

PROJECT PREPARATORY TECHNICAL ASSISTANCE

A. Justification

1. The Xinjiang Regional Government and Akesu Prefecture Government, in consultation with Asian Development Bank (ADB), have identified the project components under the proposed ensuing loan. It is a multisector and technically complex project—requiring full scale due diligence in technical, economic, financial, social, resettlement, environmental, and institutional aspects through a project preparatory technical assistance (PPTA). The PPTA will develop the project suitable for ADB funding, in conjunction with the country partnership strategy, sector and operational experience, international best practices, and lessons from previous projects.

B. Major Outputs and Activities

2. The PPTA have the following expected outputs and activities: (i) an inception report, outlining the overall assessment and implementation plan within the first month of mobilization; (ii) an interim report, including (a) the preparation of a comprehensive project feasibility study, (b) an assessment and detailed recommendation to improve the development plan of the targeted areas, (c) initial plan for socially integrated and water efficient urban development, and (d) recommendations on the project scope in view of such plans, within the fourth month of mobilization; (iii) a draft final report within the sixth month of mobilization; and (iv) a final report addressing comment from Xinjiang Uygur Autonomous Region Government, the executing agency, and ADB one month after the submission of draft final report.

3. The PPTA consulting firm will prepare a comprehensive project feasibility study for an investment project for potential ADB loan financing. Specific outputs and activities of the PPTA will be as follows:

- (i) **Design and monitoring framework.** The consultants, in consultation with all stakeholders, will develop a design and monitoring framework (DMF) in accordance with the Guidelines for Preparing a DMF.¹ The consultants will collect and confirm baseline indicators and develop performance indicators for impact, outcome, and outputs of the project, including income, poverty, employment, health, gender, and other technical, social, and environmental data.
- (ii) **Sector and subsector analysis.** The consultants will review the national, regional, and municipal Twelfth Five-Year Plans, National Spatial Development Plan, Akesu City master plan (2011–2030), and other relevant development plans. The consultants will assess the project rationale and justification based on sector due diligence, lessons learned from previous ADB-funded urban projects in the People's Republic of China (PRC), and international best practices, and give recommendations for further strengthening of the project design and implementation arrangements. The consultants will also examine possible involvement of the private sector in urban services, wherever possible. Reflecting the sector review and analysis, the consultants will prepare the necessary appendixes for the project's report and recommendation of the President (RRP), including (a) sector analysis covering sector roadmap, problem tree, and sector results framework; (b) project's contribution to the ADB results framework; and (c) coordination with development partners for the sector, all of which in accordance with ADB guidelines and templates. The consultants, reflecting the

¹ ADB. 2007. *Project Performance Management System: Guidelines for Preparing a Design and Monitoring Framework (Second Edition)*. Manila.

sector review and analysis, will also identify the area of legal, legislative, regulatory, and institutional strengthening measures in view of effective management and implementation of urban environment management system and services.

- (iii) **Component design.** The consultants will review the technical design of all project components to make sure they are (a) technically sound and socially inclusive, mainly taking in consideration local cultural specificities; (b) environmentally sustainable, focusing on water conservation and climate change adaptation and compatible with local conditions, meet all relevant technical standards and safeguard requirements; and (c) are suitable for ADB financing support. The consultants will assess the (a) methodology and environmental soundness of river enhancement works and flood control measures in view of natural hydrological processes, ecosystem and biodiversity, water quality, and public safety; (b) environmental objectives for sediment dredging and appropriate dredging plan considering performance standards, mitigation measures, and monitoring requirements; (c) river enhancement design and their operation and maintenance; (d) community solid waste management system design and beneficiary reuse or disposal of dredged materials in line with the 3R approach; (e) demand capacities and design standards for utility service systems, and associated treatment facilities; (f) urban road design responding to city-wide urban transport network modeling, nonmotorized transport (NMT) and low-carbon urban development; (g) climate change adaptation measures and (h) nonstructural measures to improve urban environment and transport services. Based on the analyses and best national and international practices, the consultants will recommend improvements to refine the scope and the technical design of each project component.
- (iv) **Economic analysis.** The consultants will conduct economic analyses of the project, including contingent valuation survey and analysis, least-cost analyses, cost effectiveness analyses, and affordability analyses, where applicable, to ensure that the economic analysis meets ADB requirements.² Economic rationale will be developed and economic justification will be evaluated for each project component and the project as a whole. The consultants will prepare the required RRP appendix.
- (v) **Financial analysis.** The consultants will undertake financial review and analysis of each project component as well as detailed assessment of financial performance of Akesu Municipal Government (AMG) and Akesu Urban and Rural Construction Development Group (AURCDG), the implementing agency, in accordance with ADB's guidelines.³ The consultants will prepare the required RRP appendix.
- (vi) **Poverty and social assessment.** The consultants will engage a qualified survey institute to conduct a household survey and community consultations for poverty

² ADB. 1997. *Guidelines for the Economic Analysis of Projects*. Manila; ADB. 2007. *Economic Analysis Retrospective*. Manila; ADB. 2003. *Strengthening the Quality of Project Economic Analysis in ADB Operations*. Manila; ADB. 2003. *ERD Technical Note: Strengthening the Economic Analysis of Natural Resource Management Projects*. Manila; ADB. 2003. *Key Areas of Economic Analysis of Projects*. Manila; ADB. 2002. *Handbook for Integrating Risk Analysis in the Economic Analysis of Projects*. Manila.

³ ADB. 2005. *Financial Management and Analysis of Projects*. Manila; ADB. 2008. *Technical Note: Preparation and Presentation of Cost Estimates for Projects Financed by ADB*. Manila; ADB. 2002. *Financial Governance and Management of Investment Projects*. Manila.

and social analysis in accordance with ADB requirements.⁴ The consultants will prepare a consultation and participation plan, conduct key informant and focus group discussions, analyze survey data, and prepare a poverty and social assessment, which will make recommendations for design, implementation, and monitoring to strengthen the project's development impacts. Based on this analysis, the consultants will prepare a social action plan and a summary poverty reduction and social strategy (SPRSS), in accordance with ADB guidelines and templates.

