelfth Five-Year Plan direction for solid waste management indicates that classified collection, transport, and treatment of organic waste in the cities at or above prefecture level should be promoted. Model cities for domestic solid waste classification should focus on wet and/or dry classification of household garbage. If applicable, organic waste will be collected separately and recycled.

decrease urban pollution and support more balanced urban development in Jilin Province, the Songhua river basin, and the Yalu river basin.[13]

B. Impact and Outcome

9. The impact will be improved economic growth, resource efficiency, and quality of life in Baicheng and Baishan cities. The outcome will be improved delivery and efficiency of municipal services in Baicheng and Baishan cities.

C. Outputs

10. The project has four components: (i) Baicheng municipal services; (ii) the Baishan ISWM system; (iii) Baishan water supply management; and (iv) capacity development and institutional strengthening, divided into five outputs:

(a) **Output 1: Improved urban infrastructure in Baicheng.** Comprising (1) construction of nine urban roads with a total length of 32.4 kilometers (km), including dedicated bus (7 km) and nonmotorized transport (26 km) lanes; (2) construction of two bridges (20-meter span) and one railroad underpass; (3) installation of a 36.9 km water supply piping network; 63.2 km sanitary sewer piping network, including a pump station; 59.9 km stormwater piping network with two pump stations; and a 28.2 km heating network; (4) installation of associated communication, energy, lighting facilities, and landscaping; and (5) installation of traffic control and management system;

(b) **Output 2: Integrated solid waste management system in Baicheng.** Comprising (1) construction of a 30 t/d kitchen waste sorting and composting facility; (2) procurement of one construction material recycling machine; (3) construction of nine new MSW transfer stations and 20 recyclate collection points; and (4) upgrading of MSW handling, city cleaning, and maintenance of vehicles and equipment;

(c) **Output 3: Integrated solid waste management system in Baishan.** Comprising (1) construction of a new MSW sanitary landfill with a daily capacity of 330 t/d; (2) construction of a 30 t/d kitchen waste sorting and composting facility; (3) provision for two construction waste recycling machines; (4) upgrading of 15 MSW transfer stations and 21 recyclate collection points; and (5) upgrading of MSW handling equipment, city cleaning, and maintenance of vehicles and equipment;

(d) **Output 4: Improved water supply management in Baishan.** Comprising (1) construction of a 6.8 km water transmission line to Jiangyuan, supplying water to an existing water treatment plant; (2) construction of a 21.1 km water transmission line to Hunjiang new water treatment plant; (3) construction of a new 50,000 t/d water treatment plant with supervisory control and data acquisition system;[14] (4) upgrading of the 11.1 km existing water supply piping network and construction of a 44.2 km new water supply piping network; and (5) construction of four pump stations, and provision of leak detection equipment, manholes, valves, flow meters, and other associated facilities; and

[13] ADB. 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Jilin Urban Environmental Improvement Project.* Manila; ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Songhua River Basin Water Pollution Control and Management 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 Jilin Water Supply and Sewerage Development Project.* Manila.

[14] The water source will be Xibeicha reservoir (currently under construction).

(e) **Output 5: Improved capacity and institutional arrangements.** Comprising (1) support for project implementation and management, institutional strengthening, capacity development, and training; (2) institutional capacity development support for water management, community-led waste sorting and recycling, people-centered urban transport, traffic management and safety, and public-awareness campaigns; and (3) external resettlement monitoring.

11. **Special features and value addition.** The project will promote people-centered urban transport in Baicheng. The provision of lanes dedicated to buses and nonmotorized traffic, supported by a capacity development program, will initiate change in the transport planning system and promote the extension of low-carbon transport. The project will also introduce a more systematic and efficient use of public buses. It will implement a traffic management and control system, traffic safety measures, and a public-awareness campaign to help improve traffic safety and reduce traffic congestion. The project will also pilot curbside stormwater collection and local infiltration, which has the potential to significantly reduce water logging and pollution.[15]

12. The solid waste management systems in Baicheng and Baishan cities will be developed into ISWM systems[16] through a plan that defines step-by-step solutions for each type of waste. The project will pioneer an MSW composting program in a medium-sized city.[17] At-source segregation will be established in selected communities[18] and recycling activities will be maximized by providing collection points for materials such as glass, metal, clothes, and construction waste. Education and public awareness campaigns, and community-based solid waste management will be implemented to ensure the sustained operation and impact of the infrastructure improvements.

