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Report No: PAD480

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US$ 100 MILLION

TO THE

PEOPLE'S REPUBLIC OF CHINA

FOR A

SICHUAN CHONGQING COOPERATION: GUANG'AN DEMONSTRATION AREA INFRASTRUCTURE DEVELOPMENT PROJECT

February 20, 2015

Social, Urban, Rural and Resilience Global Practice
East Asia and Pacific Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective August 1, 2014)

Currency Unit	=	Renminbi (RMB)
US$1	=	RMB6

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

BCA	Benefit-and-cost Analysis
BOT	Build-Operate-Transfer
COD	Chemical Oxygen Demand
DA	Designated Account
DI	Design Institute
DRC	Development and Reform Commission
EA	Environment Assessment
EIA	Environment Impact Assessment
EIRR	Economic Internal Rate of Return
EMP	Environmental Management Plan
EMR	Extended Metropolitan Region
ENPV	Economic Net Present Value
FIRR	Financial Internal Rate of Return
FM	Financial Management
FMM	Financial Management Manual
FNPV	Financial Net Present Value
EMP	Environmental Management Plan
EOCK	Economic Opportunity Cost of Capital
ETDZ	Economic and Technological Development Zone
GDP	Gross Domestic Product
GPMO	Guang'an Prefecture Project Management Office
HRSS	Department of Human Resources and Social Security
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
ICOR	Incremental Capital Output Ratio
LCG	Linshui County Government
LPMO	Linshui Project Management Office
LVS	Linshui County Vocational High School
LCYIDC	Linshui County Yuanfeng Industry Development Company
MOF	Ministry of Finance
NCB	National Competitive Bidding
NDRC	National Development and Reform Commission
NPV	Net Present Value

O&M	Operation & Maintenance
OP/BP	Operational Policy/Bank Procedure
ORAF	Operational Risk Assessment Framework
PAP	Project Affected Persons
PDO	Project Development Objective
PIA	Project Implementing Agency
PLG	Project Leading Group
PMO	Project Management Office
QDG	Qianfeng District Government
QPMO	Qianfeng Project Management Office
QDXIC	Guang'an Prefecture Qianfeng District Xinhong Investment Company Limited
RAP	Resettlement Action Plan
SEA	Strategic Environmental Assessment
SPAO	Sichuan Province Audit Office
SPFD	Sichuan Province Finance Department
TA	Technical Assistance
TOR	Terms of Reference
WACC	Weighted Average Cost of Capital
WBG	World Bank Group
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

Regional Vice President:	Axel van Trotsenburg, EAPVP
Country Director:	Bert Hofman, EACCF
Senior Director:	Ede Ijjasz-Vasquez, GSURR
Practice Manager:	Abhas K. Jha, GSURR
Task Team Leader:	Joanna Masic, GSURR

CHINA: Sichuan Chongqing Cooperation:
Guang'an Demonstration Area Infrastructure Development Project

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PAD DATA SHEET

CHINA: Sichuan Chongqing Cooperation:

Guang'an Demonstration Area Infrastructure Development Project

Basic Information		
Project ID P133456	EA Category A - Full Assessment	Team Leader Joanna Masic
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]	
Project Implementation Start Date 01-Mar-2015	Project Implementation End Date 31-Mar-2020	
Expected Effectiveness Date 01-Aug-2015	Expected Closing Date 30-Sept-2020	
Joint IFC No		

Practice Manager	Senior Global Practice Director	Country Director	Regional Vice President
Abhas K. Jha	Ede Jorge Ijjasz-Vasquez	Bert Hofman	Axel van Trotsenburg

Borrower: People's Republic of China			
Responsible Agency: Guang'an PMO			
Contact:	Xiong Xiangjian	Title:	PMO Director
Telephone No.:	86-82-62321503	Email:	fuchunlin999@163.com

Project Financing Data(in USD Million)					
[X] Loan	[ ] IDA Grant	[ ] Guarantee			
[ ] Credit	[ ] Grant	[ ] Other			
Total Project Cost:	203.31		Total Bank Financing:	100.00	
Financing Gap:	0.00				

Financing Source	**Amount**
Borrower	103.31
International Bank for Reconstruction and Development	100.00
Total	203.31

Expected Disbursements (in USD Million)

Fiscal Year	2015	2016	2017	2018	2019	2020	2021
Annual	0.00	5.00	5.00	20.00	20.00	30.00	20.00
Cumulative	0.00	5.00	10.00	30.00	50.00	80.00	100.00

Institutional Data

Practice Area / Cross Cutting Solution Area

Social, Urban, Rural and Resilience Global Practice

Cross Cutting Areas

[X] Climate Change

[ ] Fragile, Conflict & Violence

[X] Gender

[X] Jobs

[ ] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Transportation	Urban Transport	59	10	10
Water, sanitation and flood protection	General water, sanitation and flood protection sector	38	15	
Education	Vocational training	3		
Total		100		

☐ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Urban development	City-wide Infrastructure and Service Delivery	65
Financial and private sector development	Infrastructure services for private sector development	35
Total		100

Proposed Development Objective(s)	
The proposed Project Development Objective is to improve Linshui County and Qianfeng District infrastructure and investment support services.	
Components	
Component Name	**Cost (USD Millions)**
Component 1: Technical Assistance	0.60
Component 2: Linshui County Town	64.39
Component 3: Qianfeng District Town	42.62
Component 4: Project Management and Capacity Building	1.77

Compliance

Policy	
Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]
Does the project require any waivers of Bank policies?	Yes [ ] No [X]
Have these been approved by Bank management?	Yes [ ] No [ ]
Is approval for any policy waiver sought from the Board?	Yes [ ] No [ ]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X] No [ ]

Safeguard Policies Triggered by the Project	**Yes**	**No**
Environmental Assessment OP/BP 4.01	**X**	
Natural Habitats OP/BP 4.04	**X**	
Forests OP/BP 4.36		**X**
Pest Management OP 4.09		**X**
Physical Cultural Resources OP/BP 4.11	**X**	
Indigenous Peoples OP/BP 4.10		**X**
Involuntary Resettlement OP/BP 4.12	**X**	
Safety of Dams OP/BP 4.37		**X**
Projects on International Waterways OP/BP 7.50		**X**
Projects in Disputed Areas OP/BP 7.60		**X**

Legal Covenants			
Name	**Recurrent**	**Due Date**	**Frequency**

Cumulative Strategic Environmental and Social Impact Assessment		31-Dec-2018	

Description of Covenant

PA Schedule I C. 7. To conduct the second phase assessment of the cumulative strategic environmental and social impact assessment of overall urban and industrial growth no later than December 31, 2017 and prepare an action plan for the implementation of said assessment by December 31, 2018.

Name	Recurrent	Due Date	Frequency
Financial and Operational Sustainability		01-Jan-2018	

Description of Covenant

PA Schedule IV A. 1. Linshui County Number 3 Wastewater Treatment Plant to generate total revenues equivalent to and not less than its total operating expenses, excluding depreciation.

Name	Recurrent	Due Date	Frequency
Project Management		31-Dec-2015	

Description of Covenant

PA Schedule IV B. 1 and 5(a) and (b). The project implementing entity to employ an independent environmental monitoring consultant to assist the project participants in ensuring compliance with the safeguards instruments by September 30, 2015; and a project management consulting firm and engineering consulting firm to assist with project implementation by December 31, 2015.

Name	Recurrent	Due Date	Frequency
Wastewater Treatment Plant		31-Oct-2017	

Description of Covenant

PA Schedule IV B. 2-5. The project participants to enter into a contract for the operation and maintenance of: Linshui County Number 3 WWTP; Linshui County Number 2 WWTP; and Qianfeng District Western Cowboy WWTP by October 31, 2017, December 31, 2016 and September 30, 2015, respectively.

Conditions

Source Of Fund	Name	Type
IBRD	Subsidiary Agreement	Disbursement

Description of Condition

Conditions in Section IV.B.1 (b) and (c). No withdrawal shall be made under Disbursement Categories 1(a) and 2(a), until the Bank has notified of its receipt of the Subsidiary Agreement between Linshui County and its Respective Project Company; and under Categories 1(b), 2(b) and 2(c), until the Bank has notified of its receipt of the Subsidiary Agreement between Qianfeng District and its Respective Project Company.

Source Of Fund	Name	Type

IBRD	Condition in Section IV.B.1 Part B. 1 (d)	Disbursement

Description of Condition

No withdrawal shall be made under Disbursement Category 2(b) until the Bank shall have received a duly executed copy of the contract for the construction of the Keta Road Link (Component 3[a]).

Team Composition

Bank Staff

Name	Title	Specialization	Unit
Alejandro Alcala Gerez	Senior Counsel	Legal	LEGES
Giovanni Bo	Counsel	Legal	LEGES
Yi Geng	Senior Financial Management Specialist	Financial management	GGODR
Huiying Guo	Program Assistant	Project coordination	EACCF
Joanna Masic	Senior Urban Specialist	Urban	GSURR
Liping Xiao	Senior Education Specialist	Education	GEDDR
Dan Xie	Program Assistant	Coordination	EACCF
Ning Yang	Senior Environmental Specialist	Environment	GENDR
Guoping Yu	Senior Procurement Specialist	Procurement	GGODR
Zhihua Zeng	Senior Economist	Industry	GTCDR
Jun Zeng	Senior Social Development Specialist	Social Development	GSURR
Ximing Zhang	Senior Water Resources Specialist	Water Resources	GWADR
Yan Zong	Transport Specialist	Transport	GTIDR

Non Bank Staff

Name	Title	City
Eddie Ke-Siong Hum	Senior Municipal Engineer	Singapore
Edward Leman	Senior Regional Planner	Toronto
Yan Li	Economist and Financial Specialist	Washington, DC
Rufei Zhang	Senior Urban Planner and Institutional Specialist	Shanghai

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
China	Sichuan	Guang'an		**X**	Guang'an Prefecture, Sichuan Province

I. STRATEGIC CONTEXT

A. Country Context

1. In transitioning from a low- to upper-middle income country, China has avoided some common problems of a fast urbanizing society, such as large-scale urban poverty and unemployment. Yet other strains are showing. A reliance on land financing for infrastructure investments has led to inefficient use of land and resources, wasteful and sprawling developments, with significant environmental impacts. A focus on developing the eastern region of the country has helped concentrate and spur economic growth but has led to growing regional disparities. As a result huge numbers of rural migrants have gravitated to cities in the east for work. However, the majority of these migrant workers have not been accompanied by their families because of a lack of access to urban public services, particularly education, which remains linked to household registration in their place of origin. Such barriers have kept urbanization levels relatively low, at just over fifty percent, compared to other countries at this stage of development.

2. By 2030, China aims to transition to high-income status with an urban population of seventy percent – some 1 billion people. According to a recent study by the World Bank and the Development Research Center of China's State Council, urbanization is expected to remain a powerful driver of growth but is in itself insufficient for meeting this high-income goal.[1] In the coming decades, China will face additional challenges of slower growth, rapid population aging, decreasing rural to urban migration, and a shrinking labor force. At the same time the east coast economy is expected to transition to high-skilled manufacturing and services with labor-intensive manufacturing relocating inland. Recognizing these challenges and trends as well as opportunities for redressing regional disparities and the rural-urban divide, national-level development plans reflect a desire to move towards more efficient, inclusive and sustainable urbanization.

3. The National Plan on New Urbanization (2014-2020) prioritizes the integration of 234 million rural migrants and their children into urban areas and public services. It also refers to the need to optimize urban spatial layout and concentrate development in key urban systems, focusing on regions that have potential for urbanization and agglomeration and can create spillovers benefiting surrounding cities and towns. The priority for city clusters in the central-west is for them to become regional economic centers, concentrating relocating industries and return migrants from the east as well as providing new migrants with jobs and urban services for their families closer to home. Development of these new urban areas is expected to be in keeping with actual population growth rates to avoid wasteful use of land and resources and within the limits of local environmental carrying capacities.

B. Sectoral and Institutional Context

4. The Sichuan Plain Urban System is made up of dispersed settlements spanning across Sichuan Province to Chongqing Municipality, including the western region's largest

[1] World Bank and DRC, China. 2014. Urban China: Toward Efficient, Inclusive, and Sustainable Urbanization. Washington DC. World Bank.

metropolitan economies - Chengdu and Chongqing. The area's total population declined from 94.4 to 89 million between 2000 and 2010 largely through outmigration. Despite this net loss of over 5 million residents, urbanization has been substantial. The urban population grew by 12 million to reach 41 million in 2010 primarily through urban expansion and rural to urban migration.

5. Sichuan ranks in the bottom third and Chongqing in the bottom half of China's 31 provinces in terms of the United Nations Human Development Index - a ranking of key human development indicators including life expectancy, education and income.[2] The whole system is affected by natural hazards and earthquakes. As such, the region's development has for decades been a priority of national poverty alleviation plans and regional development strategies as well as emergency relief and recovery efforts. Today, Chongqing is a key industrial hub and one of China's fastest growing cities, while Chengdu is an important new urban center for investors and is predicted to be a future megacity. Economic and population growth is highest in Chongqing and Chengdu's core districts as agglomeration economies take hold. This pattern of population and economic growth is likely to continue with spillovers into outer suburban centers over the next decade.

6. These trends have led to a paradigm shift in policymaking, moving away from sector-based subsidies and aid to more targeted, area-based economic policies and urbanization strategies. Such policies emphasize coordination across regional governments and between cities, with large and medium cities developing high-value added manufacturing, while surrounding smaller cities and towns specialize in labor-intensive industries, pulling in remaining labor from nearby towns and villages and facilitating localization economies. Massive trunk infrastructure, rural-urban transport networks, and water and sanitation services in both rural and urban areas are planned to support these strategies.[3] In March 2011 the State Council established the Chengdu-Chongqing Economic (Cheng-Yu) Zone which provides an overarching regional economic strategy covering 31 districts and counties in Chongqing and 15 cities in Sichuan.

7. Guang'an Prefecture in South-East Sichuan, on the border with Chongqing, is expected to play an important role in this economic cooperation between Sichuan and Chongqing. Yet Guang'an is a registered poverty prefecture with urbanization and income levels below the national average.[4] Guang'an's total population has declined, however its urban population is slowly growing, particularly in the prefecture-level city and key towns close to Chongqing, including Linshui County Town and Qianfeng District Town. Between 2000 and 2010, the urban population of these two towns increased by around 15 percent.[5] Their GDP per capita, while below average for the urban system and the Chongqing extended metropolitan region (EMR), has grown considerably in real terms. Their share of the EMR's non-agricultural employment and manufacturing jobs has increased along with a few districts while in all other districts it declined.

[2] United Nations Development Programme. China National Human Development Report 2013.
[3] World Bank. *Reshaping Economic Geography.* World Development Report 2009.
[4] Only 34 percent of its 3.2 million people currently live in urban areas and average per capita disposable income was RMB 19,973 in 2012 compared to RMB 24,565 nationally.
[5] Based on analysis conducted during project preparation, Linshui County Town has a population of around 151, 942 (2010) and is projected to grow to 198,000 by 2020 and Qianfeng District Town has a population of 56,042 (2010) and is projected to grow to 77,000 by 2020.

8. Yubei District of Chongqing, which neighbors Linshui County, has seen the highest urban population and GDP growth of the whole Chongqing EMR and 78 percent of its GDP is now derived from industry. Between 2008 and 2012, marginal efficiency of capital[6] was higher in Guang'an Prefecture and Linshui County than the average across economies within a one-hour travel distance of Chongqing City. This suggests that investment in Guang'an's economy, thus far, has been relatively efficient in comparison to counties and districts within Chongqing urban core.