- (vii) **Gender action plan.** The consultants will prepare a gender action plan, in accordance with ADB guidelines,⁵ with the objective of ensuring that the project design includes and maximizes benefits for women and meets effective gender mainstreaming categorization requirements.
- (viii) **Community participation plan and public awareness campaign program.** The consultants will prepare, through participatory approach, a comprehensive communications strategy and detailed development plan for community involvement and public awareness on urban planning, river ecosystem, environmental protection, public health, 3R-based solid waste management, and road safety based on the 2012 Guidelines on Participation.⁶
- (ix) **Environmental assessment.** The consultants will review the environmental impact assessments (EIA) prepared for each project component and ensure that all EIAs meet the requirements specified in ADB's Safeguard Policy Statement (SPS) (2009). Based on the review, the consultants will prepare a consolidated project initial environmental examination (IEE), including an environmental management plan (EMP) both in English and Chinese in ADB's required format. The consultants will provide guidance to AMG and the local EIA institute on ADB's environmental assessment requirements as laid out in the SPS.
- (x) **Involuntary resettlement assessment and plan.** The consultants will review the draft resettlement plans and assist AMG to engage a qualified survey institute to conduct a survey and improve and finalize the resettlement plans in accordance with ADB requirements.⁷
- (xi) **Ethnic minority (indigenous peoples) assessment and plan.** The consultants will conduct a thorough scoping of ethnic minority issues in the project area and, assist AMG to prepare an ethnic minority development plan in accordance with ADB requirements.⁸ The planning process will ensure local community groups are consulted and participate in project design and implementation.
- (xii) **Risk assessment and management plan.** The consultants will assess the financial management system, accounting rules and practices, administrative procedures, internal control and audit, external audit, and procurement capacity and practices of AMG and the implementing agency. Additional focus will be

⁴ ADB. 2007. *Handbook on Social Analysis*. Manila; ADB. 2006. *Poverty Handbook*. Manila; ADB. 2001. *Handbook for Integrating Poverty Impact Assessment in Economic Analysis of Projects*. Manila; ADB. 2006. *Strengthening Participation for Development Results: Staff Guide to Consultation and Participation*. Manila; ADB. 2006. *Core Labor Standards Handbook*. Manila.

⁵ ADB. 1998. *Policy on Gender and Development*. Manila; ADB. 2010. *Gender Checklists and Toolkit*. Manila.

⁶ ADB. 2012. *Strengthening Participation for Development Results: An Asian Development Bank Guide to Participation*. Manila.

⁷ Safeguards Requirements 2 on Involuntary Resettlement in *Safeguard Policy Statement* (2009).

⁸ Safeguards Requirements 3 on Indigenous Peoples in *Safeguard Policy Statement* (2009).

given to (a) the design of the funds flow and disbursement mechanisms for the ensuing project, based on the financial management assessment of executing/implementing agencies, and (b) identifying any further capacity building (financial management and ADB's disbursement procedures) that will be necessary for the project, based on the results of the financial management assessment. Based on this assessment, the consultants will identify potential project-related risks in three specific thematic issues, namely (a) public financial management, (b) procurement, and (c) anticorruption, and prepare a draft governance risk assessment and management plan. Funds flow and disbursement arrangements will also be identified reflecting the governance assessment.

- (xiii) **Project administration manual.** The consultants will prepare a project administration manual (PAM), which will (a) include a project implementation plan, including project readiness filters; (b) specify project implementation roles and responsibilities of AMG, the implementing agency, and ADB; (c) identify implementation arrangements, including detailed costs and financing plan, financial management, consulting services and procurement, safeguards, performance monitoring, evaluation, reporting and communications, and accountability mechanism; and (d) include an S-curve quarterly projection of contract awards and disbursement for the whole duration of project implementation. The PAM will be prepared through a consultative process and will be agreed-on initially at loan fact-finding.
- (xiv) **Procurement plan and procurement documents.** The consultants will undertake a comprehensive procurement capacity assessment of AMG and the implementing agency in accordance with ADB guidelines and template.⁹ Based on this assessment and technical requirements of each project component, the consultants will prepare a procurement plan. The consultants will also prepare bid documents for the packages under different procurement modes and terms of reference for project implementation consultants.
- (xv) **Institutional strengthening and capacity development plan.** The consultants will prepare a capacity development plan presenting specific actions for trainings and institutional strengthening measures, based on institutional assessment, financial management, procurement, planning, technical engineering, operation and maintenance and project management capacities of AMG, AURCDG, and other concerned stakeholder. This is to enhance the capacity of AMG, the implementing agency, and other concerned agencies to meet the operational needs of ADB loan-funded project implementation, and to ensure future managerial, technical and financial sustainability of operations, including socioeconomically integrated rural-urban transition, integrated water resources management and environmental monitoring, and a 3R-based solid waste management. The consultants will establish the terms of reference of AMG, the implementing agency, PMO, and the project leading group, and conduct training workshops on ADB guidelines and procedures for project processing and implementation.
- (xvi) **Knowledge product.** The consultants will prepare guidance notes for water efficient and socially inclusive urban expansion in small cities with a dual urban-rural economy.

⁹ ADB. 2010. *Procurement Guidelines*. Manila; ADB. 2009. *Guide to EA Procurement Capacity Assessment*. Manila.

4. The major outputs and activities are summarized in Table A4.1.

Table A4.1: Summary of Major Outputs and Activities

| Major Activities | Expected Completion Date | Major Outputs | Expected Completion Date |
|--|---------------------------------|---|---------------------------------|
| Mobilize consultants | III April 2013 | Inception report | IV May 2013 |
| Prepare detailed synchronized processing schedule following domestic and ADB procedures | I May 2013 | | |
| Conduct sector and subsector analysis | II May 2013 | | |
| Assess project components and likely impacts on environment, involuntary resettlement, indigenous peoples, poverty, social, and gender | II May 2013 | | |
| Assess local urban development plan | II May 2013 | | |
| Prepare policy dialogue agenda | II May 2013 | | |
| Prepare TORs and questionnaires of all surveys, modelings, and workshops | II May 2013 | | |
| Procurement | II May 2013 | | |
| Prepare community participation plan/public awareness campaign | II May 2013 | | |
| Assess technical, financial, economic, environmental, social, resettlement, and institutional feasibility | May-August 2013 | Interim report | II August 2013 |
| Conduct socioeconomic surveys, DMF, PPMS, procurement, disbursement, social, gender, environment, and safeguards workshops | April-August 2013 | | |
| Prepare costs and financing plan | June–August 2013 | | |
| Develop capacity development plan | July 2013 | | |
| Reach agreement on improve targeted area and city development plan | June–August 2013 | | |
| Refine technical, financial, economic, social, resettlement, environmental, and institutional assessment and complete relevant loan processing documents | August–October 2013 | resettlement plan, consolidated IEE/EMP, EMDP Draft final report | IV October 2013 |
| Conduct public consultation workshops on project proposals, IEE, EMP, EMDP, and resettlement plan | August–October 2013 | | |
| Prepare detailed costs, financing plan, procurement plan, and PAM | August–October 2013 | | |
| Prepare model bid documents for works under different procurement modes, and TOR for the implementation consultants | August–October 2013 | | |
| DFR workshop and loan fact-finding | November 2013 | | |
| Refine loan processing documents | November 2013–December 2013 | Final report | III December 2013 |