13. The establishment of a resource-efficient and safe water supply system in Baishan will be achieved by supporting (i) reduction of NRW from 65% to 35%, by addressing water leakage, unbilled uses, and commercial losses; (ii) improvements in operations and energy efficiency by addressing engineering, automation and monitoring, and operation and maintenance (O&M); (iii) water supply safety, through the implementation of a water safety plan based on water quality monitoring and assurance systems;[19] (iv) financial sustainability through tariff reform to achieve full cost recovery; and (v) an education campaign to raise water conservation awareness.[20]

D. Investment and Financing Plans

14. The project is estimated to cost $386.84 million (Table 1), of which 44.3% of the base cost will finance civil works, 16.5% for mechanical and equipment, and 0.8% for consultants. The government has requested a loan of $150 million from ADB's ordinary capital resources to help finance the project. The loan will (i) have a 25-year term, including a grace period of 5

[15] Water logging refers to temporary urban flooding. This results from urban drainage system overflows caused by increased surface sealing in cities.
[16] ISWM integrates (i) stakeholders; (ii) technical elements of waste reduction, reuse and recycling, collection, and disposal; and (iii) sociocultural, environmental, institutional, political, and legal issues.
[17] Currently, composting represents less than 5% of MSW treatment undertaken in the PRC, and is virtually unknown in medium-sized cities.
[18] Representing 20% of the population of the two cities.
[19] Water conservation and implementation of a water safety plan is based on World Health Organization methodology, and aims to avoid the limitations associated with relying on end-product testing as a means of water safety control.
[20] A road map for sector improvement in each city is in Appendix 4 of the Project Administration Manual (accessible from the list of linked documents in Appendix 2).

years; (ii) use the annuity repayment method, with a 10% discount factor; (iii) have an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; (iv) have a commitment charge of 0.15% per year; and (v) have such other terms and conditions set forth in the draft loan and project agreements. Based on this, the average loan maturity is 18.31 years and the maturity premium payable to ADB is 0.20%.

Table 1: Project Investment Plan

Item		Amount ($ million)[a]	Share of Total (%)
A.	**Base Cost**[b]		
	1. Baicheng municipal services	234.05	60.5
	a. Baicheng urban infrastructure	202.48	52.3
	b. Baicheng integrated solid waste management	31.57	8.2
	2. Baishan integrated solid waste management	30.85	8.0
	3. Baishan water supply management	63.55	16.4
	4. Capacity and institutional arrangement	3.00	0.8
	Subtotal (A)	**331.44**	**85.7**
B.	**Contingencies**[c]	**47.80**	**12.4**
C.	**Financing Charges During Implementation**[d]	**7.60**	**2.0**
	Total (A+B+C)	**386.84**	**100.0**

Note: Numbers may not add up precisely due to rounding.

[a] Includes taxes and duties of $16.57 million to be financed from government resources and Asian Development Bank (ADB) loan resources. The amount of taxes and duties to be financed by the project is based on the following principles: (i) the amount of taxes and duties financed by the ADB loan does not represent an excessive share of the project, (ii) the taxes and duties apply only to ADB-financed expenditures, and (iii) the financing of the taxes and duties is relevant to the project success.

[b] In mid-2013 prices.

[c] Physical contingencies computed at 5% for civil works; and 5% for field research and development, training, surveys, and studies. Price contingences computed at 6.03% on foreign exchange costs and 9.37% on local currency costs.