9. Linshui County Town, which is within 90 minutes' drive of Chongqing's urban core, is a relatively well established urban center with an industrial zone that is expanding progressively to the south of the urban center. The town has a good, national-level technical vocation training school but short-term industry-based skills training and associated equipment is out-of-date and not linked to the needs of current and future industries. The town faces problems with missing links within the urban road network and the wastewater treatment plant is running at full capacity due to the recent pace of development. It also lacks reliable public transport services between low-income neighborhoods concentrated in the town center and urban-industrial expansion areas.

10. Qianfeng District was only recently established as an independent district from Guang'an City. It has a smaller urban area and only recently started investing in industrial development. It has no centralized wastewater treatment, so wastewater is discharged into rivers after very basic pre-treatment. The old town area is run-down and polluted, especially along the riverside. Heavy-duty vehicles transport freight from the railway station through the downtown area adding to local congestion and pollution. Qianfeng District is just beginning to take stock of its municipal assets and needs to make critical improvements to its basic municipal services, particularly transport and wastewater services. Public transport routes in the town are very limited.

11. The towns need to identify and capitalize on their growth potential in the Chongqing EMR, and their role in facilitating cooperation in the Cheng-Yu Economic Zone. The urban, economic and industrial development strategies of these towns need to be based on a better understanding of the regional economy, the opportunities for industrial development and the comparative advantage of each in different sectors. The towns also need investment in their basic infrastructure to increase their attractiveness as places to live, work and do business. To maintain the efficiency of their capital investments, future development will need to be based on realistic population and industrial growth projections as well as the needs of existing and incoming migrants and industries. At the same time they will need well-laid plans to manage their natural, human, built and financial resources.

C. Higher Level Objectives to which the Project Contributes

12. The project is in line with the World Bank's Country Partnership Strategy for China for 2013 to 2016 (Report No. 67566-CN), which was discussed by the Board of Executive Directors on November 6, 2012 and reflects the key development priorities of China's current Twelfth

[6] An indicator of the production efficiency of an economy with respect to its capital inputs.

Five-Year Plan.[7] The project supports the World Bank's twin goals of ending extreme poverty by 2030 and ensuring the benefits of prosperity are shared by investing in municipal assets necessary for economic growth in a lagging region. The Project draws on the findings of two joint studies by the World Bank and the Development Research Center of China's State Council, namely *China 2030: Building a Modern, Harmonious, and Creative Society* and *Urban China: Towards Efficient, Inclusive and Sustainable Urbanization* and is in line with the thrust of the *National Plan for New Urbanization (2014-2020).*

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

13. The proposed Project Development Objective (PDO) is to improve Linshui County and Qianfeng District infrastructure and investment support services.

Project Beneficiaries

14. The direct project beneficiaries are the 198,000 residents of Linshui County Town and 77,000 residents of Qianfeng District Town in 2020. Skills training services will be targeted to, and directly benefit, 6500 low-income and below the poverty line men and women across urban and rural areas of Linshui County.

PDO Level Results Indicators

15. The PDO achievement will be measured by the following indicators: (a) annual direct investment in Linshui County Town Economic and Technological Development Zone (ETDZ); (b) number of trainees securing jobs after skills training (disaggregated by gender and income); (c) daily green traffic on corridors between Linshui Town center and Linshui ETDZ; and (d) percent of wastewater collected and treated in Qianfeng District Town.

III. PROJECT DESCRIPTION

A. Project Components

16. The PDO would be achieved through improvements in infrastructure services combined with technical assistance. The project has four components:

17. **Component 1: Technical Assistance** (IBRD loan US$ 600,000). Provision of technical assistance to: (a) Linshui County to (i) conduct a cumulative strategic environmental and social impact assessment and improve the planning of capital investments and managing of built assets; and (ii) conduct industrial value chain analyses, a private sector demand survey, and design marketing and investment promotion services; and (b) Qianfeng County to conduct a cumulative strategic environmental and social impact assessment and to improve the planning of capital investments and managing of built assets.

[7] World Bank. 2012. *China - Country partnership strategy for the period FY13-FY16*. Washington, DC: World Bank.

18. **Component 2: Linshui County Town** (US$ 64.39 million, IBRD loan US$56.79 million). (a) (i) A green transport corridor between Linshui County's urban core and Linshui Economic and Technology Development Zone (ETDZ) and (ii) a linkage to the highway connecting Guang'an City to Chongqing at the southeastern section of the Linshui ETDZ, consisting of selected roads with associated installations, including public transport and facilities, urban greenery and lighting; (b) selected storm water drainage, sewage interceptors, sewerage pipelines, and treated effluent pipelines; (c) Linshui County Town Number 3 Waste Water Treatment Plan (WWTP); and (d) set up of a public skills training center located at the Linshui County Vocational High School, including the development of skills training program through the provision of technical assistance, assessment of training needs, carrying out of capacity building activities, development of training curricula, acquisition of training materials, including books, information technology equipment and industrial training machinery and conducting skills training activities.

19. **Component 3: Qianfeng District Town** (US$ 42.62 million, IBRD loan US$ 37.39 million). (a) Development of a passenger and cargo route bypassing Qianfeng District Town's urban core, through the construction of a road with associated installations, greening and lighting; and (b) construction of a slow, green, transport corridor connecting Qianfeng District Town's urban core and Qianfeng District's southern industrial expansion area, consisting of, *inter alia*, riverside roads, parks, and green space areas along the Luxi River, as well as wastewater interceptors, stormwater drainage and associated sewer pipelines, and lighting.

20. **Component 4: Project Management and Capacity Building** (IBRD loan US$1.77 million). Provision of technical support for both (a) Linshui County and (b) Qianfeng District, including training and capacity building activities to coordinate and manage implementation of the project, including (i) financial management, procurement, contract supervision, technical design, and project reporting; (ii) construction supervision; and (iii) independent monitoring of the implementation of the project's safeguards instruments.

B. Project Financing

21. **Lending Instrument.** The lending instrument for the proposed Project is Investment Project Financing. The World Bank loan of US$100 million will be a US Dollar denominated, commitment-linked variable spread loan based on six-month LIBOR plus an additional variable spread, with all available conversion options, level repayment of principal, a commitment fee of 0.25 percent on the undisbursed loan balance and a front-end fee of 0.25 percent, and a final repayment period of 30 years, including a 5-year grace period.

22. **Project Cost and Financing.** The estimated total project cost including financial costs during construction is US$203.31 million, to be funded by an IBRD loan of US$100 million and counterpart funds of US$103.31 million equivalent.

Project Components	Project cost (US$ million)	IBRD Financing (US$ million)	% Financing

1. Technical Assistance	0.60	0.60	100
2. Linshui County Town	64.39	56.79	88
3.Qianfeng District Town	42.62	37.39	88
4. Project Management and Capacity Building	1.77	1.77	100
Subtotal	**109.38**	**96.55**	**88**
5. Front-end fee	0.25	0.25	100
6. World Bank interest and commitment fees during implementation	3.20	3.20	100
Subtotal	**112.83**	**100.00**	**88**
7. Land acquisition and resettlement	61.70	0.00	0
6. Project overheads	17.31	0.00	0
7. Contingencies	11.48	0.00	0
Total	**203.31**	**100.00**	**49**

Note: Due to rounding, totals may not add up precisely.

C. Lessons Learned and Reflected in the Project Design

23. The project design incorporates lessons learned from international and domestic urban and regional development experience and the Bank's global and China operations as described below.

24. **Sichuan Plain Urban System**. The World Bank has provided over $1 billion in lending for urban development in Sichuan and Chongqing since 1999. A study commissioned during project preparation to review one of these recent projects identified a need for careful regional analysis in early project preparation: to direct investments to cities and towns with potential for growth as part of the systems metropolitan regions; and target support for critical investments needed to link urban and industrial areas within these towns, while also building capacity for them to tap into growing sectors of the regional economy. The selection of cities and towns participating in the project was therefore refined and components and technical assistance were selected based on key bottlenecks in tapping into the Chongqing economy.

25. **Private sector demand**. The Bank's experience over many years in similar projects has shown that projects often fail because assumed private sector demand never materializes. The Bank carefully reviewed population projections, trends in the regional economy over the last decade, and assumptions on build-up speed of industrial areas to confirm underlying potential for development. The Bank also carefully reviewed the metropolitan region economy to identify industries with potential for growth. Technical assistance under the Project will support further analysis of industrial value chains and conduct private sector demand surveys to canvass target companies about: (a) their requirements, (b) their projected growth during the subsequent years, (iii) land and how employees required for these growth plans, (iv) timeline, and (v) needs in terms of infrastructure, investment climate, and skills. The results will then be tabulated, and both statistical information from the survey and anecdotal information obtained will provide a much richer context and firmer footing for the towns' urban and industrial growth and help guard against wasteful investments.

26. **Small and medium-size town development.** A recent Bank study on China's Small and Medium Towns (2012) found that spending on public services and utilities in towns has lagged behind those of cities. Fixed asset investment per capita in towns is typically half that of cities. Investments in gas supply and wastewater treatment facilities, in particular, are lagging behind. Shortage of capital in towns was noted as being the biggest challenge for infrastructure development. Towns generally also have a shortage of funds for operation and maintenance. The study concluded that towns have the potential to be a connecting point between urban and rural areas and can play an important role in bridging the rural-urban divide but only when infrastructure development and other urban services are adequate. The project therefore focuses on priority basic infrastructure services to support these towns in their development and also includes technical assistance for improving capital investment and municipal asset management planning.

27. **Efficient and inclusive infrastructure design**. Specific lessons from basic infrastructure development projects include the need to focus on: (i) a select number of investments and institutional activities particularly when capacity is weak; (ii) stringent reviews of population and traffic forecasts; and (iii) improving services for all citizens. During project preparation, population projections were developed for all infrastructure investments based on trends between censuses of 2000 and 2010, instead of basing them on the highly optimistic population growth expectation in current urban master plans. Transport and wastewater investments have been designed with emphasis on services for all citizens and not just for private cars or industrial users.

28. **Skills training**. The *2013 World Development Report: Jobs* found that firms and workers seldom have either the funds or can borrow to upgrade skills through further education or training. Even when they do have the funds, they may lack the information needed to identify skills gaps. It identified the importance of skills, but also cautioned that large-scale skill training programs are not always the answer since there are other plausible reasons for skill shortages. Another recent study found that shorter trainings (below four months) have a more positive impact than longer ones and in-firm training or on-the-job training is more effective than classroom-based training or at least it is important that potential employers co-design activities that closely mirror actual jobs.[8] As a result, the project has focused on developing a targeted, short-term skills training program with a curriculum which will be based on engagement with employers and workers and linked to private sector demand surveys and industry needs assessments. Linshui County Vocational High School (LVS) has also engaged across government agencies responsible for jobs, labor, poverty, civil affairs, and gender and with industry to put a framework in place for the skills training program targeting low-income groups and individuals below the poverty line, and for monitoring the program. It is also planned for LVS staff to visit mature industry-linked skills training programs domestically and internationally, including Changsha and Singapore.

29. **Implementation arrangements**. Where implementing agencies have little experience with Bank-financed projects it is important to hire project management consultants at an early stage to bolster capacity of implementing agencies for project start-up. For this project, the terms of reference have been prepared early and the aim is to the have management consultants in

[8] World Center for Local Economic Growth. 2014. Evidence Review: Employment Training. London.

place soon after effectiveness. Intense training on fiduciary and safeguard policies is also required early in project implementation and the Bank has conducted a number of trainings and plans to continue providing repeater training throughout the project. Otherwise, project implementation arrangements are relatively straightforward.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

30. The Project will be managed at two levels of government: (a) Guang'an Prefecture Government; and (b) Linshui County and Qianfeng District Governments. A Prefecture Project Leading Group (PLG) has been established and is led by the Executive Deputy Mayor and includes representatives from all key prefecture government bureaus. PLGs with similar composition and roles have been established at County and District Level. Each participating local government has established a Project Management Office (PMO) in their respective Development and Reform Commission, and includes Guang'an Prefecture PMO (GPMO), Linshui County PMO (LPMO) and Qianfeng District PMO (QPMO).

31. Linshui County has identified Linshui County Yuanfeng Industry Development Company (LCYIDC) and Qianfeng District has identified Guang'an Prefecture Qianfeng District Xinhong Investment Company Limited (QDXIC) as their Project Implementing Agencies (PIAs). LVS will be the PIA for Linshui County's skill training program. The Department of Education and the Department of Human Resources and Social security (HRSS) will provide training subsidies and other resources and guide the preparation and implementation of the skills training program. LVS is coordinating with the Poverty Alleviation Office, Civil Affairs Bureau and Women's Federation in implementing the skills training program. The detailed roles and responsibilities of the PLGs, PMOs, PIAs, and the different prefecture, county and district bureaus are further described in Annex 3.

B. Results Monitoring and Evaluation

32. Results indicators for monitoring progress towards the PDO and intermediate results indicators for monitoring progress of each component are listed in the Results Framework in Annex 1. GPMO will monitor and evaluate the Project and coordinate PMOs, PIAs and agencies in Linshui County and Qianfeng District in data collection using the Results Framework. Project management consultants will be hired to help establish a monitoring and evaluation system and progress reporting. LVS will monitor progress of the skills training program with relevant bureaus.

C. Sustainability

33. Detailed assessments of demand and population projections were conducted to right-size investments. Tariff structures have been analyzed to ensure local governments are able to provide adequate subsidies to cover the operational costs of wastewater services. To ensure the long-term sustainability of the project objectives, technical and economic analysis was conducted to ensure resources and capacity will be in place to plan, build, maintain and operate project

investments. The project will further support the project towns to prepare and implement town-wide capital investment and municipal asset management plans. It will also support the towns in conducting strategic cumulative environment and social assessments to look at measures they can take to ensure urban and industrial growth plans are sustainable. LVS will prepare annual financing plans and budgets and identify options for the sustainable financing of the skills training services based on private sector demand.

V. KEY RISKS AND MITIGATION MEASURES

A. Risk Ratings Summary Table

Risk Category	Rating
Stakeholder Risk	Moderate
Implementing Agency Risk	
- Capacity	Substantial
- Governance	Moderate
Project Risk	
- Design	Substantial
- Social and Environmental	Substantial
- Delivery Monitoring and Sustainability	Moderate
Overall Implementation Risk	Substantial

B. Overall Risk Rating Explanation

34. The project has been rated Substantial for Overall Implementation risk due to a number of risks described in the following paragraphs.

35. This is Guang'an Prefecture, Linshui County and Qianfeng District PMO's first World Bank infrastructure investment project and they are unfamiliar with the Bank's fiduciary and safeguards policies. Compared with the initial proposal, the project has been significantly downscaled and simplified based on an assessment of local government and PIA capacity. Key tasks, including procurement, financial management and reporting will be managed by GPMO with support from project management consultants. There is a risk that local government will not be able to ensure timely availability of counterpart funding. To manage this risk, the Bank and GPMO will regularly review annual counterpart funding plans together with the project implementation schedule.

36. The infrastructure investments are not technically complex; however, there is always a risk of overdesign in the detailed design stage. During project preparation, detailed analysis was conducted to develop realistic population projections. These were accepted as the basis for domestic feasibility study reports and will be the basis for detailed designs.