DFR = draft final report, DMF = design and monitoring framework, EIA = environmental impact assessment, EMDP = ethnic minority development plan, EMP = environmental management plan, IEE = initial environmental examination, PAM = project administration manual, PPMS = project performance management system, TOR = terms of reference.

Source: Asian Development Bank estimate.

C. Cost Estimate and Proposed Financing Arrangement

5. The TA is estimated to cost \$725,000 equivalent, of which \$625,000 equivalent will be financed on a grant basis by ADB's technical assistance special fund (TASF-other sources). The government will provide counterpart support in the form of counterpart staff, office accommodation, office supplies, secretarial assistance, domestic transportation, communication facilities for consultants, and other in-kind contributions. The government has been informed that approval of the TA does not commit ADB to finance any ensuing project. The detailed cost estimate is presented in Table A4.2.

Table A4.2: Cost Estimates and Financing Plan
(\$'000)

| Item | Total Cost |
|--|--------------|
| Asian Development Bank^a | |
| 1. Consultants | |
| a. Remuneration and per diem | |
| i. International consultants (17 person-months) | 345.0 |
| ii. National consultants (26.5 person-months) | 145.0 |
| b. International and local travel | 30.0 |
| c. Reports and communications ^b | 10.0 |
| 2. Equipment (computer, printer, etc.) ^c | 10.0 |
| 3. Workshops, training, seminars, and conferences ^d | 15.0 |
| 4. Surveys ^e | 25.0 |
| 5. Miscellaneous administration and support costs ^f | 5.0 |
| 6. Representative for contract negotiations ^g | 5.0 |
| 7. Contingencies | 35.0 |
| Total | 625.0 |

^a Financed by the Asian Development Bank's technical assistance special fund (TASF-other sources).

^b Includes office communications, printing and binding of reports, and translation of inception, interim, draft final, final reports, knowledge product, and other TA output documents into Chinese.

^c Equipment

| Type | Quantity | Cost |
|---|----------|---------|
| Computer (desktop) | 3 | \$4,500 |
| Printer / photocopier / scanner | 1 | \$4,000 |
| LAN equipment | 1 | \$500 |
| Others (projector, digital camera, facsimile, etc.) | 1 each | \$1,000 |

^d Workshops, training, seminars, and conferences

| Purpose | Venue |
|--|----------------------------------|
| ADB inception, interim, and loan fact-finding workshops | Akesu |
| ADB DMF, PPMS, procurement, disbursement, financial management, social, gender, and safeguards trainings | Akesu |
| Other capacity building training workshops | Akesu and venue to be identified |

^e Includes socioeconomic survey, sediment sampling and analysis, and hydraulic survey.

^f Includes office supplies, secretarial support, and interpreting services.

^g Includes cost of travel and per diem for government observers invited for contract negotiations.

Source: Asian Development Bank estimates.

D. Consulting Services

6. An international consulting firm with a total consulting inputs of 43.5 person-months (17 international and 26.5 national) will be engaged on the basis of the quality- and cost-based selection method, with a quality-cost ratio of 90:10, in accordance with ADB's Guidelines on the Use of Consultants (2010, as amended from time to time).

7. The outline terms of references for the PPTA consultants are described in Attachment 1 to Appendix 4.

E. Implementation Arrangements

8. The PPTA will be implemented over 11 months, from 20 April 2013 to 1 February 2014, and will be financially closed on 31 May 2014. The Xinjiang Uygur Autonomous Region Government will be the project executing agency. The Xinjiang project leading group (XPLG) will include representatives of all the relevant regional government agencies, and will be chaired by the vice governor of Xinjiang. XPLG will provide overall guidance, coordination, monitoring, and evaluation to TA implementation. A regional PMO, the Xinjiang project management office (XPMO), has been established at the Xinjiang Housing and Urban Construction Bureau. The project implementing agency is the Akesu Urban and Rural Construction Development Group (AURCDG). Akesu Municipal Government (AMG) has established an Akesu City project leading group (ACPLG) and an Akesu City project management office (ACPMO), which will both report to XPLG and the executing agency. ACPLG will include representatives from relevant city government agencies and will be chaired by the vice mayor. Both ACPLG and ACPMO will be responsible for (i) TA day-to-day activities, (ii) liaison with the regional PMO, and (iii) overseeing the work of the implementing agency. The AMG will provide a suitably furnished office with utilities, telecommunication access, and local city transport for consultants to site visits, materials, maps, data, and documents required by the TA, and will cover the cost of counterpart staff and support staff. The TA equipment will be procured by the consultants in accordance with ADB's Procurement Guidelines (2010, as amended from time to time) and transferred to the executing agency upon TA completion. Disbursements under the TA will be in accordance with ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time).

9. TA reports will be prepared in English and Chinese. Five copies of each report in English will be submitted to ADB, and 10 copies of both English and Chinese reports will be submitted to the executing agency. The consultants will present the key findings of each report in tripartite workshops to be held after the submission of the inception report, interim report and draft final report. The proposed TA processing and implementation schedule is listed in Table A4.3.