[d] Includes interest and commitment charges. Interest during construction for ADB loan(s) has been computed at the 5-year United States dollar fixed-swap rate plus a spread of 0.5% and additional 0.2% maturity premium. Commitment charges for an ADB loan are 0.15% per year on the undisbursed loan amount.

Source: Asian Development Bank estimates.

15. The ADB loan will finance taxes and duties for eligible ADB-financed expenditures, and transportation and insurance costs included in the base cost to ensure smooth project implementation. The loan will finance 38.78% of the project cost, including civil works, equipment and materials, and institutional strengthening. Interest and commitment charges will be capitalized. The government will finance the remaining $236.84 million, accounting for 61.22% of the project cost, through counterpart funds from municipal governments of Baicheng and Baishan, including civil works, resettlement, and contingencies. The financing plan is in Table 2.

Table 2: Financing Plan

Source	Amount ($ million)	Share of Total (%)
Asian Development Bank	150.00	38.78
Baicheng municipal government	175.50	45.37
Baishan municipal government	61.34	15.86
Total	**386.84**	**100.00**

Note: Percentages may not total 100% because of rounding.

Source: Asian Development Bank estimates.

16. The PRC is the borrower of the loan and will make the loan available, through Jilin provincial government, to Baicheng and Baishan city governments on the same terms and conditions as those of the ADB loan. The project city governments will assume the foreign exchange and interest variation risks of the ADB loan. The governments 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 indicative flow of funds and the relending and onlending arrangements are in the project administration manual (PAM).[21]

E. Implementation Arrangements

17. JPG is the project executing agency. A project management office (PMO) for the project was established under the Jilin Housing and Urban–Rural Development Department. The project implementing agencies are the Baicheng and Baishan municipal governments. For the ISWM subcomponent, the project implementation unit (PIU) is Baishan Solid Waste Disposal Company and for the water supply subcomponent, the PIU is Baishan Xibeicha Qiyuan Hydropower Corporation. The PIU for implementation of the Baicheng urban infrastructure and ISWM components is BEDZ Investment and Development. The implementation arrangements are summarized in Table 3 and described in detail in the PAM.

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period	December 2014–December 2018		
Estimated completion date	31 December 2018 (estimated loan closing date: 30 June 2019)		
Management			
(i) Oversight body	The Jilin PLG will provide policy guidance and project coordination. It will be chaired by the director general of Jilin Housing and Urban–Rural Development Department, and will include senior officials from JDRC, JFB, JHUDD, BCMG, and BSMG (members).		
(ii) Executing agency	The Jilin provincial government has overall responsibility for project implementation, including establishing and managing the project imprest account. The PMO, established under the JHUDD, will handle overall project coordination and management.		
(iii) Key implementing agencies	BCMG and BSMG will be the implementing agencies, with overall responsibility for implementing components, including the provision of counterpart funding and loan repayment; technical and procurement activities; monitoring, supervision and evaluation; and safeguard compliance. Two sub-PMOs will be established to manage day-to-day activities and provide coordination support for subproject implementation: Baicheng Municipality PMO, headed by the director of BEDZ Investment and Development; and Baishan Municipality PMO, headed by the director of the housing and construction bureau.		
(iv) Implementation unit	The three project implementation units are government-owned entities that will report to the respective municipal government: (i) BEDZ Investment and Development will report to BCMG (12 staff proposed), (ii) Baishan Solid Waste Disposal will report to BSMG (49 staff proposed), and (iii) Baishan Xibeicha Qiyuan Hydropower will report to BSMG (27 staff proposed). The PIUs will carry out day-to-day implementation, including engineering supervision and procurement of goods and civil works.		
Procurement	International competitive bidding	20 contracts	$131.8 million
	National competitive bidding	19 contracts	$95.4 million
Consulting services	Consultants qualification selection	1 contract	$0.15 million
	Quality- and cost-based selection	174.5 person-months	$2.85 million
Retroactive financing and/or advance contracting	Advance contracting will require three packages (two for consulting services and one for goods). Advance contracting and retroactive financing will require six civil works contracts. Retroactive financing will finance up to $30 million of eligible expenditures (20% of the ADB loan) incurred prior to loan effectiveness but not earlier than 12 months prior to signing of the loan agreement.		
Disbursement	The loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2012, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.		