37. Sichuan is affected by frequent hydro-meteorological and geological hazards. With increasing urbanization and industrialization the impact of such natural disasters, both economic and human, will increase. Other man-made hazards, such as accidents at industrial plants, may also increase. The project has applied national earthquake standards and stormwater systems have been designed to withstand an increased frequency and intensity of rainfall than national norms would require. Yet there is still a risk of disasters affecting investments.

38. Technical assistance activities are prone to implementation risks and the Bank will work closely with the client to support technical assistance implementation. The proposed technical assistance and skills training activities have been scaled down to what can be realistically implemented by the participating towns during the project.

39. Management of social and environmental risks will require consultations with affected persons and well-prepared communication strategies and safeguards plans. During project preparation, designs and investments were refined to reduce safeguards risks and incorporate mitigation measures. Environmental and social risks remain substantial during implementation, given the nature of the towns' urban and industrial expansion. The first phase of a strategic environmental and social impact assessment was conducted during project preparation and a second phase will be carried out during implementation.

VI. APPRAISAL SUMMARY

A. Economic and Financial

40. **Economic Analysis.** The economic viability of the project was assessed from two angles: (a) a general macro-economic assessment with special emphasis on incremental capital output ratios (ICOR) of Guang'an City and Linshui County compared to those in Chongqing's EMR, especially those areas within a 1-hour travel distance of Chongqing city; and (b) a benefit-and-cost analysis (BCA) to assess the economic return of the project. Full details are in Annex 6.

41. Macro-economic assessment. ICOR, also known as the marginal efficiency of capital, is an indicator of the production efficiency of an economy with respect to its capital inputs. A higher ICOR indicates a lower efficiency of the capital input. In the period 2008-12, the average ICOR in Guang'an Prefecture and Linshui County was respectively 4.19 and 4.18 compared to the average of 4.41 in the economy within 1-hour travel distance of Chongqing city, indicating higher comparative capital efficiency in Guang'an Prefecture and Linshui County.

42. *Benefit Cost Analysis.* A benefit-cost analysis was carried out to assess the economic viability of the project. Project costs include: (a) investment costs in urban infrastructure and revitalization activities, (b) opportunity cost of land and capital; and (c) on-going costs of operation and maintenance (O&M) of the infrastructure constructed. Transfer payments and financing costs were excluded from the economic cost estimates. The analysis found that at a discount rate of 10 percent project investments will generate an economic net present value of RMB 543.6 million and RMB 672.9 million respectively in Linshui County and Qianfeng District, translating to an economic internal rate of return of 19.3 and 26.1 percent respectively. The outcomes of the sensitivity analysis indicate that the economic return of the project

investment in Linshui is sensitive to the pace of build-up in the project area and the productivity of industrial land.

43. Value added by the Bank comes from supporting Linshui County and Qianfeng District in right-sizing infrastructure investments by reviewing population trends between the censuses in 2000 and 2010 and providing realistic future population scenarios. This focus on efficient infrastructure delivery, together with technical support for assessing cumulative environmental and social impacts of the towns' urban growth plans and improving municipal asset management, will be an important tool for further dialogue to help strengthen the economic viability and financial sustainability of infrastructure investments. Further value addition comes from assessing regional economic and demographic trends and conducting industrial profiling to identify Linshui and Qianfeng's comparative advantage in the regional economy. The Bank's strong emphasis on low-income groups and gender dimensions will also help ensure the project deliver added benefits and positive externalities to all segments of society.

44. **Financial Analysis.** Linshui County and Qianfeng District Governments will be responsible for providing counterpart funding for the project and for loan repayments. Counterpart funding will come from local government budgetary sources and will be scheduled in accordance with project implementation. Details of the counterpart funding requirements of the project per year are set out in Annex 6. Counterpart funding requirements will be higher in the initial three years of the project, reaching a peak in 2017. The local governments have prepared counterpart funding plans which will require close monitoring to ensure timely availability of counterpart funding for project implementation.

45. A financial analysis of the project was therefore carried out from the perspective of the governments of Linshui Country and Qianfeng District. The financial analysis confirmed that the local governments can recoup the costs of infrastructure development and maintenance associated with the project through future revenues. The analysis found that the project investments by Linshui county government and Qianfeng district government will respectively generate a financial net present value of RMB 47.8 million and RMB 240.1 million at a weighted average cost of capital of 7.0 percent, translating to a financial internal rate of return of 10.8 and 15.6 percent.

46. The analysis estimated that the weighted average cost for Linshui County government to provide wastewater treatment services to Linshui ETDZ is around RMB1.75 per cubic meter wastewater treated, which is the equivalent surcharge of approximately RMB1.58 per cubic meter on the water tariff. The current tariff of RMB0.50 per cubic meter is therefore insufficient to recover the full costs of service. An operating subsidy of RMB0.36 per cubic meter is required to cover operation and maintenance costs (partial cost recovery) with an additional capital subsidy of RMB0.73 required for full cost recovery. Linshui County government will need to provide the financing gap for the operation and maintenance of the facility and review the current tariff once the system is ready for operation, particularly for industrial users.

47. Linshui County's long-term debt service obligations are relatively low at below 8 percent of revenue. By the end of the project, the IBRD loan will raise the township government's long-term debt outstanding by about 26 percent. The analysis indicates that the township government

has adequate funds: (a) to carry out project investment activities; and (b) service debts associated with the IBRD loan. No long-term debt service was transferred to Qianfeng District at the time of its separation from Guang'an City in 2013. Based on a projection of future revenues from both fiscal and non-fiscal sources, Qianfeng District should have sufficient capacity to provide counterpart funds needed during project implementation and service debt obligations associated with project investments which was confirmed with Guang'an Prefecture Finance Bureau. Given its status as a newly formed District, the Bank will closely monitor Qianfeng District's capacity to manage the project and provide counterpart funds.

B. Technical

48. **Transport.** Project investments, which include roads to connect the town center with urban-industrial expansion areas in both Linshui and Qianfeng, were identified based on detailed analyses of transport problems, current and future transport demands, and alternatives for cost effective solutions that minimize land acquisition and other social impacts. Special attention was paid to the needs of low-income groups, e.g., low-income families living in run-down areas of the town centers and factory workers living in isolated dormitories, as well as the needs of pedestrians, bicycles, public transport services, and road safety. Qianfeng's links to regional road networks are incomplete significantly reducing its ability to function as a service center for surrounding industries. The selected investments include a 3.3km section of road which will complete links between the Xinqiao industrial estate and the new entrance to the Qianfeng railway station, allowing heavy goods vehicles to bypass the town center. The project will also finance public roads along the Luxi River stretching from the industrial area to the city center as well as the main sewage interceptors along these roads thus reducing pollution loading in the river. Public and green space improvements along the Luxi River will improve the urban living environment.

49. **Wastewater Management.** Main sewage interceptors will be constructed along river banks to convey wastewater to the new No. 2 Wastewater Treatment Plant (WWTP) in Linshui County Town and to a new WWTP in Qianfeng District Town. Both WWTPs are to be constructed under build-operate-transfer (BOT) arrangements. Due to topographic constraints, a new 4,000 m^3 per day No. 3 WWTP plus associated sewerage networks are needed for the urban expansion area in Linshui County Town. These investments are based on wastewater generation projections under realistic population and industrial growth scenarios. The capacity of the new WWTP to be financed by the project has been reduced from 30,000 m^3 to 4000 m^3 per day based on due diligence conducted during project preparation. All treated effluents will meet domestic regulations of Class 1-A of Municipal Wastewater Discharge Standards. The design of gravity sewers is in accordance with China's Water Supply and Drainage Design Manual and is the energy efficient option.

50. **Storm Water Drainage.** According to a recent World Bank study on climate trends and its impacts in China, Sichuan is identified as an area with the greatest risk of flooding due to a predicted increase in the number of days with heavy rain.[9] It is expected that disruptions to transportation services in urban areas will be exacerbated by poor drainage systems inadequately designed to deal with more frequent and severe flooding events. The proposed design of storm

[9] Sall, Chris. 2013. Climate Trends and Impacts in China. Discussion Paper. Washington. World Bank Group.

water drainage systems were evaluated and appraised incorporating climate change considerations. The design follows more stringent criteria, by increasing the return period of rainfall from 1 year to 2-3 years and adopting higher runoff coefficients for interchanges as well as sensitive and highly populated areas.

51. **Skills Training.** The project includes support for Linshui County in designing skills training services based on private sector demand surveys and needs assessment. Training would be targeted at the bottom 40 percent of the income segment and would have a target of 20 percent for the registered poor. According to the policies of LVS, the training program will have a fifty-fifty share of male and female trainees. Women account for 60 percent of the unemployed in Linshui County (Employment Bureau, 2013) and LVS will look at the potential for gender targeting in the training being offered during the program and curriculum design. Program achievements will be monitored by income, gender and poverty.

C. Financial Management

52. The Bank loan proceeds, including overseeing the DA, will be managed by Sichuan Provincial Finance Bureau (SPFB). The PMOs at Prefecture Level and County or District Level will be responsible for overall coordination and project management. Detailed implementation, including contract payments, will be managed by the respective PIAs which do not have any prior experience in managing World Bank financed projects. An action plan to strengthen Financial Management capacity has been agreed with the implementing agencies including preparation and distribution of a Financial Management Manual, provision of extensive training, hiring experienced consultants, and establishment of a systematic monitoring mechanism. The FM assessment concluded that with the implementation of the proposed actions, project's FM arrangements satisfy the Bank's requirements under OP/BP 10.00.

D. Procurement

53. The procurement capacity assessment of Guang'an City, Linshui County and Qianfeng District PMO determined that these PMOs and their staff do not have adequate experience with Bank procurement procedures. The key risks identified by the procurement capacity and risk assessment were: (a) inaccurate cost estimates; (b) possible delays and/or non-compliance because of differences between Bank procurement guidelines (revised July 2014) and domestic procurement practice; and (c) inadequate contract management practices. With the implementation of proposed actions to strengthen procurement capacity (see below), the assessment concluded that these PMOs have adequate capacity to carry out procurement activities for the proposed project. See Annex 3 for additional information.

54. Procurement training was provided to staff from all three PMOs in January 2013 and June 2014 during project preparation; and training is expected to continue during project implementation. In addition, designated project procurement staff attended two training courses, and will continue to attend such courses, organized by the Bank or by other institutions acceptable to the Bank. A project Procurement Manual acceptable to the Bank has been prepared and has been distributed to project staff. The Bank will also provide regular and refresher anti-corruption training.

55. A procurement plan, which describes procurement activities to be undertaken under the project (including contracts to be procured in advance of loan signing), has been prepared, reviewed and agreed with the Bank. The procurement plan will be updated throughout the duration of the project at least annually, or as required to reflect project implementation needs and submitted to the Bank for review. The initial procurement plan has been posted on the Bank's external website. Subsequent updated procurement plans will also be posted on the Bank's website.

E. Social (including Safeguards)

56. The project provides social benefits through providing improved infrastructure services in Linshui County Town and Qianfeng District Town. A Social Assessment carried out during project preparation identified key adverse impacts and positive impacts of the project through public consultation. The Social Assessment indicated that the project was welcomed by local communities as the improved infrastructure services are expected to improve the local economy and lead to job creation. The Social Assessment identified Sichuan as the main supplier of migrant workers in China and the Project having the potential to help improve the possibility of work closer to home for migrants. A Social Action Plan has also been developed to help improve the project's social benefits and to mitigate social impacts.

57. Bank financed project construction and non-Bank financed land development in the area will cause about 22,500 people from about 6,400 families to be affected by the acquisition of 500 ha of collectively owned land; about 20,500 people from 5,800 families will be affected by the demolition of 1.3 million m^2 of private houses. Although land development activities in Linshui County will be not financed by the Bank, as resettlement activities will be conducted at the same time as the Bank financed project, all related resettlement impacts are covered by the project Resettlement Action Plan (RAP). Non-Bank financed investments which are associated or connected to the Bank-financed investments, such as wastewater treatment plants, roads and riverside improvements are considered linked to the project and are also included in the RAP.

58. Women's views and concerns on resettlement were collected and analyzed through public consultation, and were incorporated into RAP preparation. Women showed particular interest in the social security scheme. As such, the design of specific information on social security provisions will be targeted at women's interests. Current skills training programs in Linshui are balanced in terms of male and female participation and the project will continue this approach, monitoring participation rates by men and women and assess any need for targeted programs. Further public consultations will be conducted in the planning of the transport corridors in Linshui and Qianfeng and designs will consider concerns raised by men and women; including requirements for transport safety measures and meeting specific needs of male and female passengers.

59. GPMO, LPMO and QPMO have prepared a RAP, acceptable to the Bank, to address involuntary resettlement impacts of project construction based on relevant Chinese laws, and regulations as well as the Bank's OP 4.12 on Involuntary Resettlement. The Chinese versions of the draft and final RAP were disclosed to local people on August 25, 2014 and October 16, 2014, respectively. The English versions of these documents were disclosed in the World Bank's Infoshop on September 10, 2014 and November 25, 2014, respectively.

F. Environment (including Safeguards)

60. Three environmental safeguards policies are applicable to the project, i.e. OP4.01 Environmental Assessment, OP4.04 Natural Habitats and OP4.11 Physical Cultural Resources. The project is classified as environment Category A as per OP4.01. Applicable World Bank Group (WBG) Environmental, Health and Safety Guidelines have been incorporated into the EAs. Environment Assessment (EA) documents prepared include: (a) Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) for Linshui component; (b) EIA and EMP for Qianfeng component; and (c) EA Summary for the project. The EA documents have been reviewed by the Bank and meet Bank safeguard requirements.

61. Due to the nature and scale of construction and operational activities, the project has the potential to cause direct, indirect/induced or cumulative environmental and social impacts. Key environmental issues addressed include: (a) impacts related to soil erosion, vegetation clearance and disturbance and surface water/river pollution due to earthworks; (b) other construction impacts and social disturbance associated with wastewater, noise, dust and solid waste; (c) operational impacts such as noise, dust, air emissions, wastewater discharge, waste management associated with road transportation and wastewater treatment; and (d) operational risks associated with wastewater treatment plant. These impacts have been thoroughly assessed and can be adequately avoided, minimized and/or mitigated through measures developed either in the project design or in the project EMPs and the RAP. Non-Bank financed investments which are associated or connected to Bank-financed investments are considered linked to the Project and are included in the EA and EMP.

62. The associated environmental impacts of the construction under the project are anticipated to be limited; however the project may induce or facilitate rapid industrial expansion, which in turn will exert cumulative impacts in conjunction with other past, present and future activities. EIAs identified the key induced and cumulative impacts in the two towns which include loss of green space and farmland, disturbance to drainage pattern, social issues related to conversion of agriculture-based livelihoods, and increased pressures on ambient air quality, noise levels, water quality, ground water and solid waste management. Given the scale of the planned development and the complexity of issues, a strategic environmental and social assessment of induced, cumulative and strategic issues related to urban and industrial development in the two towns would be carried out during project implementation and action plans developed with agreed measures to mitigate these impacts during the lifetime of the Project as well as long-term recommendations. The Terms of Reference for the strategic environmental and social assessment is included in the EMP.

54. Two rounds of public consultations were carried out during project preparation. Public consultations were undertaken in the form of questionnaires, focus group discussions, and public meetings. Information disclosure on EA preparation was advertised through public bulletins, local newspapers, and the internet. The Chinese versions of the draft EA documents were disclosed on the websites of Guang'an DRC on August 22, 2014 with a newspaper announcement in the Guang'an Daily and the final EA documents similarly disclosed on November 24, 2014. Chinese and English versions of the draft and final EA documents were disclosed on the Bank's Infoshop on September 10, 2014 and November 25 and 27, 2014,

respectively. Public concerns raised during these consultations have been incorporated into the project design and the EMP.