Table 4.3: Technical Assistance Processing and Implementation Schedule

| Major Milestones | Expected Completion Date |
|--|---------------------------------|
| TA reconnaissance mission | IV Jun 2012 |
| Concept paper clearance and TA approval | II Dec 2012 |
| Selection and recruitment of consultants | I Apr 2013 |
| Consultant mobilization | III Apr 2013 |
| TA inception report | III May 2013 |
| TA interim report | II Aug 2013 |
| TA draft final report | IV Oct 2013 |
| TA final report | III Dec 2013 |
| Physical completion | IV Feb 2014 |
| Financial completion | IV May 2014 |

Source: Asian Development Bank.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

10. An international consulting firm with a total consulting inputs of 43.5 person-months (17 international and 26.5 national) will be engaged on the basis of the quality- and cost-based selection method, with a quality-cost ratio of 90:10, in accordance with ADB's Guidelines on the Use of Consultants (2010, as amended from time to time). The expertise required is summarized in the table below. Table A4.4 presents a summary of consulting services required.

Table A4.4: Summary of Consulting Services Requirement

| International | | National | |
|---|----------------------|---|----------------------|
| Name of Positions | Person-months | Name of Positions | Person-months |
| Urban infrastructure and planning expert/ team leader | 5.0 | Road and bridge civil engineer / co-team leader | 6.0 |
| Road/ bridge civil engineer | 3.0 | Urban planner | 3.0 |
| River rehabilitation specialist | 3.0 | River rehabilitation specialist | 4.0 |
| | | Solid waste management expert | 1.5 |
| Environment specialist | 2.0 | Environment specialist | 3.0 |
| Resettlement and social development specialist | 2.0 | Resettlement specialist | 3.0 |
| | | Social Development Specialist | 3.0 |
| Project finance and economics specialist | 2.0 | Project finance specialist | 1.5 |
| | | Project economics specialist | 1.5 |
| Total | 17 | Total | 26.5 |

Source: Asian Development Bank Estimates.

11. All international experts must be fluent in English and the national experts must have a reasonable working proficiency in English. The outline terms of reference for the PPTA consultants are described in paras. 8–18.

12. **Team leaders**, 5 person-months international (also international urban infrastructure and planning experts) and 6 person-months national (also national road and bridge civil engineer). Experts shall be professionally qualified and must have at least 15 years (international) and 8 years (national) work experience in managing ADB or other international financing institution project preparation. The experts will

- (i) prepare a detailed work plan for each output and each expert;
- (ii) collect all plans, data, maps, reports, and information required for project preparation;
- (iii) manage and supervise (a) inputs and outputs of all other experts, and (b) quality assurance of all TA outputs in conformity with ADB requirements, and timely delivery of reports and knowledge product;
- (iv) coordinate all activities during PPTA implementation, including (a) liaising with AMG, PMOs, regional and municipal governments, design and survey institutes, and all other concerned stakeholders, and (b) maintaining contact with ADB;
- (v) develop strong rationale of integrated components from the technical, environmental, economic, social, institutional, and urban planning perspectives, and engage innovative features in each component;
- (vi) work with relevant experts to assess private sector participation opportunities in the city municipal services;

- (vii) undertake an overall review of all components in the feasibility study report (FSR) prepared by a design institute and ensure that various alternatives be analyzed and evaluated from the technical, environmental, economic, social, resettlement, institutional, and urban planning perspectives;
- (viii) conducting stakeholder workshops and refine the DMF with baseline and target indicators and measures;
- (ix) review the design parameters to apply to each project component and recommend changes where appropriate;
- (x) assisted by other experts, consolidate the preparation of cost estimates, procurement plan, appropriate contract packaging, implementation schedule, and bid documents;
- (xi) compile baseline and performance targets for impact, outcome, and output indicators relating to all project components;
- (xii) formulate financing and resources plan for operation and maintenance of each component;
- (xiii) work with other experts and carefully assess the implementation capacity of the region and city PMO as well as the implementing agency and prepare a capacity development plan presenting specific actions for trainings and institutional strengthening measures; and
- (xiv) oversee the administration of workshops, training, seminar, and conferences in technical, environmental, economic, social, resettlement, institutional, and urban planning areas, as outlined by the experts.

13. **Urban infrastructure and planning experts**, 5 person-months international (co-team leader) and 3 person-months national. Experts shall be professionally qualified, with a minimum of a graduate degree in urban planning or related field and must have at least 15 years (international) and 8 years (national) work experience in urbanization in the PRC, urban planning, urban redevelopment and upgrading, municipal infrastructure programming and design, and climate change adaptation and mitigation measures for urban areas. Experience in Xinjiang will be an advantage. The experts will

- (i) review the national, regional, and municipal Twelfth Five-Year Plans, Akesu City master plan (2011–2030), and other relevant development and sector plans;
- (ii) provide the strategic territorial development background at the provincial and prefectural level to strengthen the project rationale;
- (iii) review the current urban development plan strategy, master plan, and vision; assess pattern and trend of in-migration from surrounding countryside; and review the population growth forecast;
- (iv) assess Akesu's development potential and urbanization projections, based on which, conduct a critical peer review and assessment of the details of the city development plan, and identify gaps and opportunities to improve planning for urban expansion;
- (v) provide strategic and policy direction to formulate an integrated urban development strategy that is sustainable, with special focus on water efficiency, and that will lead to economic growth, job creation, benefit to the targeted population, and ensure the safeguard of the culturally specified community affected by the project to and address inequities including intra-urban or regional disparities;
- (vi) provide recommendations to AMG in (a) developing and implementing participatory urban planning, and (b) specifying land use planning within the targeted area;

- (vii) assess the economic base and development potential, poverty, and migration issues, and collect and compile basic data and information relating to the urban development, inclusiveness, and competitiveness;
- (viii) assist AMG in initial plan for economically and socially integrated rural-urban transition in Akesu;
- (ix) review the overall development plan of the project areas and demand forecast for provision of piped water supply, sewerage, drainage, district heating, gas, telecommunications, and electricity;
- (x) refine the project scope to better support environmentally sustainable and socioeconomically inclusive urbanization in Akesu. Particularly, work with other experts to formulate a strategy and recommendation for (a) a water resources efficient management based on water demand management, within the project area and formulate a city scale roadmap to promote a water efficient city; and (b) integrating local cultural specificity into the project design and urban master plan;
- (xi) based on the city specific context, i.e., dry and water scarce environment, work with other relevant expert to develop climate change adaptation measures to be implemented in the project design and at the city scale;
- (xii) work with civil engineers and the river rehabilitation specialists to improve the road layouts, transport, communication linkages and river rehabilitation; minimize affected people; and enhance of urban river corridor function according the urban development plan formulated;
- (xiii) work with the civil road specialist to explore transit-oriented development solution and land capture value;
- (xiv) conduct an in-depth review in planning and technical aspects to provide advice in improving urban road plans at the project design stage, taking into account lessons learned from the ongoing urban projects in Xinjiang;
- (xv) assess the capacities of existing and proposed treatment plants for water supply and wastewater, and their adequacy to allow and/or accept flows to and from areas to be served under the project;
- (xvi) assess water demand management and nonrevenue water aspects of the Akesu water supply; and
- (xvii) propose capacity development program.