ADB = Asian Development Bank, BCMG = Baicheng Municipal Government, BEDZ = Baicheng Economic Development Zone, BSMG = Baishan Municipal Government, JDRC = Jilin Development and Reform Commission, JFB = Jilin Finance Bureau, JHUDD = Jilin Housing and Urban–Rural Development Department, PLG = Project Leading Group, PMO = Project Management Office.
Source: Asian Development Bank.

[21] Project Administration Manual (accessible from the list of linked documents in Appendix 2).

III. DUE DILIGENCE

A. Technical

18. Technical due diligence of the project component included comparative analyses; assessed technical specifications, sustainability, and design methods; and ensured standards comply with relevant PRC engineering guidelines and local regulations, as well as specific local conditions. The 3R principle was discussed and incorporated in the MSW management proposal to address waste reduction, sorting-at-source, recycling, and reuse of compost. The water supply component engineering design will facilitate O&M by optimizing energy efficiency, monitoring, and control systems; and reduce NRW. A people-centered transport system has been incorporated to promote nonmotorized transport, traffic safety, and public transportation.

B. Economic and Financial

19. The economic analysis evaluated the technical options, confirmed the economic viability of the project, and confirmed that the chosen engineering options are the least-cost options. The cost–benefit analysis reveals an overall economic internal rate of return of 16%, and overall economic net present value of CNY553.9 million. The economic internal rate of return for each component is computed at 16.0% for improved municipal services in Baicheng, 15.1% for Baishan ISWM, and 16.0% for Baishan improved water supply service; each exceeds the economic opportunity cost of capital of 12.0%. The sensitivity analysis shows that the project's economic return is robust against negative impacts.[22]

20. The analysis of the financial viability of the project's cost-recovery component (i.e., improved water supply management in Baishan) finds the financial internal rate of return to be 5.82%, which compares favorably with the 2.58% weighted average cost of capital. The financial analysis is based on a stepped tariff plan that aims at full cost recovery in the long term, and takes the form of an increasing block tariff, or volumetric tariffs.[23] Financial sustainability analysis indicates that the proposed project components entail acceptable fiscal risk regarding the ability of both Baicheng Municipal Government (BCMG) and Baishan Municipal Government (BSMG) to provide counterpart funds for capital investment, financing of O&M costs, and to service project debts.

C. Governance

21. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with JPG, BCMG, and BSMG. The financial management assessment concludes that, although the implementing agencies have adequate financial management capacity, measures will be implemented to strengthen their capacity to meet the project's financial management requirements. The procurement capacity assessment concludes that Jilin provincial PMO has strong experience managing ADB projects in accordance with ADB policies and procedures, as well as national laws and regulations. The implementing agencies and PIUs lack experience with ADB or foreign-funded projects. The implementing agencies and PIUs will work under the guidance of Jilin provincial PMO and will receive adequate knowledge and training support for procurement from an experienced procurement agent, and through the project implementation. The specific policy requirements and supplementary measures are described in the PAM.

[22] The economic internal rate of return remained above 12% even under a scenario that combined a (i) 10% reduction in project benefits, (ii) 10% cost overrun, and (iii) project implementation delay of 1 year.

[23] This is in line with water conservation guidances issued by the National Development and Reform Commission and the Ministry of Housing and Urban–Rural Development, which include water volumetric quotas, updated per region.

D. Poverty and Social

22. The project will benefit directly 786,000 people, including 86,500 low-income residents. The urban poverty rates of both cities are higher than the provincial average (12.5% in Baishan and 10.2% in Baicheng, versus an average of 6.0% for the Jilin Province). Poor infrastructure and services were identified as critical constraints to economic and social development. It is estimated that a total of more than 22,600 person-months of construction employment will be created by the project; most jobs will be filled by local people, including the local poor, and at least 30% will be provided to women. The implementing agencies will ensure that all PRC labor laws and core labor standards are followed. Details on specific measures to ensure the poverty and social benefits are in the social action plan included in the PAM.