Annex 1: Results Framework and Monitoring

CHINA: Sichuan Chongqing Cooperation: Guang'an Demonstration Area Infrastructure Development Project

Project Development Objective: The proposed development objective is to improve Linshui County and Qianfeng District infrastructure and investment support services.

Results Indicators	Core	Unit of Measure	Base line	Cumulative Target Values						Frequency	Data Source/ Methodology	Responsibility for Data Collection
				2015	2016	2017	2018	2019	2020			
Project Development Objective Indicators												
PO-1 Annual direct investment in Linshui ETDZ	☐	RMB billion	2.11	2.27	2.46	2.65	2.87	3.09	3.33	Yearly	Linshui ETDZ Annual Report	Linshui PMO and PIA
PO-2 Trainees securing jobs after skills training - cumulative		persons	0	0	1080	2460	4116	5956	-	Yearly	LVS Annual Report	Linshui PMO and PIA
- Gender (to be monitored)	☐		0	-	-	-	-	-	-			
- Poverty (20 percent of total trainees)	☐		0	-	216	492	823	1191	-			
PO-3 Daily green traffic on corridors between Linshui town center and Linshui ETDZ (1)	☐	persons/ (7am-7pm)	235	250	270	300	400	600	-	Yearly	GPMO Progress Report	Linshui PMO
PO-4 Wastewater collected and treated in Qianfeng District Town	☐	percent	0	0	0	0	50	60	70	Yearly	Qianfeng Annual Report	Qianfeng PMO
Intermediate Results Indicators												
IO - 1 Number of people provided with access to improved sanitation facilities under the project - urban		persons	0	0	0	0	127000	175200	200000	Yearly	Data collection and monitoring	PMOs and PIAs
- Female population	☒		0	0	0	0	63500	87500	100000			
IO - 2 Volume (mass) of COD pollution load removed by the treatment plant under the Project	☐	ton/yr	0	0	0	0	2,890	4,00	4800	Yearly	Progress Report	Linshui PMO and PIA

IO - 3 Sewer constructed	☐	km	0	0	0	12	24	30	30	Yearly	Progress Report	PMOs and PIUs
IO - 4 Reduction in proportion of all heavy goods vehicles travelling along Guangqian Avenue in Qianfeng Town Center to/from the railway station (2)	☐	percent	100	100	100	100	100	75	50	Yearly	Progress Report	Qianfeng PMO
IO - 5 Roads constructed (non-rural) - cumulative	☒	km	0	0	0	10	10	23	23	Yearly	Progress Report	PMOs and PIAs
IO - 6 Number of trainees completing short-term skills training - cumulative	☐	persons/ yr	0	0	1200	2700	4500	6500	-	Yearly	LVS Annual Report	Linshui PMO and PIA
- 50:50 gender share	☐		0	-	600	1350	2250	3250	-			
- Poverty (20 percent)	☐		0	-	240	540	900	1300	-			
IO – 7 Preparation of capital investment and municipal asset management plans	☐	Text	No plans	-	Inventory	Map	Plan	-	-	Yearly	Annual Report	PMOs and PIA
IO – 8 Preparation of cumulative impact assessment (CIA)	☐	Text	None	-	-	CIA complete	Plan	-	-	Yearly	Annual Report	PMOs
IO – 9 Preparation of value chain assessment (VCA), private sector demand survey (PSD) and investment promotion services (IPS)	☐	Text	None	VCA& PCD	IPS	IPS	IPS	IPS	-	Yearly	Linshui ETDZ Report	Linshui PMO and PIA
IO – 10 PMO and PIA staff and related bureaus attend training - cumulative	☐	Person training days	0	30	100	200	300	400	-	Yearly	Annual Report	PMOs and PIAs
IO – 11 Project-supported organizations publishing reports on Grievance Redress Mechanism and how issues were resolved (including resolution rates)	☐	Yes/No	No	Yes	Yes	Yes	Yes	Yes	-	Yearly	Annual Report	PMOs and PIAs

(1) Data will be collected at two locations: the current Xinling Avenue crossing Hu Rong highway and at the proposed #1 Road crossing HuRong highway from 7am-7pm on a work day in October every year. (2) Data will be collected at two locations: the current Guangqian Avenue in front of the Industry Management Committee and at the proposed Industrial Avenue from 7am-7pm on work day in October every year.

Annex 2: Detailed Project Description

CHINA: Sichuan Chongqing Cooperation: Guang'an Demonstration Area Infrastructure Development Project

Project Description

1. **Cheng-Yu Economic Zone.** The Sichuan Plains Urban System is identified in China's Twelfth Five-Year Plan for National Economic and Social Development 2011-2015 as a strategic area for urbanization. In March 2011, the State Council approved the Sichuan-Chongqing (*Cheng-Yu) Economic Zone* to boost economic growth in the urban system. The aim is not merely to expand industry but to further develop Chengdu and Chongqing as the hub of western region development and reduce regional disparities. In May 2011, the State Council approved the *Cheng-Yu Economic Zone Regional Plan* which identifies Guang'an Prefecture (Guang'an) as a demonstration area for cooperation between Sichuan and Chongqing.

2. **Sichuan-Chongqing Cooperation Demonstration Area (Guang'an).** In November 2012, the National Development and Reform Commission approved a *General Plan for Construction of the Sichuan-Chongqing Cooperation Demonstration Area (Guang'an)*. The plan sets out five major functions for the demonstration area: (i) urban integration; (ii) industrial cooperation; (iii) trade logistics; (iv) scientific cooperation; and (v) cooperation for environmental protection. Development of the Sichuan-Chongqing Cooperation Demonstration Area (Guang'an Prefecture) is to start by 2015. Guang'an Prefecture (Guang'an), located at the south-east boundary between Sichuan and Chongqing, is a prefecture-level city with jurisdiction over two districts, three counties, one city, 87 towns and 2886 villages. It has a total population of 3.2 million and covers an area of 6,344km² (nine times the size of Singapore). It has relatively good and improving transport links with a number of state highways and expressways in operation or under construction.

3. **Chongqing Extended Metropolitan Region.** Chongqing is one of China's largest municipalities. The population of the extended metropolitan region (EMR) was 21.5 million in 2010, down by nearly 1 million compared to 2000. However, the total population of the metropolitan region, within a 60-minute drive time of the core city grew by nearly 1.2 million. Chongqing's GDP in 2013 was reportedly USD 209 billion, with a year on year growth rate of 12.3 percent. Recent Bank research of China's metropolitan regions identified around 49 metropolitan regions with similar attributes including a core city and adjacent counties generally within a 50 km radius of the core city (representing a notional one-hour drive time) and have an extended hinterland within a two-hour drive time from which daily deliveries can be made to the core city (approximately 100km radius).

4. Transport related manufacturing is by far the largest industry of the Chongqing EMR.[10] Motor vehicle production is the largest single industry, followed by computer, communications and other electronic equipment manufacturing. The highest value added industry is computer manufacturing, followed by petroleum and natural gas extraction. Value added in transport related manufacturing is much lower. However, profit margins are very thin in the computer

[10] Motor vehicles and railway, ship and aviation equipment.

industry making it important to minimize factor input costs and the reason for these industries to shift to Chongqing from the Yangtze Delta once land and labor costs increased. This pattern is likely to eventually repeat within Chongqing EMR. Profit margins in motor vehicle and transportation equipment are higher than computers but still relatively low and far less mobile; once in a region they compete on the basis of production costs, including spare parts. International car makers have established in Chongqing's Yubei District but volumes are still not high enough to relocate manufacturers of spare parts from the Yangtze Delta though this will change once sufficient volumes of production are reached. Linshui County Town is located within a ninety-minute drive time, and Qianfeng District in a two-hour drive time, from Chongqing's Cuntan Port located in Yubei District (See Annex 7). These towns are expecting to gain from future economic spillovers of being located with the Chongqing EMR.

5. **Guang'an's Economy.** Traditional industries in Guang'an include power, coal mining, construction materials, equipment manufacturing and agro-processing. Manufacturing accounts for only 6.5 percent of employment in Guang'an and 4.2 percent in Linshui. However, its share increased 3.7 percent in Guang'an and 2.5 percent in Linshui, indicating that the prefecture and two towns are attracting new industry. Between 2000 and 2010, Guang'an's GDP per capita reportedly rose an average of 16 percent per year and by 2010 reached RMB15,588 (USD2303), just below the provincial average but still about half the national average of RMB29,992 (USD4430) in the same year. Between 2000 and 2010, Guang'an District and Linshui County saw an increase in share of Chongqing EMR's GDP, while many other areas saw a decline, and an increasing share in the urban population. Yubei District in Chongqing, neighboring Linshui to the south, is the core of the metropolitan regions urbanization and industrialization. Guang'an and Linshui have much lower levels of senior middle school attainment, seen as critical to higher value manufacturing, compared to the core district but the rates have been on the increase over the last decade.

6. **Linshui County Town.** Infrastructure services barely meet current needs: there is only one 20,000 m³ per day (No. 2) water treatment plant (WTP) which supplies clean water to the 139,000 residents in the urban center and industrial area.[11] Currently, construction work is ongoing to expand the No. 2 WTP to 50,000 m³ per day to meet future water demand. The town center has about 93km of combined and separate sewerage systems and the No.1 wastewater treatment plant (WWTP) of 20,000 m³ per day has been operating since 2009. The WWTP benefits about 78 percent of the population who live in the urban center. Linshui County Town Government has committed to construct about 29 km of sewer pipelines and a new 30,000 m³/day Linshui County Town No. 2 WWTP; the latter will be constructed as a Build-Operate-Transfer operation and be commissioned by 2017. The No.2 WWTP is considered linked to the Project and the Bank's safeguards policies and procedures will be applied to the construction and operation of the plant. Under the proposed World Bank Loan, Linshui County Town will construct 36.21 km of new sewerage systems in two catchment areas, and a 4,000 m³/day No.3 WWTP during 2015 to 2020. This will increase the wastewater collection and treatment rate in the urban area of Linshui County Town to over 80 percent and will benefit a total of 158,400 persons by 2020.

[11] The No.1 WTP,is no longer used and water supply is entirely from WTP No.2.

7. The road network partially formed and Linshui has only three urban bus routes. Factory workers located in industrial areas have limited access to the town center and town center residents have only one route to access the industrial area which is busy with heavy goods vehicles. In order to solve these problems, the proposed roads will: (a) eventually form a first bus priority corridor in Linshui and help provide the basis for transit-oriented development along the corridor; (b) complete major road networks in the southern part of the industrial area including both arterial and local roads; and (c) provide access roads to factory workers and town center residents.

8. Linshui's current three-year vocational education (degree program) is strong with four public vocational schools and two private schools (senior secondary level) which are administered by the Linshui Education Department. Short-term technical training under the administration of Linshui Human Resource & Social Security (HRSS) Bureau is comparatively weak and needs to be strengthened to meet growing demands.

9. **Qianfeng District Town.** Qianfeng District is 23 km to the east of Guang'an City and 144 km north of Chongqing City. The Chongqing-Wuhan train station stops in the town center and is the main station for the Prefecture. A new highway is under construction and will greatly reduce travel time to Chongqing City. The main industrial sectors are textiles, electric-machinery, new materials, chemicals, building materials and packaging. Qianfeng Town has two existing WTPs with a total capacity of 15,000 m^3 per day. A new WTP of 25,000 m^3 per day is planned for construction in 2015 to meet future water demand. Although there are about 70 km of combined and separate sewers in Qianfeng's District's town center, there is no centralized WWTP. Most of the domestic wastewater is treated by septic tanks before discharging to the sewer networks or nearby water courses. Industrial wastewater is treated on site and meets the stipulated Effluent Discharge Standards GB8978-1996.

10. Under the proposed World Bank Loan, Qianfeng District Town will construct 14.04 km of sewerage system. A new 10,000 m3/day Qianfeng District Western Cowboy Town WWTP is to be built as a Build-Operate-Transfer operation and will be operational in 2016. Although not financed by the Bank, this WWTP is considered linked to the project in terms of the Bank's environmental and social safeguard policies and procedures. The domestic wastewater collection and treatment rate in the urban area of Qianfeng District Town will steadily increase by 10 percent annually from 50 percent during the first year of the WWTP operation. About 70 percent of residents (or about 55,000 persons) living in the urban area of Qianfeng District Town will benefit from these wastewater services.

11. Goods transport from the railway station uses a narrow mixed-use road section which raises road safety concerns and reduces capacity for all road users. Along the Luxi River, there is no direct route between the industrial areas and the town center. Factory workers living in the industrial area have no convenient route to amenities and town center residents have indirect and unsafe passage to industrial areas. The town center is currently polluted with no urban public green space or parks. The riverside area around the train station is rundown and unkempt. Existing urban roads and services are in poor repair.

12. Both Linshui County and Qianfeng are developing Public-Private-Partnership approaches for their urban wastewater management investment programs. Public financing is required to construct, operate and maintain sewerage systems and the town governments have sought private investors to construct, operate and maintain WWTPs. A "User Pays" strategy is to be applied to at least cover the O&M costs of sewerage systems and WWTPs.

Project Components

13. The project consists of four components: (a) Technical Assistance; (b) Linshui County Town; (c) Qianfeng District Town; and (d) Project Management and Capacity Building. The total project cost is US$203.31million, of which the IBRD loan is US$100 million. The following are the appraised project components:

14. **Component 1: Technical Assistance** (US$ 600,000). This component will support: (a) Linshui County to: (i) prepare a cumulative strategic environmental and social impact assessment; (ii) improve the planning of capital investments and managing of built municipal assets; and (iii) conduct industrial value chain analyses, a private sector demand survey, and design marketing and investment promotion services; and (b) Qianfeng District to (i) conduct a cumulative strategic environmental and social impact assessment and (ii) improve the planning of capital investments and managing of built municipal assets.

15. **Component 2: Linshui County Town** (US$ 64.39 million). This component will: (a) construct (i) construct a green transport corridor between low-income areas of Linshui County Town's urban core and Linshui Economic and Technology Development Zone (ETDZ) and (ii) a linkage to the highway connecting Guang'an City to Chongqing at the southeastern section of the Linshui ETDZ, consisting of selected roads with associated installations, including public transport and facilities, urban greenery and lighting; (b) construct selected storm water drainage, sewage interceptors, sewerage pipelines, and treated effluent pipelines; and (c) construct Linshui County Town Number 3 Waste Water Treatment Plan (WWTP); and (d) set up of a public skills training center located at the Linshui County Vocational High School, including the development of skills training program through the provision of technical assistance, assessment of training needs, carrying out of capacity building activities, development of training curricula, acquisition of training materials, including books, information technology equipment and industrial training machinery and conducting short-term industry-linked skills training activities.

Table A2-1: Linshui Transport Investments

Road	Transport Need	Function/Service
No.1 (4.76km)	Connection between industrial area and mid-urban core.	Urban arterial; public transport priority; and development around bus stops.
No. 2 (3.124km)	Connection between mid-industrial area to south urban core.	Urban secondary access road for in-city goods and passengers.
No. 3 (1.845km) No. 4 (1.071km) No. 5 (0.839km)	Commercial, industry and logistic connection and feeder roads for industrial workers and goods.	Urban local roads (goods, logistic and passenger).