14. **Road and bridge engineer**, 3 person-months international and 6 person-months national (also co-team leader). The experts shall be professionally qualified, with a minimum of a graduate degree in civil engineering or related field, and must have at least 15 years (international) and 8 years (national) work experience in detailed engineering and design of urban roads and conceptual planning of urban transport network, public transport system, and nonmotorized transport (NMT). Experience in the PRC, particularly Xinjiang, will be an advantage. The expert will

- (i) undertake a technical review of the FSR for roads, underpasses, and bridges component on the suitability of alignments, widths, and capacities for roads, bridges, and underpasses. This should be in line with relevant urban planning and travel demand forecast and comprehensive transport network and service ducts, and their design parameters;
- (ii) provide clear rationale and justification of all proposed road function, connectivity, required capacity, and their direct and indirect beneficiaries;
- (iii) identify opportunities to improve and implement best practice approaches to public transport operations, pedestrian, and NMT accessibility and movement in the project design;

- (iv) assess opportunities and feasibility of private sector participation through performance-based contractual arrangements in public transport;
- (v) review the travel demand forecasts, analyze realistic future development patterns, socioeconomic growth, vehicle ownership trends, bus service levels and network, and road network development;
- (vi) ensure that alignments and design standards for road, underpasses, and bridge are based on sound grounds of travel demand forecasts, comprehensive urban road networks, local socioeconomic development patterns, public transportation system, NMT, and road safety and nonstructural measures are accompanied;
- (vii) work with the resettlement specialist to develop a project component design, which will minimize the number of affected people;
- (viii) review geotechnical data on the ground conditions for roads and prepare terms of reference (TOR) for necessary surveys and investigations;
- (ix) review and prepare a road safety action plan;
- (x) recommend innovative features to promote low-carbon development, NMT, and climate change resilience;
- (xi) recommend associated physical assistance to enhance road safety and energy saving, such as intersection crossing safety measures, traffic monitoring system, solar-powered street lighting, etc.;
- (xii) establish baseline and performance targets for impact, outcome, and output indicators relating to roads component;
- (xiii) provide inputs on cost estimates, procurement plan, appropriate contract packaging, implementation schedule, bid documents, and TORs for project implementation consultants; and
- (xiv) propose capacity development program.

15. **River rehabilitation specialist**, 3 person-months international and 4 person-months national. The experts shall be professionally qualified, with a minimum of a graduate degree in environmental engineering, environmental planning, or related field, and must have at least 15 years (international) and 8 years (national) work experience in integrated water planning, urban water resources management, flood protection works, surface water quality management, hydraulic modeling of urban aquatic system, water balance analysis, sediment dredging, urban river landscaping, and climate change adaptation and mitigation measures and their international best practices. Experience in the PRC, particularly Xinjiang, will be an advantage. The expert will

- (i) assess the rationale and integrity of proposed project components and undertake a technical review of all components in the FSR prepared by the design institute, and ensure that various alternatives be analyzed and evaluated from the technical, environmental, economic, social, resettlement, institutional, and urban planning perspectives;
- (ii) identify social and environmental downstream impacts of river rehabilitation;
- (iii) assess and draw the lesson from the first phase of the Duolang River rehabilitation;
- (iv) assess various design options in view of (a) river hydrology, water balance, and carrying capacity of the river system; (b) environment and ecology; (c) key stakeholders and beneficiaries; (d) engineering and financial constraints, (e) capacity of AMG and the implementing agency; (f) river landscaping; (g) geotechnical stability; (h) community participation; (i) resilience to climate change; (j) potential downstream impacts on ecosystems, ecological services,

- and local livelihood systems; and (k) related policies, regulations, plans, and projects;
- (v) work with the resettlement specialist to develop a component design, which will minimize the number of affected people;
 - (vi) identify objectives for sediment dredging, selected locations for dredging, amount of sediments to be dredged (disaggregated data for polluted and non-polluted sediments), dredging methodology, dredged material pre-treatment, transportation, temporary storage, beneficiary reuse and disposal (if reuse is not feasible), and develop appropriate dredging plan considering performance standards, mitigation measures, and monitoring requirements in accordance with international best practice;
 - (vii) assess connectivity of utility pipe networks and their impacts on the receiving water bodies, particularly the drainage network on the Duolang River;
 - (viii) assess pollution impact by different sources within catchment area;
 - (ix) ensure that river enhancement works adopt environmentally sound and socially inclusive design using only native and non-invasive species;
 - (x) develop an integrated river enhancement design to promote eco-engineering techniques rather than concrete structure, maximize green area and park lane and natural buffer zones, and minimize resettlement impact;
 - (xi) recommend innovative features in urban river enhancement works and flood protection to enhance environmental sustainability, climate change resilience, and cost effectiveness;
 - (xii) recommend sustainable non-infrastructure measures, such as integrated water resources management, efficient flood and drought management plan, and environmental protection plan;
 - (xiii) based on sector analysis, identify area of legal, legislative, regulatory and institutional strengthening measures in view of effective management and implementation of urban environment management system and services, and prepare indicative maintenance and operating plan and propose capacity development activities for concerned agencies;
 - (xiv) with the assistance of PPTA environmental and social development experts, implement targeted environmental and social surveys to ensure environmentally sound river enhancement;
 - (xv) establish baseline and performance targets for impact, outcome, and output indicators relating to the river enhancement component;
 - (xvi) provide inputs on cost estimates, procurement plan, appropriate contract packaging, implementation schedule, bid documents, and TORs for project implementation consultants; and
 - (xvii) identify the area of institutional strengthening measures and capacity development program in view of effective solid waste management and community participation.