23. Social and gender action plans were prepared for the project to ensure the participation of communities in managing the cities' urban areas. Actions include (i) implementation of traffic safety and water conservation-awareness programs; (ii) monitoring of public participation in the public hearing process for water tariffs; and (iii) targets for employment of local labor, women, and the poor during construction and implementation. In addition, the creation of community-based waste management groups and outreach to schools will help ensure the waste management infrastructure improvement impacts are sustainable. Social and gender indicators will be included in the project performance management system, and appropriate consultant inputs for implementation and monitoring of both plans are included in the supervision consultant package.[24]

24. **Gender.** The project has been designed to be classified "effective gender mainstreaming." A gender action plan (GAP) was prepared to enhance women's active and equitable participation in the project and help ensure that benefits accrue to women. Gender-specific measures are included in the resettlement plans and a social action plan. The PMO will implement the GAP measures, monitor impacts, and provide ADB with sex-disaggregated data on employment and participation, as detailed in the GAP's monitoring section and other project documents. GAP implementation will (i) increase women's participation in the project through targets that specify women will account for (a) at least 30% of people employed during construction, (b) 50% of participants in public consultations, and (c) at least 30% of participants in capacity development training; and (ii) ensure the collection of sex-disaggregated baseline and survey data, and establishment and monitoring of the GAP indicators.

E. Safeguards

25. **Environment (category B).** An initial environmental examination, including environmental management plan was prepared in compliance with ADB's Safeguard Policy Statement (2009), and disclosed to potentially affected people. Anticipated environmental impacts during construction include significant earthworks, waste management, soil erosion, and health and safety risks around construction sites. These impacts are of a temporary nature and are covered by stringent construction site management and procedural provisions in the environmental management plan. During operation, predicted ambient air and noise quality along project roads and at solid waste collection, composting and disposal facilities are within permitted limits. The water supply system in Baishan is not anticipated to affect local water resources and downstream water users.[25] JPG will be responsible for the overall

[24] Summary Poverty Reduction and Social Strategy (accessible from the list of linked documents in Appendix 2).
[25] Water source protection measures and minimum flow requirements are specified in the Xibeicha reservoir operation specifications.

implementation and compliance with the environmental management plan. Environmental management is supported by loan assurances and capacity development and institutional strengthening activities under the project. JPG conducted meaningful consultations with potentially affected people and project beneficiaries. Environmental complaints will be handled in accordance with the grievance redress mechanism developed for the project.

26. The project will have significant environmental benefits. In Baishan, the project will implement a supervisory control and data acquisition system to improve energy efficiency.[26] Baishan's resilience to climate variability will be strengthened by reducing NRW (from 65% to 35%); by increasing the number of supply options and thus water source redundancy; through demand management (i.e., public awareness on water conservation); and through water supply safety planning. In Baicheng, the project will promote low-carbon transport modes, and curbside stormwater collection and infiltration will be piloted along selected roads to mitigate the risk of water logging. In the two cities, about 14,000 tons/year of kitchen waste will be converted into valuable compost. In Baishan, the proposed sanitary landfill will include methane capture.

27. **Involuntary resettlement (category A).** The implementing agencies, with the support of a local institute, prepared resettlement plans for (i) Baicheng urban infrastructure and integrated MSW management, (ii) the Baishan water supply, and (iii) Baishan MSW management. The project affects 10 villages and three towns. The total permanent land acquisition is 2,425 *mu*, including 796 *mu* of state-owned land and 1,629 *mu* of collective land.[27] Total house and building demolition area is 59,715 square meters. It is estimated that a total of 1,914 persons from 701 households will be affected, including 364 households affected only by land acquisition, 293 households by house demolition, and 44 households by both. Three resettlement plans were prepared in compliance with ADB's Safeguard Policy Statement and endorsed by the Baicheng and Baishan municipal governments, disclosed to the affected persons, and uploaded on the ADB website on 25 May 2014. Compensation for lost assets and resettlement allowances will be paid to affected people. Livelihood rehabilitation arrangements in accordance with the resettlement plan will be made prior to the commencement of the related civil works. The executing and the implementing agencies have the capacity and the responsibility for planning, implementing, financing, and reporting on land acquisition and resettlement. A grievance redress mechanism has been established. An external resettlement and social monitor will be engaged to conduct semiannual monitoring and evaluation of resettlement implementation. The Baicheng and Baishan municipal governments have stated that the funds for involuntary resettlement will be available on time.