16. This component involves the construction of: (a) five roads (11.64km long, with width ranging from 16m to 40m) with associated public transport and facilities, traffic management,

urban greenery and lighting (see Table A2-1); (b) storm water drainage (25.23km of DN300 to 2,000 x 3,200), sewage interceptors (13.066km of DN400 – DN1,200 pipes) connecting to the non-bank financed No. 2 WWTP, and sewerage pipelines (20.49 km of DN400 – DN800 pipes) and treated effluent pipeline (2.65 km of DN600) connecting to the bank-financed No.3 WWTP for existing and new residents and industries; and (c) increase wastewater treatment capacity (by 4,000m^3 per day) by constructing the No.3 WWTP.

17. This component will help develop and implement a skills training program for low-income groups based on target industries. The objective of the program is to broaden access to and improve the quality of skills training provision. The target group for the program is 6,500 low income groups and individuals below the poverty line (with a target of 20 percent registered poverty participants). Under the Project, the Linshui Departments of Education and HRSS will work together to set up a new public skill training center located at the Linshui County Vocational High School (LVS). The center will make full use of LVS's teaching and provide various short-term skill training offerings based on demand from the local labor market and private sector. The project is expected to help overcome a number of constraints present for the newly built center to become operational.

18. **Component 3: Qianfeng District Town** (US$ 42.62 million). This component will: (a) develop a passenger and cargo route bypassing Qianfeng District Town's urban core, through the construction of a road with associated installations, greening and lighting; and (b) create a slow, green, transport corridor connecting low-income areas of Qianfeng District Town's urban core and Qianfeng District Town's southern industrial expansion areas, consisting of riverside roads, parks, and public green space along the Luxi River, as well as wastewater interceptors, stormwater drainage and associated sewer pipelines, and lighting.

19. This component will construct: (a) one road (3.28 km in length and 30m in width) and associated traffic management, greening, lighting and safety measures); and (b) wastewater interceptors (13.44km of DN400 - DN1,200) and storm water drainage (19.28km) along both sides of the Luxi River and associated sewer pipelines under the road (0.6km at DN400); create public green space in the urban core (1.23 km) and a greenbelt along the Luxi River (5km); and construct two riverside roads (8.36 km in length and 18 – 20m in width) with lighting (see Table A2-1).

Table A2-2. Qianfeng Transport Investments

Road	Transport Need	Function/Service
Industrial Avenue (3.279km)	Connection between railway and industrial area.	Urban artery for goods transport and rail passengers.
Binghe N. (3.831km) Binghe S. (4.430km)	Slow traffic route connecting the urban core with industrial areas.	Urban local road for slow passenger traffic.
Luxi Riverside (1.4km)	Public/green space for residents and factory workers.	Social and green space with environmental function.

20. **Component 4: Project Management and Capacity Building** (US$1.77 million). This component will support design, review and advisory needs of participating institutions to implement the project. The component includes: (a) project management and construction site

supervision; (b) management capacity building and training; and (c) external monitoring for environment and social safeguards.

21. **Project Cost Estimates.** The estimated project cost and financing is in Table A2-3.

Table A2-3. Project Cost and Financing

Project Components	Project Cost (Million US$)	Project Cost (Million RMB)	IBRD Financing (Million US$)	% IBRD Financing
1. Technical Assistance	**0.60**	**3.6**	**0.60**	**100**
1.1 Urban capital investment and municipal asset management	0.20	1.2	0.20	100
1.2 Cumulative strategic environment and social assessment	0.20	1.2	0.20	100
1.3 Industrial value chain analysis, private sector surveys, marketing and promotion	0.20	1.2	0.20	100
2. Linshui County Town	**64.39**	**386.35**	**56.79**	**88**
2.1 Roads, bridges and associated facilities	35.31	211.86	30.97	88
2.2 Stormwater and wastewater networks	22.83	137.00	20.03	88
2.3 Wastewater treatment works	3.75	22.49	3.29	88
2.4 Skills training program	2.50	15.00	2.50	100
3. Qianfeng District Town	**42.62**	**255.74**	**37.39**	**88**
3.1 Roads, bridges and associated facilities	22.55	135.30	19.78	88
3.2 Stormwater and wastewater networks	17.17	103.01	15.06	88
3.2 Riverside public green space	2.91	17.43	2.55	88
4. Project Management and Capacity Building	**1.77**	**10.60**	**1.77**	**100**
4.1 Project management and construction supervision	1.20	7.20	1.20	100
4.2 Management capacity building and associated training	0.17	1.00	0.17	100
4.3 External RAP monitoring	0.20	1.00	0.17	100
4.4 External environment monitoring	0.20	1.20	0.20	100
Total Base Cost	**109.38**	**656.28**	**96.55**	**88**
5. Front-end fee	0.25	1.50	0.25	100
6.World Bank interest and commitment fees during implementation	3.20	19.22	3.20	100
Total Bank Loan	112.83	0.00	100.00	88
7. Land acquisition and resettlement	61.70	370.18	0.00	0
8. Project overheads	17.31	103.83	0.00	0
9. Contingencies	11.48	68.87	0.00	0
Total Project Cost to be Financed	**203.31**	**1,219.89**	**100.0**	**49**

Note: Due to rounding, totals may not add up precisely.

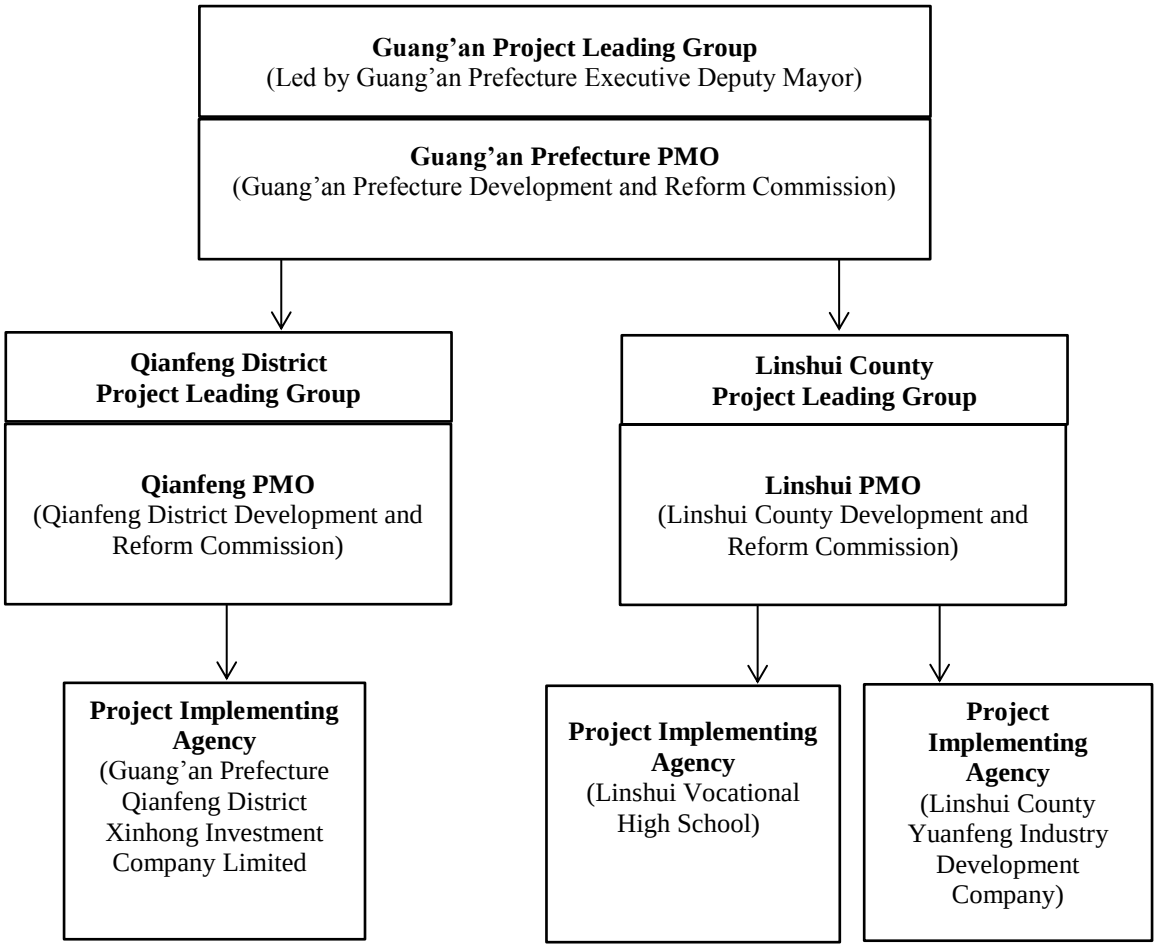
Annex 3: Implementation Arrangements

CHINA: Sichuan Chongqing Cooperation: Guang'an Demonstration Area Infrastructure Development Project

Project Institutional and Implementation Arrangements

1. The Project will be managed at two levels: (a) Guang'an Prefecture Government; and (b) Linshui County and Qianfeng District Governments. A Prefecture Project Leading Group (PLG) has been established and is led by the Executive Deputy Mayor and includes representatives from all key prefecture government bureaus. The PLG is responsible for strategic oversight and guidance to the project management offices (PMOs) and project implementing agencies (PIAs). PLGs have been established in Qianfeng District and Linshui County with similar composition and roles at their respective levels.

Figure A3-1: Institutional Arrangements



2. The Guang'an Prefecture Project Management Office (GPMO), housed in the Guang'an Prefecture Development and Reform Commission (DRC), and headed by the Director of GDRC, is responsible for overall coordination, management, procurement, contract management, disbursement and project reporting.

3. Qianfeng District PMO (QPMO) is located in the Qianfeng District DRC and Linshui County PMO (LPMO) is located in Linshui County DRC. Guang'an Prefecture *Qianfeng District Xinhong Investment Company Limited (QDXIC)* and *Linshui County Yuanfeng Industry Development Company (LCYIDC)* have been identified as the PIAs and project owners in each town. QPMO and LPMO will be responsible for coordinating overall project preparation and management and for overseeing the respective PIAs. The PIAs will be responsible for bidding, contracting and supervision of contractors. The PIAs for the Project are fully government-owned companies. [12] Together, these PMOs and PIAs will be responsible for all major project preparation and management functions, including engineering and construction supervision, implementation of safeguards and fiduciary measures, and project monitoring and reporting.

4. A project implementation plan and procurement and financial management manuals, reviewed by the Bank, will help guide project implementation.

Financial Management, Disbursements and Procurement

Financial Management

5. The Financial Management capacity assessment identified the principal risk is the lack of knowledge and experience in managing Bank financed projects on the part of the designated project Financial Management staff. Mitigation measures to address this risk are as follows: (a) a Financial Management Manual (FMM) which standardizes project financial management procedures for coordination and reporting; (b) provision of Financial Management training, including extensive workshops for technical training and experience sharing, to be arranged by SPFB and GPMO; (c) hiring of consultants to help GPMO and implementing agencies in project management; and (d) establishing a systematic monitoring mechanism and having the GPMO coordinate with the Provincial and Prefecture Finance Bureaus to conduct field reviews of each PIA on a semi-annual basis. The overall residual Financial Management risk, after taking into account these mitigation measures, is assessed as Moderate.

6. Funding sources for the project include the Bank loan and counterpart funds. The World Bank loan agreement will be signed between the World Bank and the Ministry of Finance (MOF), the on-lending agreement will be entered into by MOF and Sichuan Provincial Government. Sichuan Provincial Government will further on-lend loan proceeds to Guang'an Prefecture Government and Linshui County Government respectively. Guang'an Prefecture will finally on-lend to Qianfeng District Government. Thus, Linshui County and Qianfeng District will be the final debtors. Linshui and Qianfeng Governments will sign implementation agreements with the respective PIAs to enable them to use Bank loan proceeds. Counterpart

[12] wholly invested by respective district or county finance bureaus and use government appropriations for infrastructure investment.

funds will come from government fiscal revenue provided by Linshui and Qianfeng Governments.

7. **Audit Arrangements.** Sichuan Provincial Audit Office has been identified as the auditor for the project. The annual audit report on the project financial statements will be issued by this Audit Office and will be due to the Bank within 6 months after the end of each calendar year (by June 30 each year). The audit report and audited financial statements will be publicly available at both the World Bank and the China National Audit Office websites.

8. **Budgeting.** Annual construction and financing plans will be prepared by PIAs and reviewed by District and County PMOs and Finance Bureaus. District and County Finance Bureaus will formulate annual government budgets including allocating required funds to this project. Funds will be released to the PIA based on the approved annual plan and construction progress. Budget variance analysis will be conducted regularly, thus enabling timely corrective actions to be taken.

9. **Funds flow.** The designated account (DA) of the Bank loan will be opened and managed by SPFB. Withdrawal applications will be prepared by PIAs and reviewed by the respective District/County PMO, District/County Finance Bureau, GPMO, Prefecture Finance Bureau and SPFB. Most of the Bank loan proceeds will be disbursed from the DA to contractors through the respective finance bureaus. Detailed disbursement application and funds flow arrangement are described in the project FMM.

10. The proposed funds flow arrangement and related processing period should ensure contractors receive payment within required dates stipulated in the signed contracts. The Bank will closely monitor disbursement efficiency during implementation. If material payment delays resulting from slow disbursement are noted, the Bank will guide the project to explore more streamlined funds flow arrangement.

11. **Accounting and Financial Reporting.** The administration, accounting and reporting of the project will be set up in accordance with Circular #13: "Accounting Regulations for World Bank-financed Projects" issued in January 2000 by MOF.

12. All PIAs will manage, monitor and maintain project accounting records for project activities for which they are responsible. Each PIA will prepare individual financial statements for components implemented. Based on these individual financial statements, GPMO will prepare consolidated project financial statements with inputs from SPFB. GPMO will prepare unaudited semi-annual project financial statements and furnish these to the Bank as part of the semi-annual Progress Report no later than 60 days following each semester.

13. **Internal Controls.** The related accounting policy, procedures and regulations were issued by MOF and the Financial Management Manual will align the Financial Management and disbursement requirements among various implementing agencies.

Disbursements

14. Four disbursement methods are available for the project: (a) advance, (b) reimbursement, (c) direct payment and, (d) special commitment. Supporting documents required for Bank disbursement under different disbursement methods are documented in the Disbursement Letter issued by the Bank. The Bank loan would disburse against eligible expenditures (taxes inclusive) as in the table below.

Table A3-1. Eligible Expenditures

Disbursement Categories	IBRD Loan	
	Allocated Amount (in US$)	**Percentage of Expenditures to be financed (inclusive of taxes)**
1. Goods, consultant services' and training		
(a) Linshui County Part 1(a), 2 and 4(a)	3,963,100	100%
(b) Qianfeng District Part 1(b), 3, and 4(b)	903,700	
2. Works		
(a) Linshui County (Part 2)	54,291,100	88%
(b) Qianfeng District Part 3(a)	11,666,500	
(c) Qianfeng District Part 3 (b)	25,722,200	
3. Front-end fee	250,000	100%
4. Bank Interest and Commitment Fee	3,203,400	100%
5. Interest Rate Cap or Interest Rate Collar Premium	0	Amount due pursuant to Section 2.08(c) of this Agreement
Total	100,000,000	

15. *Retroactive financing*. For payments made prior to the signing date of the Loan Agreement, except that withdrawals up to an aggregate amount not to exceed $15,000,000 equivalent may be made for payments made prior to the Loan Agreement signing date but on or after January 1, 2015, for Eligible Expenditures.