16. **Solid waste management expert**, 1.5 person-months national. The expert shall be professionally qualified, with a minimum of a graduate degree in civil engineering or related field, and must have 8 years work experience in solid waste management and community-based waste management projects for medium sized cities. Experience in the PRC, particularly Xinjiang, will be an advantage. The expert will

- (i) undertake a technical review of the FSR for waste collection system and community-based solid waste management, strengthen design standards, national safety, and social and environmental requirements;

- (ii) conduct options analysis on different methods of collection, sorting, recycling, reuse, transferring system, facilities' locations, and engineering specifications;
- (iii) facilitate public consultation, with special focus on potential future affected people, in proximity of the planned collection and transfer stations;
- (iv) ensure that the component design (a) includes public awareness and community participation in 3R-oriented solid waste system and potential private sector participation, and (b) considers adopting solid waste tariff for cost recovery;
- (v) establish baseline and performance targets for both output and outcome indicators relating to solid waste management;
- (vi) establish baseline and performance targets for impact, outcome, and output indicators relating to the river enhancement component;
- (vii) research on the capacity, design life, process technology, and operational problem of the existing collection, transfer, and disposal system;
- (viii) provide inputs on cost estimates, procurement plan, appropriate contract packaging, implementation schedule, bid documents, and TORs for project implementation consultants; and
- (ix) identify the area of institutional strengthening measures and capacity development program in view of effective solid waste management and community participation.

17. **Environment specialist**, 2 person-months international and 3 person-months national. The experts shall be professionally qualified, with a minimum of a graduate degree in environmental planning or related field, and must have at least 15 years (international) and 8 years (national) work experience in environmental impact assessment preferably for urban environmental infrastructure, peri-urban area redevelopment, urban water course rehabilitation and flood control, and urban road projects. Experience in the PRC, particularly Xinjiang, will be an advantage. The experts will

- (i) submit semiannual progress reports management and monitoring, and recommend capacity building measures;
- (ii) advise the AMG and the design institutes on the environmental impact assessment (EIA) requirements specified in ADB's Safeguard Policy Statement (SPS) (2009), and review the EIAs prepared for each project component and make sure that all EIAs meet the requirements specified in the SPS;
- (iii) for project preparatory technical assistance (PPTA) and implementation, prepare a joint environmental and social consultation and participation plan (in coordination with the environmental specialists), and conduct key informant, focus group discussions and interviews, survey project beneficiaries by stakeholders groups, (e.g. gender, income group, and ethnicity), and identify vulnerable groups, including migrant workers;¹⁰
- (iv) prepare a consolidated project initial environmental examination (IEE) and environmental management plan (EMP) following the format and contents specified in the annex to appendix 1 of the SPS and ensure rigor in the English version of the consolidated project EIA, including the EMP; ensure that the EMP includes the proposed mitigation measures, environmental monitoring and reporting requirements, related institutional or organizational arrangements, capacity development and training measures, implementations schedule, cost estimates, and performance indicators;

¹⁰ Explore the possibility of an integrated social and environmental grievance redress mechanism.

- (v) evaluate the environmental appropriateness of project components and recommend environmentally friendly options for project component design and construction, including potential use of clean energy sources, reduction of greenhouse gas emissions, and climate change adaptation options;
- (vi) work with the urban planners to formulate a strategy and recommendations for water resources efficient management based on water demand management in the project area and at the city scale;
- (vii) conduct detailed assessment of environmental impacts of river enhancement works and assess downstream environmental impacts and potential application of adaptive environmental management for the river component, including an assessment of the cumulative impacts of all project components on the environment;
- (viii) assess ecological value of the river and establish robust ecological baseline and performance targets;
- (ix) ensure that dredging objectives, selected locations, quantities (disaggregated data for polluted and non-polluted sediments), methods, pre-treatment, transportation, storage, reuse and disposal, water quality and aquatic ecological impacts, performance standards, mitigation measures, and monitoring requirements are clearly identified and assessed in the EIAs;
- (x) ensure project compliance with internationally accepted standards and guidelines, such as the World Bank Group's Environmental, Health, and Safety Guidelines;
- (xi) assist AMG with meaningful stakeholder participation, consultation, and involvement during preparation of EIAs and disclosure of relevant information;
- (xii) discuss with AMG and help develop a project-level grievance redress framework covering formal and informal channels, and setting out the timeframe and mechanisms for resolving complaints about environmental performance;
- (xiii) conduct due diligence of project associated facilities, as relevant;
- (xiv) provide environment safeguards related inputs to the project administration manual (PAM), and prepare TOR and budget requirements for environment monitoring and evaluation during project implementation;
- (xv) present the project EIA findings during the peer review in ADB and revise the consolidated project IEE based on comments received from ADB and external reviewers: and
- (xvi) explore the possibility of an integrated social and environmental grievance redress mechanism;

18. **Resettlement and social development specialists**, 2 person-months international and 2 x 3 person-months national. The experts shall have a minimum of a graduate degree in a relevant field with experience in social sector surveys and analyses with at least 15 years (international) and 8 years (national) work experience in resettlement, indigenous peoples, and gender and social impact assessments, preferably for urban environmental infrastructure, peri-urban area redevelopment, urban water course rehabilitation and flood control, and urban road projects. Experience in the PRC, particularly Xinjiang, will be an advantage.

19. Social development activities will focus on:

- (i) review of the current poverty reduction policies and regulations related to urban development in AMG, Xinjiang, and the PRC;