28. **Indigenous peoples (category C)**. No specific communities of ethnic minorities or groups are living separately and no adverse impacts are expected.

F. Risks and Mitigating Measures

29. The project has no unusual technical risks. The integrated benefits and impacts are expected to outweigh the costs. Major risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.[28]

[26] The supervisory control and data acquisition system and NRW-reduction measures will save 6.4 million cubic meters of water and 0.65 million kilowatt-hours of electricity per year.
[27] A *mu* is a Chinese unit of measurement (1 *mu* = 666.67 square meters).
[28] Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigating Measures
Delay in project implementation resulting from slow bidding process, disbursement, and limited experience of the two implementing agencies with ADB projects.	Mitigation includes early mobilization of loan implementation consultants; technical support for procurement, contract management, disbursement, and financial management; and training on ADB guidelines and procedures. Timely engagement of a tendering agent with significant ADB experience will support the bidding process.
Changes in key personnel within JPG and the implementing agencies and/or PIUs, and lack of coordination between agencies affect project progress and continuity.	ADB will conduct regular consultations and dialogue with officials from the JPG, the implementing agencies, PIUs, and local beneficiaries to ensure ongoing project support. JPG, the implementing agencies, and PIUs will keep detailed project records and documentation.
Corrupt practices may affect project design, procurement, and implementation leading to poor quality projects.	Assurance that JPG, BCMG, and BSMG will undertake the following anticorruption actions: (i) involve full-time officials from the government discipline investigation bureau in the bidding process, award of contracts, and in the approval of variations during construction; (ii) include provisions of ADB's Anticorruption Policy (1998, as amended to date) in the bidding documents; and (iii) periodically inspect contractor's fund withdrawals and settlements.
Delay in land acquisition and resettlement approvals and implementation could impact the schedules for civil works.	BCMG and BSMG will make compensation funds for affected persons available early. There will be strict compliance with the resettlement plan. Project scheduling will include resettlement milestones.

ADB = Asian Development Bank, BCMG = Baicheng Municipal Government, BSMG = Baishan Municipal Government, JPG = Jilin Provincial Government, PIU = Project Implementation Unit.
Source: Asian Development Bank.

IV. ASSURANCES

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

V. RECOMMENDATION

31. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and, acting in the absence of the President, under the provisions of Article 35.1 of the Articles of Agreement of ADB, I recommend that the Board approve the loan of $150,000,000 to the People's Republic of China for the Jilin Urban Development Project, from ADB's ordinary capital resources, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; for a term of 25 years, including a grace period of 5 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board.