Procurement

16. **Mitigation Measures for Procurement Risks**. The procurement capacity assessment of Guang'an Prefecture, Linshui County and Qianfeng District PMOs concluded that the procurement risk is moderate. These PMOs lack Bank project and procurement experience, however they do have adequate capacity and experience in procurement under similar projects using domestic procedures. Key risks include: (a) possible misunderstanding between the PMOs

and the Bank and delays in processing procurement and non-compliance due to unfamiliarity with the Bank's procurement policies and procedures; (b) weak contract management; and (c) poor records management. Measures to enhance the procurement capacity of the PMOs and to strengthen procurement and contract management under the project and to mitigate potential procurement risks have been agreed as follows:

(a) A procurement agent with procurement experience in projects financed by the Bank and other multilateral financing institutions will be hired by the three PMOs at appraisal to assist in procurement of goods, works and non-consulting services under International Competitive Bidding (ICB) and National Competitive Bidding (NCB), as well as selection of consultants for consulting services. The agent's assignments will include preparing commercial parts of bidding documents, Requests for Proposals, publishing Specific Procurement Notices, hosting bid opening, organizing bid evaluation, and preparation of bid evaluation reports and contracts.

(b) A project management consulting firm will be hired by the three PMOs to assist in reviewing bid documents, including technical specifications, bills of quantities, and designs for all civil works. The firm will also assist the three PMOs in contract management and managing and coordinating activities during construction.

(c) The three PMOs have sent designated procurement staff to attend procurement training before the pre-appraisal, and will continue to send procurement staff and other key staff to attend workshops on procurement and contract management under Bank-financed projects throughout project implementation, including procurement of goods, works and non-consulting services, as well as selection and employment of consultants.

(d) The Bank procurement specialist has provided training on procurement twice and will continue to provide training on procurement as needed throughout project implementation.

(e) Guang'an PMO has prepared a Procurement Management Manual which has been accepted by the Bank. The manual will provide guidance to the PMOs on procurement and contract management under the project.

17. Procurement for the project will be carried out in accordance with: World Bank's "Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits & Grants" dated January 2011 (revised July 2014); and "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011 (revised July 2014); and the provisions stipulated in the legal agreement.

18. **Procurement Plan**. The PMO has developed a Procurement Plan, acceptable to the Bank, for those activities to be procured by the PMOs. It will be available in Guang'an PMO, and will also be available in the Project's database and in the Bank's external website. The Procurement Plan will be updated, reviewed and agreed with the Bank annually, or as required, to reflect project implementation needs.

19. **Procurement and Selection Methods and Prior Review Thresholds**. The table below indicates the procurement and consultant selection methods and prior review thresholds for goods, non-consulting services, works, and consulting services.

Table A3-3: Thresholds for Procurement Methods and Bank Prior Review

Expenditure Category	Contract Value (US$)	Procurement Method	Bank Prior Review
Goods/IT Systems and Non-Consulting Services	≥ 10 million	ICB	All ICB contracts
	>=500,000 - < < 10 million	NCB Remarks: Where goods are not normally available from within China, the method of procurement will be ICB even if the contract value is less than US$10 million.	First NCB goods contract by each PMO irrespective of value and all contracts >= USD 3 million
	< 500,000	Shopping	None
	N/A	DC	All DC contracts
Works/ Supply & Installation	≥ 40 million	ICB	All ICB contracts
	>=500,000 - < 40 million	NCB	First NCB works contracts by each PMO irrespective of value and all contracts ≥ US$15 million.
	< 500,000	Shopping	None
	N/A	DC	All DC contracts
Consultants	≥ 300,000	QCBS, QBS	Firms: First contract for each selection method and all contracts ≥ US$1 million; Firms: All SSS contracts >= USD 100,000; Individual Consultant: Only in Exceptional Cases; SSS for individual consultant: ≥ US$50,000
	< 300,000	QCBS, QBS, CQS	
	N/A	SSS	
	N/A	IC	

Notes:
ICB: International Competitive Bidding
NCB: National Competitive Bidding
DC: Direct Contracting
QCBS: Quality- and Cost-Based Selection
QBS: Quality-Based Selection
CQS: Selection Based on the Consultants' Qualifications
SSS: Single Source Selection
IC: Individual Consultant selection procedure
NA: Not Applicable

20. **Advance Contracting and Retroactive Financing**. Retroactive financing of up to US$15 million would be available for eligible expenditures incurred on and after January 1, 2015. The procurement plan sets forth the contracts that are expected to be signed in advance of loan signing together with the relevant Bank review procedures. Only payments made under such contracts procured in accordance with the applicable Bank procurement/consultant selection procedures will be eligible for reimbursement by the Bank.

Environmental and Social (including safeguards)

Environment

21. Three Bank environmental safeguards policies are applicable to the project: OP4.01 Environmental Assessment, OP4.04 Natural Habitats and OP4.11Physical Cultural Resources. The project is classified as Category A as per OP4.01. Applicable WBG Environmental, Health and Safety Guidelines have been incorporated into the EAs. EA documents prepared include (a) EIA and EMP for the Linshui component; (b) EIA and EMP for the Qianfeng component; and (c) EA Summary for the project.

22. **Environmental Assessment**. Per OP4.01, the EA scope was determined to include not only Bank financed activities but also other infrastructure investments locally funded that complement the overall development plan of the new industrial zones in both Linshui and Qianfeng. Regardless of the source of funds, the EA covers those infrastructure investments that are necessary to meet the project objective and enable the utilization of these infrastructure during operation including linked investments. Besides the project activities under the proposed Bank project, there are also infrastructure investment projects (including roads, wastewater treatment plants etc.) that complement the overall development plan of the new urban and industrial areas in Linshui and Qianfeng but are not financed by the Bank. Since these investments, together with the Bank-funded project investments, are integral to the area's urban development and will be implemented in the same region within a timeframe that coincides or overlaps with the project, they have been included in the EA.

23. The project is anticipated to result in environmental and social benefits through improved infrastructure services, enhanced environmental management, and employment opportunities. Due to the nature and scale of construction and operational activities, the project has the potential to cause direct, indirect/induced or cumulative environmental and social impacts. Key environmental and social issues associated with the construction and operation of the project supported infrastructure include: (a) impacts related to soil erosion, vegetation clearance and disturbance and surface water/river pollution due to earthworks; (b) other construction impacts and social disturbance associated with wastewater, noise, dust and solid waste; (c) operational impacts such as noise, dust, air emissions, wastewater discharge, waste management associated with road transportation and wastewater treatment; and (d) operational risks associated with the WWTP. These impacts have been thoroughly assessed and can be adequately avoided, minimized and/or mitigated through measures developed either in the project design or in the project EMPs, and the Resettlement Action Plan (RAP).

24. *OP4.04 Natural Habitats*. The project area of influence is predominantly urban, industrial and agricultural, and does not include any critical natural habitats as defined in OP4.04. In both Linshui County and Qianfeng County Town, surface vegetation is mainly farmland crops, planted trees and bushes in rural areas. In Linshui, project activities will involve two rivers, i.e., Shiba River and Bajiao River. In Qianfeng, the Luxi River crosses the project area. The ecological survey does not show any protected or endangered plants, animals or aquatic species in the project areas and rivers.

25. The project will have impacts on terrestrial ecology due to earth excavation, soil erosion and clearance of vegetation/farmland during construction. If not well managed, project activities,

including the installation of wastewater interceptors along/crossing the rivers and operation of wastewater treatment plants, may also adversely affect river ecology. However, the conversion of rural farmland to urban and industrial land will not lead to significant loss of natural habitats or biodiversity. The project design and environmental assessment proposed a set of measures to avoid, minimize and mitigate ecological impacts. The project will not result in significant degradation, conversion or loss of natural habitats. The project will also bring positive environmental improvement on water quality and the ecology of rivers within the project's area of influence due to the installation of interceptors and wastewater treatment facilities. Post-construction vegetation and landscaping will also be carried out along transport corridors, public spaces and restored sites.

26. *OP4.11 Cultural Physical Resources.* In Linshui, a proposed sewage interceptor has been adjusted to avoid the Lingbaoshan Stone Carving and Bridge Relics Site. However, the pipeline is still close to the site. To minimize potential impacts on the relic site, pipe-jacking construction technology will be used for sections crossing the river bed and hill near the protection area. This approach will avoid open excavation and blasting, thus minimizing potential impacts. During construction, workers will be trained on methods and systems for protecting the relic site. Chance finds procedures are included in the EMP and as a result will be included in the bidding documents.

27. The project will also involve the relocation of 1,694 family graves (1,626 in Linshui and 68 in Qianfeng) that are scattered in farmland in the project area. Based on field surveys and consultation with local communities, it is concluded that these local family graves do not have significant archaeological or historical value. The relocation of, and compensation for, these family graves have been properly dealt with through the project RAP.

28. **Alternative Analysis**. During EA preparation, various alternatives have been considered taking into account environmental, social, technical and economic aspects. At the "Without project" vs "With project" level, it was noted that the project will have significant benefits in terms of providing skills training and employment opportunities to local residents, boosting regional economic development, and building environmental facilities. In addition, the project will bring international good practices to the towns for healthier and greener urbanization.

29. At the project activities level also several alternatives were considered. For the WWTP, site selection, process, scale, treatment levels, location of effluent discharge and disposal of sludge were carefully compared and environmental acceptable selections were made. For the interceptor in Linshui County, its alignment and construction technology were selected to avoid or minimize potential impacts on Lingbaoshan Stone Carving and Bridge Relics Site.

30. *Road building.* In Linshui, where the No.1 road will cross HuRong Expressway, an overpass option was selected as it will reduce earthworks and will be safer to construct than the underpass option. In Qianfeng, where Gongye Avenue will cross Luxi River, a one-span beam bridge option was selected as it will avoid building in-water piers and is preferable to a two-span bridge option.

31. **Induced and Cumulative Impacts.** Both towns have been going through a process of urban expansion and industrial development over the past years. They also have strategic plans for future development up to 2030. The EA carried out due diligence of past development, overlapping with proposed development in the coming 4-6 years, and projected development up to 2030 to assess induced and cumulative impacts. In order to continuously monitor such impacts, the project will support a technical assistance activity to conduct follow-up strategic environmental and social assessment during project implementation. This effort will enable a more detailed assessment that is adaptive to ongoing developments in the two towns.

32. Cumulative impact assessment conducted during project preparation covered urban expansion and industrial development in both towns:

- As of April 2014, Linshui County Town covered a total area of 18.12km², of which the industrial area (Linshui Economic and Technology Development Zone, ETDZ) was 7 km². Linshui ETDZ was established in 2006 and contains about 60 enterprises, including agricultural food processing, machinery manufacturing, etc. Environmental monitoring results show emissions from industries and ambient environmental quality met applicable environmental standards.

- As of April 2014, Qianfeng County Town covered an area of 6.15km², of which about 50 percent is industrial. Qianfeng Industrial Park was established in 2006 and contains 29 enterprises, including manufacturing of auto spare parts, textiles and garments. Environmental monitoring results show emissions from industries and ambient environmental quality met applicable environmental standards.

33. The proposed project will facilitate the urban and industrial expansion of these two towns. If not well-planned, rapid urban expansion can lead to deteriorating environmental quality around core urban areas with long-term consequences on local communities. Induced and cumulative impacts may be exerted beyond the direct area of influence of the project and even beyond the expansion area supported by the Bank loan. The induced and cumulative impact assessment considers future development scenarios and identified several key issues:

- According to the Master Plan of Linshui County Town (2009-2030), the built-up area of Linshui county seat will reach 22km² by 2019 and of 28.3 km² by 2030, compared to the 18 km² in 2014. Key infrastructure to be developed in the coming years, such as the West Ring Road, will facilitate the urbanization of current farmland in Linshui County Town. In Linshui ETDZ, the main industries will include logistics, auto spare parts, machinery manufacturing and non-ferrous metal metallurgy and processing industries.

- According to the Master Plan of Qianfeng District (2011-2020), the built-up area will reach 35.48 km² by 2020. Its main industries will include auto spare parts, electronic products, garments, textiles and shoe manufacturing. As of the project appraisal, Qianfeng District is preparing a Regulatory Planning for Qianfeng New Town (2013-2030), which indicates that by 2030 Qianfeng New Town will cover an area of 16.49 km². Qianfeng New Town includes the industrial park and its regulatory planning will prevail over the master plan for Qianfeng District, it is expected that conversion of

farmland to urban or industrial land from now to 2030 will be based on the regulatory plan, i.e. from 6.15km² to 16.49km².

34. Based on past, current and future developments, the identified key induced and cumulative impacts include the following:

- *Land use change and loss of green area.* In both towns, there will be significant land use changes by the end of the planning period. Expansion of urban and industrial areas will convert farmland and green spaces into urban, residential and industrial buildings. As most of the converted green area will be farmland, significant loss of natural habitats or biodiversity in the region is not anticipated.

- *Loss of agricultural land.* Most of the converted lands will be farmland, which will reduce agriculture-based incomes for local farmers. It is expected that rural livelihoods will be converted to urban and industrial-based livelihoods, which is already the trend in the project areas.

- *Impacts on regional drainage pattern*. The planned development will not impact natural river channels, and hence will not have significant impacts on regional drainage patterns. Due to the loss of green space, more stormwater runoff may end up in rivers, increasing local flooding probabilities. The drainage system has therefore been designed to a higher flood probability level.

- *Social issues.* Loss of farmland and agriculture-based livelihoods and conversion to urban and industrial based livelihoods presents both opportunities and challenges to local communities.

- Other issues may include increased pressure on environment quality such, e.g., air pollution, surface water quality, groundwater, and solid waste management.

35. The two towns have taken action to address these issues, including stipulating development boundaries, building wastewater collection and treatment facilities, solid waste facilities, restricting enterprises to low polluting, labor intensive industries, and building environmental monitoring and management institutions. Given the scale of planned development, and the complexity of issues, it is prudent to conduct a further assessment during project implementation, taking into account the mix of induced, cumulative and strategic issues related to urban and industrial development in the two towns. Terms of Reference for a Strategic Environmental and Social Assessment have been developed building on the preliminary assessment already conducted during project preparation, and included in the EMP.

36. **Environmental Management Plan.** EMPs have been prepared based on the findings of the EIAs. The EMPs outline measures to avoid, minimize, and mitigate potential environmental and social impacts as well as the budgets for their implementation. They outline the roles and responsibilities of pertinent organizations and institutions. The EMPs incorporate plans for training, monitoring and evaluation, and budget estimates. There are a number of investments which are non-Bank financed but which were deemed linked to the Bank-financed investments

and as such these investments were included in the EMP. The EMPs also include measures to address cumulative impacts identified during project preparation, including landscaping and waste management, and implementation arrangements such as mechanisms for stakeholder dialogue and engagement. They include sets of Environmental Codes of Practice for contractors, which will be incorporated in bid documents and contracts. The EMPs also includes mitigation measures and a comprehensive capacity building plan for the local environmental authority, and the TOR for a subsequent induced and cumulative impact assessment. The EMPs include clear institutional arrangement that defines the environmental management responsibilities, supervision and reporting duties of the prefecture-level PMO at Guang'an Prefecture and district/county-level PMOs in Linshui and Qianfeng. Compliance with the EMP will be included as a clause in all bidding documents. An independent environmental monitoring consultant will be hired to assist the PMOs in managing environmental safeguards compliance during project implementation.