- (ii) review of the poverty situation in Akesu and project areas and assess the project's potential impact on the poor; key stakeholders identification and analysis;
- (iii) preparation of a joint environmental and social consultation¹¹ and participation plan (in coordination with the environmental specialists) for PPTA and implementation, and conduct key informant, focus group discussions and interviews, survey project beneficiaries by stakeholders groups (e.g. gender, income group, and ethnicity), identification of vulnerable groups including migrant workers, and estimation of the share of beneficiaries falling below the official poverty line;
- (iv) assist the finance specialist/economist with formulation of contingent valuation survey;
- (v) design of the questionnaire for the household surveys for poverty, social, and gender, then use survey results to assess the social, gender and poverty reduction impact, and assist in conducting a distribution analysis of economic benefits;
- (vi) providing assistance to the economist to conduct affordability analysis for the improved services, and the beneficiaries' willingness to pay the tariffs and to contribute to and participate in the formulation, implementation, and operation and maintenance of the subprojects;
- (vii) collection and analysis of socioeconomic baseline data and performance targets, gender, income, and ethnicity, which will be used to develop indicators in the design and monitoring framework (DMF), SAP, SPRSS, and project performance management system (PPMS);¹²
- (viii) assessment of project impacts and recommend social mitigating measures (including labor and HIV/AIDS) based on the poverty, social, and gender analysis and consultations, and design of options to maximize benefits;
- (ix) preparation of the GAP in accordance with ADB guidelines, including measures to enhance the project benefits;
- (x) necessary awareness-raising campaign and stakeholder participation workshops to help stakeholders understand, including social impacts of the proposed project and their opportunities, duties, and responsibilities;
- (xi) recommendation of measures and methodologies to strengthen inclusive and participatory aspects in designing and implementing the projects, and identification of components or subcomponents in each proposed project to involve gender-inclusive community participation;
- (xii) with the team leader, recommendation of targeted assistance and institutional support for socioeconomically inclusive rural-urban transition integrating of local cultural specificity into the project design and the urban master plan;
- (xiii) orientation of AMG and the implementing agency on the SPS requirements and procedures, assessment of the policy and legal frameworks for ethnic minorities in the PRC, and proposal of measures to bridge any gap between ADB and PRC policies;
- (xiv) thorough scoping of ethnic minorities in the project area and possible social impacts and assistance to AMG in the preparation of the EMDP, in accordance

¹¹ Explore the possibility of an integrated social and environmental grievance redress mechanism.

¹² The gender categorization of the project is effective gender mainstreaming, which requires at least 50% of outputs to be engendered and reflected in the DMF with relevant indicators and performance targets.

- with the SPS, focusing on minimizing risks, maximizing benefits and ensuring effective consultation with and participation of ethnic minorities;¹³ and
- (xv) assisting the implementing agency to establish a suitable grievance redress mechanism (GRM) for the EMDP considering the possibility of an integrated social and environmental grievance redress mechanism.

20. Resettlement activities will focus on:

- (i) reviewing of the draft resettlement plans and modification, as required, in compliance with the SPS,¹⁴ and assistance to the implementing agency in preparing and finalizing the resettlement plans;
- (ii) assessment of the planned land use change or restriction to land use in the New District and local regulations for resettlement, and proposal of measures to bridge any gap between ADB and local policies;
- (iii) assessing the extent to which the project design has avoided or minimized land acquisition and displacement of people and businesses;
- (iv) review of the results of the resettlement surveys, conducting additional resettlement household surveys and analysis, as necessary and analyzing the results to ensure adequate social impact assessment;¹⁵
- (v) preparing a due diligence report, including policy gap analysis between ADB, PRC, and local policies for land that has been already acquired in anticipation of ADB project needs to ensure that there are no outstanding land acquisition and resettlement issues. In case there are outstanding issues, a corrective action plan needs to be prepared, and which can be incorporated into the resettlement plans;
- (vi) preparation of SPRSS, addressing all social dimensions following the new ADB guidelines;¹⁶
- (vii) definition of categories for impact and compensation eligibility of affected people (registered/unregistered) losing land, housing, and businesses and prepare an entitlements matrix based on PRC laws and regulations, and the SPS covering compensation and other assistance for all types of impacts to achieve full replacement for lost assets, income, and livelihoods (direct and indirect);
- (viii) assessing potential impoverishment risks and vulnerable groups, including those (a) severely affected through loss of land, (b) with low income, and (c) others (e.g., disabled, elderly, ethnic minorities, unemployed, illiterate, women, and children), and development of special mitigation measures, as required;
- (ix) identification of (a) compensation and rehabilitation options, and development of neighborhood level livelihood economic rehabilitation and improvement programs, in consultation with affected people; (b) options for livelihood improvement arrangements; and (c) training needs of affected persons based on age group and existing skills, specifying a skills training program in order to secure jobs. Conduct an (a) assessment of the employment opportunities available and access of affected persons to these opportunities; and (b) assessment of the social security benefits and support that will be made available to affected persons;
- (x) assessment and justification of (a) compensation standards that are based on replacement value, and (b) the overall resettlement budget, which is sufficient to

¹³ Operations Manual section F1 and Safeguard Requirements 3: Indigenous Peoples for the project.

¹⁴ Operations Manual section F1 and Safeguard Requirements 2: Involuntary Resettlement.

¹⁵ For household surveys, ADB requires 10% to 20% of affected people and enterprises, including 20% of seriously affected people.

¹⁶ ADB. 2012. *Strengthening Participation for Development Results: An ADB Guide to Participation*. Manila.

- acquire the land and implement the resettlement plans based on the proposed entitlements and rehabilitation plans;
- (xi) review of the organizational structure and capacity to implement resettlement, and recommend improvements and actions before land acquisition and resettlement;
- (xii) establishing a suitable GRM for the resettlement plans and EMDP to handle complaints in an effective manner, considering the possibility of an integrated social and environmental GRM;
- (xiii) preparation of a summary resettlement plan and a detailed resettlement implementation schedule that is linked to the overall project implementation schedule and provide inputs to PAM;
- (xiv) assisting AMG develop an internal and external monitoring and evaluation plan, specifying key indicators of progress, mechanisms for reporting, resource requirements, and database maintenance;
- (xv) preparation of a TOR for independent resettlement monitoring and evaluation;
- (xvi) assessment of the capacity of executing and implementing agencies to implement the resettlement plans, EMDP, SAP, and GAP and recommend required measures for capacity building.¹⁷ The consultant will also provide training to the executing and implementing agencies in ADB's resettlement and ethnic minorities' planning and implementation requirements; and
- (xvii) assisting the executing agency in preparing a public consultation and disclosure plan and initiate a participatory process for preparing and implementing the resettlement plans and ethnic minority development plan among the affected persons.