Bindu N. Lohani
Ranking Vice-President

13 November 2014

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Impact Improved economic growth, resource efficiency, and quality of life in Baicheng and Baishan cities.	**By 2023 (2012 baseline)** Average annual per capita disposable income of urban residents is increased by 7% annually in both Baishan City (from CNY21,282 in 2012) and Baicheng City (from CNY20,154 in 2012) Lifespan of Baicheng and Baishan landfills increased by 8% 30% of solid waste in the two cities is recycled or reused (baseline: less than 5% in 2012) Cost to end users of 1 cubic meter of water reduced by 50% (2012 baseline CNY2.64)	Baicheng and Baishan statistical yearbooks Baicheng statistical yearbooks Baicheng and Baishan statistical yearbooks Baishan water supply company financial report	**Assumptions** City master plans and provincial development plan are implemented Infrastructure is properly maintained Sector road maps are implemented **Risks** Insufficient funds to support implementation of city master plans and provincial development plan
Outcome Improved delivery and efficiency of municipal services in Baicheng and Baishan cities.	**By 2019 (2013 baseline)** Bus priority lanes length in Baicheng will be increased from 0 km in 2013 to 7.2 km Baicheng wastewater collection rate increased from 60% to 75% 20% of MSW (or 60 t/d) in Baishan and Baicheng is sorted for waste reduction, recycling, and reuse Nonrevenue water in Baishan is reduced from 65% to 35% 3,370 jobs will be created during construction and 321 jobs will be created during operation, of which 30% are filled by women and 15% by the poor	Record from BEDZ development progress report Record from BEDZ development progress report Record from Baicheng and Baishan MSW management Water supply data by implementing agency Quarterly reports by PMO and implementing agencies	**Assumption** Government commitment and support for environmentally sustainable urban development **Risk** Actual economic growth and population increases outpace projections
Outputs 1. Improved urban infrastructure in Baicheng	**By 2018 (2013 baseline)** Construction of 32.4 km of roads, two 20-meter span bridges, and one railroad underpass Rehabilitate and construct the following: water supply pipe (36.9 km), sewer pipe (63.2 km) with one pump station, stormwater pipe (59.9 km) and two pump stations, power line (33 km), communication conduit (33 km), street lights, primary heating pipe (28.2 km), and one traffic control and management system	Project CQPRs Project CQPRs	**Assumptions** Project counterpart fund is appropriated timely The project is properly managed and monitored to ensure final implementation is completed in compliance of contract documents. **Risks** Land acquisition approvals and implementation are delayed Consulting firm is not
2. Integrated solid waste management system in	Establish a 30 t/d composting plant and establish 20 recyclate collection points Build 9 MSW transfer stations with 12	Project CQPRs Project CQPRs	

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Baicheng	armed self-loading trucks and 30 compaction containers and other equipment		hired in a timely manner
	Purchase MSW handling equipment, upgrade MSW and street-cleaning equipment, and garbage containers and recycling bins	Project CQPRs	
	Establish 20 community-based solid waste management groups with women accounting for 50% of participants	Project CQPRs	
3. Integrated solid waste management system in Baishan	**By 2018 (2013 baseline)** Construct a 330 t/d MSW sanitary landfill, establish a 30 t/d composting plant and establish 21 recyclate collection points	Project CQPRs	
	Rehabilitate 15 MSW transfer stations with 15 armed self-loading trucks and 30 compaction containers and other equipment	Project CQPRs	
	Purchase MSW handling equipment, upgrade MSW and street-cleaning equipment, and garbage containers and recycling bins	Project CQPRs	
	Establish 21 community-based solid waste management groups with women accounting for 50% of participants	Project CQPRs	
4. Improved water supply management in Baishan	**By 2018 (2013 baseline)** Construct water transmission lines to Jiangyuan district (6.8 km) and Hunjiang district (21.1 km)	Project CQPRs	
	Construct a new waste treatment plant in Hunjiang district with a capacity of 50,000 t/d	Project CQPRs	
	Rehabilitate 11.1 km of existing water distribution line, and construct 44.2 km of new water distribution line	Project CQPRs	
	Install (i) 12 flow and 10 pressure meters to better detect leaks, (ii) advanced leak detection equipment, (iii) a pilot district metered area, and (iv) a supervisory control and data acquisition system	Project CQPRs	
5. Improved capacity and institutional arrangements	**By 2018 (2013 baseline)** Provide training to PMOs and implementing agencies to ensure efficient and effective project implementation and operation, with a target that 30% of participants be women	Project CQPRs	**Assumption** Staff of relevant bureaus, project operation and maintenance entities, and public and related stakeholders participate in capacity development training
	Sex-disaggregated program performance and monitoring system operational (2013 baseline: 0)	Project CQPRs	