37. **Public Consultation and Information Disclosure.** Two rounds of public consultations were carried out during project preparation. Public consultations were undertaken in the form of questionnaires, focus group discussions, and public meetings. Information disclosure on EA preparation was advertised through public bulletins, local newspapers, and the internet. The Chinese version of the draft EA documents were disclosed on the websites of Guang'an DRC on August 22, 2014 with a newspaper announcement in the Guang'an Daily and the final EA documents similarly disclosed on November 24, 2014. The English and Chinese versions of the draft and final EA documents were disclosed on the Bank's Infoshop on September 10, 2014 and November 25 and 27, 2014, respectively. The Chinese versions of the draft and final RAP were disclosed locally on August 25, 2014 and on October 16, 2014, respectively. The English versions of the draft and final RAP were disclosed on the Bank's Infoshop on September 10, 2014 and November 25, 2014, respectively. Public concerns raised during consultations have been incorporated into the project design, the EMPs and the RAP.

Involuntary Resettlement

38. Based on relevant Chinese laws and regulations and World Bank OP 4.12 on Involuntary Resettlement, GPMO, LPMO and QPMO have prepared a RAP to address involuntary resettlement impacts caused by the project. Resettlement planning work included project impact inventory surveys, social economic surveys and consultations over resettlement and livelihood rehabilitation measures.

39. Bank financed project construction and non-Bank financed land development in the area will cause 22,581 people from 6,434 families to be affected by the acquisition of 500 ha of collectively owned land; about 20,494 people from 5,814 families will be affected by the demolition of 1,321,237 m² of private houses. Although land development activities in Linshui County will be not financed by the Bank, resettlement will be carried out at the same time as the Bank financed project; therefore all related resettlement impacts are covered by the RAP.

40. **Linked projects.** There are a number of investments which are non-Bank financed but which were deemed linked to the Bank-financed investments and as such these investments are also included in the preparation of the Resettlement Action Plan (RAP). In Qianfeng these

include: (i) Industry Avenue Terminal; (ii) Keta Road link to the Industrial Avenue; and (iii) Western Cowboy WWTP; (iv) Luxi River Renovation Works. Since the Industrial Avenue Terminal investment is complete, a due diligence was conducted and the report attached to the RAP. In Linshui these include: (i) the West Ring Road linked to the Project Road 1; and (ii) No.2 Wastewater Treatment Plant. Furthermore the project has and will continue to assess induced and cumulative social impacts.

41. Key principles and considerations in project design and RAP preparation included:

a. Acquisition of land and other assets and relocation of people will be minimized as much as possible.

b. A socio-economic survey will be conducted to determine baseline conditions, especially of project-affected persons.

c. Compensation for houses or other properties will be determined at full replacement value.

d. Compensation will be provided to all project affected persons, including shop operators and those who lack house registration or other documents, such as business documents and legal documents.

e. Affected persons will be consulted during planning for the acquisition of land and other assets, and for provision of rehabilitation.

f. Financial and physical resources for resettlement and rehabilitation will be made available when required.

g. Institutional arrangements will be established to ensure effective and timely design, planning, consultation and implementation of the RAP.

h. Effective and timely supervision, monitoring and evaluation of project implementation will be carried out.

42. **Institutional Arrangement.** The related organizations for the project-related resettlement work have been set up and their duties have been defined. Organizations related to the resettlement work include: (a) PLG; (b) PMO; (b) house expropriation and compensation offices at all County/Districts; and (c) external monitoring agency for resettlement.

43. **Livelihood Restoration.** For Project Affected Persons (PAPs) affected by collective land acquisition, cash compensation will be arranged. Land acquisition compensation will include land compensation, a resettlement subsidy, and compensation for standing crops. The Social Security Scheme will also be applied. For PAPs affected by house demolition, the options of cash compensation and house property exchange scheme have been arranged.

44. **RAP Implementation Arrangements.** A multi-level organization has been established to implement the RAP. An independent monitor will be selected to monitor resettlement implementation and livelihood restoration. The PMOs will be responsible for internal monitoring

and will provide semi-annual internal monitoring reports to the Bank. Details of staffing and their responsibilities are provided in the RAP.

45. **RAP Budget and Funding.** The RAP contains a detailed resettlement cost estimation that covers the basic costs for resettlement, management, contingencies, surveys, design and monitoring. The basic resettlement cost includes compensation for land, standing crops, trees and reconstruction of affected infrastructure. The PMOs will allocate a budget under counterpart funding that is sufficient for resettlement under the project.

46. **Public Participation and Gender.** PAPs and organizations were informed about the project and its impacts in meetings during the preparation of the RAP. Focus group discussions and key informant interviews were used to consult potentially affected persons and obtain their views and preferences regarding resettlement impacts and mitigation measures, including land compensation, opportunities for employment, and social security programs, etc. These views and preferences have been taken into account during RAP preparation, and the majority of potentially affected persons agree that resettlement and rehabilitation measures planned under the RAP are adequate to address and mitigate any adverse impacts.

47. A summary of the results of the consultation exercise have been included in the RAP. The consultation identified women's needs and concerns in particular female farmers expressed interest in enrolling in the social security scheme. The social security Scheme will be applied to both male and female farmers whose land is acquired. Under the Social Security Scheme, women can get their pension when they reach 55 years old, while men can get their pension when they reach 60 years. Public participation will continue during RAP implementation. Project information will be provided to PAPs through the internet, television, newspapers, bulletins and posters. Information on the social security scheme will target female farmers to meet their expressed interest.

48. **Grievance Mechanism.** A grievance mechanism was established during the preparation of the RAP. All relevant telephone numbers were disclosed to PAPs. PAPs can dispute any aspect of resettlement. All disputed cases will be properly recorded. The mechanism has been disclosed to the local people and will be further disseminated through a Resettlement Information Booklet.

- *First Stage:* Affected parties may make oral or written complaints to the community or sub-district resettlement workers. In case of oral complaints, the resettlement office will create proper written records, and will provide a clear reply in two weeks. If the issue is significant, which requires reporting to higher authorities, the offices must try to obtain an answer from higher authorities in two weeks.

- *Second Stage:* If the affected parties are not satisfied with the answer from the first stage, they may appeal to the district expropriation and compensation office within one month from receiving the answer, and the district office shall decide on the issue within three weeks.

- *Third Stage:* If the affected parties are still not satisfied with the answer from the district office, they may appeal to the PMO in a month from receiving the answer, and the PMO shall decide on the issue within four weeks.

- *Fourth Stage:* If the affected parties are not satisfied with the answer from the third stage, they may appeal to a civil court within 15 days from receiving the answer.

49. *Monitoring and Evaluation.* Both internal and external monitoring is planned for resettlement implementation. Resettlement offices will be responsible for internal monitoring. A RAP Implementation Completion report will also be prepared. An experienced team will be hired as the external monitor to undertake independent monitoring of the resettlement program.

50. *Indigenous People*. There are no minority communities in the project area.

Annex 4: Operation Risk Assessment (ORAF)

CHINA: Sichuan Chongqing Cooperation: Guang'an Demonstration Area Infrastructure Development Project

<table>
<tr><th colspan="7">Project Stakeholder Risks</th></tr>
<tr><td>Stakeholder Risk</td><td>Rating</td><td colspan="5">Moderate</td></tr>
<tr><td>Risk Description:</td><td colspan="6">Risk Management:</td></tr>
<tr><td rowspan="2">(a) A slowing of the economy and, in particular, of the manufacturing sector, could exacerbate the issue by resulting in lower than expected job creation, particularly if the participating towns do not clearly establish their competitive advantage.

(b) Residents may have concerns about costs (tariffs) for wastewater treatment and may oppose tariff increases in future.</td><td colspan="6">(a) The Project will support the prefecture and local governments in identifying their comparative advantage and developing skills training programs targeted at low income groups, including project affected persons. The Bank will work with Linshui County Town in providing appropriate skills training programs to residents in Linshui County Town.

(b) The local governments are aware of the need to ensure cost recovery for the optimum operation and maintenance of the wastewater treatment facility. Residents are also keen that the environmental impacts of industrial development are properly managed. The Bank will monitor the efforts of implementing agencies to raise tariffs to the required level.</td></tr>
<tr><td>Responsibility:
Both</td><td>Status:
Not yet due</td><td>Stage:
Implementation</td><td>Recurrent:
☑</td><td>Due Date:</td><td>Frequency:
Continuous</td></tr>
<tr><td colspan="7">Implementing Agency (IA) Risks (including Fiduciary Risks)</td></tr>
<tr><td>Capacity</td><td>Rating</td><td colspan="5">Substantial</td></tr>
<tr><td>Risk Description:</td><td colspan="6">Risk Management:</td></tr>
<tr><td>This is the first time the prefecture and local governments have directly managed a World Bank financed loan. Sichuan Provincial Government, however, has significant experience with Bank financed projects and has taken an active role in guiding the Project. Based on the FM and procurement capacity assessment carried out during project preparation, project design has been adjusted to minimize capacity risks. These include: provision of FM and procurement training, preparation and distribution of a standardized FM and procurement manuals. Counterpart funding requirements are substantial; however, Bank financial appraisal has confirmed that these are affordable to Linshui County Town and Qianfeng District. The two local governments have confirmed that counterpart</td><td colspan="6">Sichuan Provincial Government has significant experience with World Bank financed projects and is taking an active role in guiding the Project. The World Bank team will provide regular training and further training will be planned during for early implementation. Implementation consultants will be hired to support the client in implementing the Project. A Procurement Agent will be engaged to support the PMOs in the procurement of goods, works, consulting and non-consulting services. Bank implementation support missions will monitor the proper implementation of Bank fiduciary policies and provide the required guidance. Bank missions will carefully monitor the budget for, and the timely provision of, the required counterpart funds from each local government and address any issues with their leaders and with the municipal government. As a newly established District, the Bank will pay special attention to ensure adequate project management capacity is built and advance counterpart funding plans are prepared.</td></tr>
</table>

funds will be provided in a timely manner.						
	Responsibility: Both	Status: In progress	Stage: Implementation	Recurrent: ☑	Due Date:	Frequency: Continuous
Governance	Rating	Moderate				
Risk Description:	**Risk Management:**					
A Project Leading Group has been established at the prefecture level to guide project implementation. Corresponding Project Leading Groups at local government levels have also been established. This will provide senior management oversight for project implementation and coordination between sector departments.	A Project Leading Group has been established at prefecture level to guide project implementation. Corresponding Project Leading Groups at local government level have also been established. This will provide senior management oversight for project implementation and coordination between sector departments. The Bank will also take proactive steps to keep the provincial and national government agencies informed of the project and monitor the functioning of the governance arrangements during implementation support missions.					
	Responsibility: Both	Status: In progress	Stage: Implementation	Recurrent: ☑	Due Date:	Frequency: Continuous
Project Risks						
Design	Rating	Substantial				
Risk Description:	**Risk Management:**					
Project components are not technically complex; however, there is a tendency for local design institutes to focus narrowly on the project-related infrastructure rather than looking at the overall sector status or issues from a wider perspective and they may not carry out a careful analysis of economic planning aspects. Overdesign of infrastructure, including roads and wastewater treatment facilities is also a risk. The project has been designed on national earthquake standards and stormwater systems to withstand an increased frequency and intensity of rainfall than national norms.	The design institute is relatively experienced and has participated in Bank preparation missions and has responded to guidance from the Bank during project preparation. The Feasibility Study Reports are of good quality and overdesign has been avoided. The Bank will work closely with the client during the detailed design phase to further support appropriate design of infrastructure services.					
	Responsibility: Both	Status: In progress	Stage: Implementation	Recurrent: ☑	Due Date:	Frequency: Continuous
Social and Environmental	Rating	Substantial				
Risk Description:	**Risk Management:**					
Urban-industrial expansion in both towns will lead to land use changes with potential impacts on the local environment and on current residents in these areas. A comprehensive	The Bank will carefully monitor the implementation of the EMPs, the RAP and cumulative impact assessment, through site visits, review of progress reports, internal and external monitoring reports, etc. It will ensure that any non-compliance with Bank policies and agreed safeguard documents is identified early and corrective actions are taken to bring the project into compliance.					

assessment of existing, planned and future impacts of urban expansion plans has been carried out from a social and an environmental perspective. EIAs/EMPs and a RAP, acceptable to the Bank, have been prepared. An initial assessment of cumulative impacts has been prepared and a more detailed assessment of cumulative impacts will be continued carried out during implementation with technical assistance from the project.						
	Responsibility: Both	Status: In progress	Stage: Implementation	Recurrent: ☑	Due Date:	Frequency: Continuous
Delivery Monitoring and Sustainability	Rating	Moderate				
Risk Description:	**Risk Management:**					
Technical assistance under the project includes project management and construction site supervision. The project management consultants will help with the establishment of an M&E system and on progress reporting. Under the project technical assistance, capital investment and municipal asset management plans will be prepared to build capacity for the sustainable operation and maintenance of built infrastructure as the towns expand.	The Bank will work closely with the client to ensure that designs are completed in a timely manner and procurement is completed smoothly. Bank missions will monitor implementation progress and construction quality through site visits, discussions with the PLGs/PMOs and with consultants. The Bank will also monitor the performance of the M&E system, including its design, implementation and follow-up corrective actions. The Bank will support the local governments in preparing capital investment and municipal asset management plans for town-wide municipal assets building capacity for ensuring the sustainability of assets beyond the project scope.					
	Responsibility: Both	Status: In progress	Stage: Implementation	Recurrent: ☑	Due Date:	Frequency: Continuous
Overall Risk						
Overall Risk:	**Rating**	**Substantial**				
Risk Description:						
The overall risk is considered Substantial. This is the PMO's first engagement with the Bank and it has limited familiarity with the Bank's fiduciary and safeguards policies. While mitigation measures have been put in place the project has inherent risks relating to environmental and social impacts, technical assistance implementation, and capacity of the counterpart to implement the project.						

Annex 5: Implementation Support Plan

CHINA: Sichuan Chongqing Cooperation: Guang'an Demonstration Area Infrastructure Development Project

Strategy and Approach for Implementation Support

1. The implementation support plan has been developed based on the Project risk profile recorded in the ORAF and focuses on those aspects that are judged to be of substantial risk. These include: (a) implementing agencies capacity to manage the Project; (b) project design; and (c) implementation of environmental and social safeguards.

Implementation Support Plan

2. **Implementing agency capacity.** Early start-up activities will include further training for the project PMOs and implementing agencies in the Bank's fiduciary and safeguards policies. The Bank will provide intensive support to ensure that the PMO begins early with the process of consulting services selection to hire the consulting firm to support project implementation. The domestic requirement to hire a tendering agency will also be encouraged by the Bank. The Bank will maintain regular communications with the PMO and follow up closely on mission findings.

3. **Project design.** The PMOs will hire a consulting firm staffed with engineers and technical experts to review technical designs and construction drawings and a consulting firm for construction supervision. The Bank will bring in additional expertise to review technical designs and to provide guidance and advice on technical designs. The design, implementation and contract management for the technical assistance activities will require intensive input from the client and the Bank. The Bank will bring in necessary expertise during implementation to support technical assistance activities. The design of the skills training pilot will also require additional expertise in the PMO to manage this activity and will require technical oversight by the Bank. A national education staff consultant will guide this activity, with oversight by the Bank.