21. **Project finance and economics specialist**, 2 person-months international and 2 x 1.5 national. The experts shall have relevant qualifications, with a minimum of a graduate degree in a finance, economics, or related field. The experts should have technical knowledge in economic and financial analyses, financial management assessment, procurement capacity assessment and governance risk assessment. At least 15 years (international) and 8 years (national) work experience preferably for urban environmental infrastructure, peri-urban area redevelopment, urban water course rehabilitation and flood control, and urban road projects. The expert should be knowledgeable in procurement in general. Understanding in ADB procurement policies and procedures will be an advantage. Experience in the PRC, particularly Xinjiang, will be an advantage. Economic analysis activities will focus on:

- (i) economic analysis for each project component and for the overall project in accordance with ADB's Guidelines for Economic Analysis of Projects and other relevant policies and guidelines. The analysis will include economic rationale, demand analysis, least-cost analysis, cost effectiveness analysis, affordability analysis, distribution analysis (welfare and health impact of each project component on the poorest households will be estimated separately), contingent valuation, quantification of economic benefits and costs, evaluation of the economic viability of each project component and of the project as a whole, and risk and sensitivity analyses;
- (ii) review of the economic rationale for each project component, and recommendation of changes to the proposed role of government in each as needed;

¹⁷ In components where farmers will lose a portion land, once for ADB-financed project, and then the entire farmland in future due to planned urban development, in such cases the livelihood restoration should be designed assuming that the farmers would suffer total land loss.

- (iii) assessment of the social and economic justification for each project component and the project as a whole, based on government's goals, objectives, policies and plans relating to general social and economic development, urban/rural development, and actual development and urbanization patterns;
- (iv) with the assistance of sector experts, an evaluation of the demand for component services, considering population and economic growth, efficiency of service delivery, and change in service charges;
- (v) all quantifiable and non-quantifiable economic benefits (incremental and non-incremental) and costs of each component;
- (vi) review of the travel demand forecasts, working with the urban development expert and road engineer, ensuring that forecasts are based on relevant socioeconomic factors, and economic benefits estimates on relevant components in terms of reduction in travel time, reliability and convenience, vehicle operating costs, accidents, vehicle emissions, and other potential benefits;
- (vii) economic benefits estimates, working with the work resources management expert of the relevant components, in terms of health impact, public amenity value, and other potential benefits;
- (viii) formulation of contingent valuation survey and household survey, and evaluation of beneficiaries' willingness-to-pay for the component benefits, as appropriate and in consultation with social development expert;
- (ix) affordability analysis and distribution analysis following methodology set forth in ADB guidelines;
- (x) assessment of alternative options for each component and complete the economic least-cost analysis with the assistance of sector experts,;
- (xi) estimate of economic internal rate of return for each component and the project as a whole, and sensitivity and risk analysis;
- (xii) development of economically sound indicators of the health impact of the subprojects, and use of household survey and other relevant sources to develop baseline and performance target indicators;
- (xiii) ADB's funds that are fungible and, if so, investigation in the marginal impact of ADB's funds on government expenditure;
- (xiv) evaluation of local policies and procedures relative to ADB's, and the role of ADB relative to any other foreign aid agencies working in Xinjiang, and identify potential conflicts in policies and procedures;
- (xv) assisting the team leader carry out project appraisal to specify assurances and other conditions attached to the loan; and
- (xvi) assisting ADB project economist in finalizing (a) the economic analysis, (b) financial analysis, (c) cost estimates and financing plan, (d) financial action plan, (e) urban and municipal finance reform agenda and associated loan covenants, and (f) assessment of the project benefits, impacts, assumptions, and risks.

22. Financial analysis activities will focus on:

- (i) review of the cost estimates and financing plan prepared for the project, and assessment of the financial viability and sustainability of each component and the project as a whole, in accordance with ADB's Guidelines for Financial Management and Analysis of Projects and other relevant guidelines. The analysis should include a review of cost recovery mechanisms and give recommendations for strengthening the financial sustainability of project components and the sector as a whole;

- (ii) financial management assessments of AMG and implementing agency, including the financial management system, accounting rules and practices, administrative procedures, internal control and audit, and external audit. Based on the financial management assessment, identify funds flow and disbursement mechanisms and identify any further capacity building (on financial management and ADB's disbursement procedures) that will be necessary for the project;
- (iii) clarification with the executing agency the charges on maturity-based pricing of the loan¹⁸ that will be imposed for the loans negotiated on and after 1 April 2013 and the applicability of maturity premium in the early stage of loan processing;
- (iv) potential project-related risks in three specific thematic issues, namely, (a) public financial management, (b) procurement, and (c) anticorruption based on their procurement assessment and financial management assessment, and prepare a governance risk assessment and management plan.
- (v) preparation of S-curve projections for quarterly contract awards and disbursement throughout project implementation period;
- (vi) providing financial information and analysis to the economist, relevant to financing and operations and maintenance of project outputs;
- (vii) assessment of alternative options for each component and completion of the economic least-cost analysis with the assistance of sector experts and the economist;
- (viii) review of the financial performance of executing and implementing agencies for the past five years and evaluate their financial capacity regarding cost recovery, borrowing capacity, debt servicing, collection of fees and taxes, accounts receivable, and subsidies, as appropriate;
- (ix) assessment of the financial sustainability of the project components, including their financial internal rates of return, and perform sensitivity and risk analysis including switching value calculation and calculation of the real weighted average cost of capital;
- (x) review of cost recovery mechanisms, and recommendations for strengthening the financial sustainability of project components and the sector as a whole;
- (xi) assessment of financial management on the basis of the questionnaire checklist provided by ADB, and review of current accounting and administrative capacities of the executing agency, and with the implementing agency, the internal control system employed, current internal audit, external or government audit, and recommend any changes as appropriate;
- (xii) procurement capacity assessment of the executing and implementing agencies;
- (xiii) areas for improvement and training needed with respect to the quality of financial statements, disclosure, and notes to the financial statements;
- (xiv) design of a fund-flow mechanism disbursement arrangements following ADB procedures and based on the project needs and the capacity of the executing and implementing agencies to manage fund flow and disbursements;
- (xv) recommendation of a market-based policy instruments for controlling pollution and assess the feasibility of such instruments;
- (xvi) training during the TA, particularly in the workshops focusing on ADB procedures for financial analysis and financial management analysis, ADB procurement policies and procedures, and disbursement; and

¹⁸ The maturity-based pricing include (i) a 10 bps premium on new loans with average loan maturity of greater than 13 years up to 16 years, and (ii) a 20 bps premium on new loans with average loan maturity of greater than 16 years up to 19 years.

- (xvii) assistance to ADB project economist in finalizing (a) financial analysis, (b) cost estimates and financing plan, (c) financial action plan, (d) urban and municipal finance reform agenda and associated loan covenants, and (e) assessment of the project benefits, impacts, assumptions, and risks.