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
	Community environment-awareness promotion program for solid waste management implemented with at least 50% of participants women	Project CQPRs	**Risk** Recruitment of the loan implementation consultant is delayed
	Technical support and training for sector road map implementation	Project CQPRs	

Activities with Milestones	Inputs ($ million)	
1. Improved urban infrastructure in Baicheng	ADB ordinary capital resources loan	150.00
1.1 Preliminary design by Q4 2014	Base cost	142.40
1.2 Detailed design by Q1 2015	FCDI	7.60
1.3 Land acquisition and resettlement by Q4 2015		
1.4 Bidding document preparation by Q1 2016		
1.5 Road, bridge, and associated facilities construction by Q3 2018		
1.6 Landscaping and traffic control by Q2 2018		
2. Integrated solid waste management system in Baicheng	Baicheng municipal government	175.50
2.1 Preliminary design by Q4 2014	Base cost	141.11
2.2 Detailed design by Q1 2015	Contingencies	34.39
2.3 Land acquisition and resettlement by Q4 2015		
2.4 Bidding document preparation by Q1 2016		
2.5 MSW composting plant construction by Q3 2016		
2.6 MSW transfer station by Q2 2018		
3. Integrated solid waste management system in Baishan	Baishan municipal government	61.34
3.1 Preliminary design by Q4 2014	Base cost	47.93
3.2 Detailed design by Q1 2015	Contingencies	13.41
3.3 Land acquisition and resettlement by Q4 2015	**Total**	**386.84**
3.4 Bidding document preparation by Q1 2016		
3.5 MSW composting plant construction by Q3 2016		
3.6 MSW sanitary landfill by Q3 2017		
3.7 MSW transfer station by Q3 2018		
4. Improved water supply management in Baishan		
4.1 Preliminary design by Q4 2014		
4.2 Detailed design by Q1 2015		
4.3 Land acquisition and resettlement by Q4 2015		
4.4 Bidding document preparation by Q1 2016		
4.5 Jiangyuan water transmission line by Q3 2017		
4.6 Hunjiang water transmission line by Q4 2017		
4.7 Water treatment plant by Q2 2018		
4.8 Water distribution network by Q3 2019		
5. Improved capacity and institutional arrangement		
5.1 Establish project management system for executing agency, implementing agencies, and project management units by Q4 2014		
5.2 Establish environmental impact assessment and resettlement plans monitoring system by Q1 2015		
5.3 Recruit and mobilize consultants by Q2 2015		
5.4 Establish project performance management system for executing agency and implementing agencies by Q3 2015		
5.5 Implement capacity development by Q4 2018		
5.6 Implement EMP, resettlement plans, GAP, and SAP until Q4 2018		
5.7 Monitor implementation of EMP, resettlement plans, SAP, and GAP until Q4 2018		

ADB = Asian Development Bank, BEDZ = Baicheng Economic Development Zone, CQPRs = completion and quarterly progress reports, EMP = environmental management plan, FCDI = financial charges during implementation, GAP = gender action plan, km = kilometer, MSW = municipal solid waste, PMO = Project Management Office, Q = quarter, SAP = social action plan, t/d = ton per day.
Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

http://adb.org/Documents/RRPs/?id=46048-002-3

1. Loan Agreement
2. Project Agreement
3. Sector Assessment (Summary): Multisector (Solid Waste Management, Water Supply, and Roads and Traffic Management)
4. Project Administration Manual
5. Contribution to the ADB Results Framework
6. Development Coordination
7. Financial Analysis
8. Economic Analysis
9. Country Economic Indicators
10. Summary Poverty Reduction and Social Strategy
11. Gender Action Plan
12. Initial Environmental Examination
13. Resettlement Plan: Baicheng Urban Development Project
14. Resettlement Plan: Baishan Integrated Solid Waste Management Subproject
15. Resettlement Plan: Baishan Urban Water Supply Subproject
16. Risk Assessment and Risk Management Plan

Supplementary Document

17. Procurement Capacity Assessment