4. **Social and environmental safeguards.** The Bank will closely supervise the environmental management plan, resettlement action plan and related frameworks, in particular when key sub-projects are being prepared and during construction. The PMOs will hire external monitoring consultants to review and report on safeguards during implementation. The Bank will carry out regular field visits, visit affected households and review documents. A strategic environmental and social assessment will be conducted as part of project technical assistance activities to help the towns identify the implications of their development plans and feed this into the strategic planning process.

5. **Frequency of Procurement Supervision**. In addition to the prior review of supervision to be carried out by the Bank's Beijing office, Bank procurement supervision missions and/or external auditors will conduct field visits to carry out annual post review of procurement actions. The post review sampling ratio will be at least one out of fifteen contracts.

6. **Focus of implementation and skills mix.** Most of the Bank team members are currently based in the China country office in Beijing. Formal supervision and field visits will be carried out semi-annually and will be supplemented by need-based visits to review technical aspects. Estimated inputs from different specialists are summarized below.

Table A5-1: Focus of Implementation Support

Time	Focus	Skills Needed	Resource Estimate (Variable Cost)
First twelve months	• Financial Management, • Procurement, • Safeguards • Consulting services selection • Strategic Economic Planning • Skills training	• Financial Management, • Procurement • Safeguards • Technical/Engineering • Urban/Regional Economist • Education	$45,000
12-48 months	• Financial Management, • Procurement, • Safeguards • Strategic Economic Planning • Skills training • Investment promotion	• Financial Management, • Procurement • Safeguards • Technical/Engineering • Urban/Regional Economy • Education • Environment	$35,000 per year
Last twelve months	• Financial Management, • Procurement, • Safeguards • Strategic Economic Planning • Skills training	• Financial Management, • Procurement • Safeguards • Economic/Financial • Urban Regional Planner	$50,000

TA5-2: Required Skills Mixed

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Municipal Engineer	8	8	International consultant
Engineering (Roads)	8	8	Country-office staff
Urban Planner	6	5	Country-based staff consultant
Regional Urban/Strategic Economic Planner	5	3	International staff consultant
Education Specialist	7	6	Country-based staff consultant
Economist	5	3	International staff consultant (for mid-term and completion)
Social Safeguards	12	7	Country-office based staff
Environment Safeguards	12	7	Country-office based staff
Financial Management	12	6	Country-office based staff
Procurement	12	6	Country-office based staff

Annex 6: Economic and Financial Analysis

CHINA: Sichuan Chongqing Cooperation: Guang'an Demonstration Area Infrastructure Development Project

I. Economic Analysis

1. Economic viability of the project has been assessed from two angles: (a) a general macroeconomic overview of the project zones and the greater economic areas they reside in; and (b) a benefit-and-cost analysis (BCA) to assess the economic return of the project.

a. Macroeconomic overview

2. The project zones include two separate development areas under Guang'an Prefecture: i) Linshui economic and technology zone (ETDZ) established in 2006, and ii) Qianfeng District, a newly established county-level district under the Prefecture. Linshui ETDZ is located in the southern part of Linshui County Town. Qianfeng District is to the east of Guang'an District. Both are under the greater administrative area of Guang'an Prefecture. The economic development of the two project zones will be heavily influenced by the local and regional macroeconomic climate. Table A6-1 provides an overview of key macroeconomic indicators. Both project zones have industry-dominated economies, with industrial value-added accounting for 81 percent and 73 percent of the GDP of Linshui ETDZ and Qianfeng District, respectively.

Table A6-1. Summary of Local and Regional Macroeconomic Indicators

	SICHUAN PROVINCE					
			GUANG'AN			
			Linshui County			
	Province	Guang'an Prefecture	County	**Project Zone I** Linshui ETDZ	Guang'an District	**Project Zone II** Qianfeng District
GDP (billion RMB)	2,384.98	75.22	14.82	5.08	21.96	9.03
Primary (billion RMB)	329.72	14.00	3.21	-	3.29	1.07
Secondary (billion RMB)	1,258.78	39.27	7.18	4.09	11.71	6.61
Tertiary (billion RMB)	796.48	21.95	4.43	1.01	6.95	1.36
Industries						
Industrial output (billion RMB)	3,103.32	97.55	15.77	12.39	29.83	20.66
Industrial value-added (billion RMB)	1,055.05	31.08	5.08	4.09	8.64*	5.37
Employment (persons)	970,500	109,200	17,900	14,554	32,100	12,000
Total fixed asset investment (billion RMB)	1,803.68	52.41	10.16	4.23	18.39	4.98
Income						
Urban per capita disposable income (RMB)	20,316	19,973	19,274	n.a.	21,642	21,642
Rural per capita income (RMB)	6,999	7,474	9,702	8,915	8,733	6,912
Population						
Total	80,762,000	4,684,900	1,032,700	n.a.	1,257,600	n.a.
Core	n.a.	878,300	215,400	11,666	309,600	44,400

* Estimate

Date source: Sichuan Province Statistical Yearbook (2013), Guang'an Prefecture Statistical Yearbook (2013); Linshui County Statistical Yearbook (2013), Qianfeng District Statistical Yearbook (2013), and Linshui PMO.

3. *Urban Population*. In 2011, the urban population in Linshui EDTX and Qianfeng District was respectively 139,000 and 44,400. Based on current and future trends, the population in Linshui ETDZ and Qianfeng District will respectively grow to 198,000 and 77,000 by 2020; and to 287,000 and 125,000 by 2030; and 350,000 and 168,000 by 2040 (Table A6-2).

Table A6-2. Population Projection

	Actual	**Projection**		
	2011	2020	2030	2040
Linshui County Town / ETDZ	139,000[1]	198,000	287,000	350,000
Average annual growth rate (%) – previous decade		*4.0%*	*3.8%*	*2.0%*
Qianfeng District Town (including Xinqiao industrial area)	44,400[2]	77,000	125,000	168,000
Average annual growth rate (%) – previous decade		*6.6%*	*5.0%*	*3.0%*

[1]Source: Linshui Statistical Yearbook 2012. The figure is calculated based on the total urban population of Linshui County less the urban population in 7 satellite district townships under Linshui. [2]Source: Qianfeng District Master Plan.

4. *Comparative advantage*. Due to the geographical proximity to Chongqing city, industries in both project areas will compete with and complement those in Chongqing EMR, especially areas within a 1-hour travel distance of the city.

5. Based on an ICOR[13] analysis over the period of 2008-12, Guang'an Prefecture and Linshui County had yielded relatively higher marginal returns on capital, when compared with other areas in Chongqing EMR that are within a one-hour travel distance from the city core (Table A6-3).

Table A6-3. Estimated Gross ICOR

	Guang'an Prefecture			**Linshui County**			**Chongqing 1-Hour Circle**		
	GDP (Billion RMB)	Fixed Asset Investment (Billion RMB)	**Gross ICOR***	GDP (Billion RMB)	Fixed Asset Investment (Billion RMB)	**Gross ICOR***	GDP (Billion RMB)	Fixed Asset Investment (Billion RMB)	**Gross ICOR***
2008	38.84	20.30	**3.15**	7.65	4.02	**3.31**	395.93	307.07	**4.14**
2009	45.03	29.92	**4.83**	8.86	5.93	**4.92**	507.65	397.49	**3.56**
2010	53.72	34.33	**3.95**	10.55	6.65	**3.92**	612.04	515.59	**4.94**
2011	65.99	42.52	**3.46**	12.96	8.25	**3.42**	776.27	568.88	**3.46**
2012	75.22	52.41	**5.68**	14.82	10.16	**5.48**	882.70	683.75	**6.42**
2008-12 average			**4.19**			**4.18**			**4.41**

Date source: Guang'an City Statistical Yearbook (2013); Linshui County Statistical Yearbook (2013); Chongqing City Statistical Yearbooks (2008-13)

*Due to data availability, the gross ICOR is estimated using the "fixed asset investment" of a given year(s) which includes both the costs of land acquisition and asset depreciation, therefore, generally higher than the "capital formation" recorded in the GDP of the same year(s). The ICOR calculated using this method is therefore higher than that using the investment component of the GDP.

[13]ICOR, also known as the marginal efficiency of capital, is an indicator of the production efficiency of an economy with respect to its capital inputs. ICOR is defined as the ratio between incremental changes in capital over incremental changes in output. A higher ICOR indicates lower efficiency of the capital input.

b. Benefit cost analysis

6. A benefit-cost analysis was carried out to assess the economic viability of the project over a 25-year period inclusive of a five-year construction period from 2015-2019, at a discount rate of 10 percent. Economic benefits and costs were expressed in domestic currency and constant 2014 prices. International costs were converted to local currency costs using an exchange rate of RMB 6.00 to US$1.00. Project costs and benefits were estimated on a without- and with-project basis.

7. ***Project costs*** include: (a) investment costs in urban infrastructure and revitalization activities (Table A6-4); (b) opportunity cost of land and capital; and (c) on-going costs of operations and maintenance (O&M) of the infrastructure constructed, assumed at 2 percent of total infrastructure investment. Transfer payments and financing costs were excluded from the economic analysis.

8. ***Economic opportunity cost of capital (EOCK)***. The economic opportunity cost of capital was estimated as a weighted average of the cost of supply of funds (the rate of time preference) and the return from investment (marginal productivity of capital), where the weights were the relative responsiveness of supply and demand to changes in the cost of capital (interest rate).[14] From 2007 to 2012, the average rate of time preference (proxied by the real interest rate) in China was around 0 percent.[15] The marginal return of investment was assumed to range between 12 and 16 percent. Assuming that the weight for the supply of funds was 30 percent while that for the demand for funds was 70 percent, EOCK is estimated at around 10 percent.

Table A6-4. Estimated Project Investments (including land acquisition and resettlement costs)

	Estimated Economic Cost (million RMB at 2014 price)
Linshui County Town	**650.5**
Transport corridor and industrial expansion (roads and bridges)	
Water, stormwater, wastewater and associated public service networks	
Wastewater treatment works	
Qianfeng District Town	**431.6**
Urban-industrial linkage and expansion (roads and bridges)	
Water, stormwater, wastewater and associated public service networks	
Riverside and urban public space revitalization	
Total	**1,082.1**

9. ***Opportunity costs of land*** using the costs of land acquisition as a proxy. Rural land is collectively-owned in China. Rural farmers are given 30-year non-tradable rights for land use. The opportunity cost of farm land can be proxied by the amount calculated under the current land acquisition compensation scheme. Based on the premise that land is primarily a productive input, the scheme compensates farmers for crop yields and for the floor area of their current housing. It also pays a fee and resettlement subsidy to the collective, based on the average annual agricultural yield of land over three years, multiplied by a factor established by the Land Administration Law.

[14]See Harberger and Jenkins (1991), Cost-Benefit Analysis of Investment Decisions, Harvard University.
[15]Source: the World Bank WDI database.

10. **Project Benefits.** The road component of the Project, accounting for a large proportion of the investment, will derive its primary benefits from: (a) enabling the expansion of urban economic activities within each project zone, (b) establishing connectivity between the built-up areas and new development areas within each project zone; and (c) enhancing regional connectivity between the project areas and their regional markets. In addition, project investments in wastewater interceptors will generate environmental and health benefits through increased access to wastewater treatment facilities in project areas. Project investments in Qianfeng District will also enhance the overall livability of the District by improving physical surroundings along the urban waterway.

11. ***Methodology.*** Economic benefits of the project were estimated based on economy-wide projections, an approach better suited for greenfield developments where demand from the economy is yet to be created. Industrial outputs from the current built-up industrial areas within each project zone were used as the basis to project future outputs from the remaining industrial areas of the zone. An implicit assumption of this approach is that industrial land within each project zone will yield a constant output. This is a reasonable assumption given the heavy emphasis on productivity enhancement by technical assistance activities and skills trainings financed by the project. A sensitivity analysis was carried out to assess the impact of lower demand for land and/or lower efficiency of land use on the economic return of the project.

12. ***Industrial land area and development***. According to *The 2030 Master Plan for Linshui County Town Southern Development Zone*, Linshui EDTZ will have a total industrial land area of 525 ha, of which nearly half is built up as of early 2014. According to *The 2030 Urban Master Plan of Qianfeng District*, the District will have a total industrial land area of 664 ha, of which nearly half is built up as of early 2014. At the current pace, the remaining urban and industrial land in both project zones will be built up in about 10 years i.e., 2025.

13. ***Land productivity*** (also known as land output intensity) was measured in terms of economic outputs from a unit of built-up industrial land area within each project zone. Industrial land productivity is related to many factors, such as land utilization in terms of floor area ratio, and building coverage ratio; investment intensity; nature and maturity of enterprises operating on the land and degree of clustering; labor density and productivity, etc.

14. According to a 2011 survey of 341 national level EDTZs, the industrial land productivity, measured in terms of total revenue per hectare of industrial land, averaged around RMB 129.85 million per ha, with the highest at RMB 2,491 million per ha and the lowest at RMB 0.26 million per ha. Of the 341 national level EDTZs surveyed, 68 had land productivity below RMB 30 million per ha. In the central and western region where the project zones are located, 128 national level EDTZs surveyed had an average land productivity of RMB 83.58 million per ha. Neither project zone has reached the stature of a national level EDTZ; land productivity stood at around RMB 47.67 million per ha and RMB 64.16 million per ha respectively in Linshui EDTZ and Qianfeng District.[16] Table A6-5 provides a summary of land productivity, industry profitability and labor intensity in the project areas.

[16] Source: "An Evaluation of Land Utilization in National Level EDZs," Land Use Management Bureau, Ministry of Land Resources, January 7, 2013. http://www.mlr.gov.cn/zwgk/zytz/201301/t20130107_1173335.htm

Table A6-5. Industrial land productivity, industry profitability and labor density

	Linshui ETDZ	Qianfeng District
	2012	2013
Revenue (million RMB per ha)	47.67	64.16
Value-added (million RMB per ha)	15.73	16.67
Tax revenue (million RMB per ha)	0.76	1.20
Value-added/ industrial revenue	*33%*	*26%*
Industry profit margin	*4.6%*	*3.9%*
Employment (workers per ha)	56	37

Source: Linshui and Qianfeng PMOs; Linshui Statistical Yearbook 2012.Qianfeng District Statistic Yearbook 2013

15. ***Benefit attribution.*** To avoid potential over-attribution of economy-wide benefits to project-specific investments, this analysis took the following conservative measures to quantify project-specific economic benefits:

i) In measuring economy-wide impact, the analysis only quantified the impact on industries even though urban infrastructure to be developed under the project will also benefit commercial and residential sectors. Today, industrial value-added accounted for 81 percent and 73 percent of the GDP from Linshui ETDZ and Qianfeng District, respectively. As both project zones become more mature, commercial and residential sectors will play a greater role in the local economy. According to *The 2030 Master Plan of Qianfeng District*, by 2020 non-industrial sectors are expected to contribute to 38 percent of the district's GDP.

ii) In measuring the direct industrial impact of the project investment, fiscal revenues from new enterprises entering the project zones were used as a proxy for direct benefits from project investments. The total value added generated by the enterprises includes not only taxes on production, but also compensation to employees and corporate profits, both of which were not accounted for in the analysis as a direct benefit from project investments, because they are more the direct result of other inputs into industrial production, such as labor in the case of employee wages, and capital investments in the case of corporate profits.

iii) In estimating future tax revenue from the new enterprises in the project zones, the analysis used current average tax revenue from a unit of built-up industrial land as a proxy. This is a conservative estimate because many enterprises in the project zones today are still enjoying various tax incentives in their early phase of development.

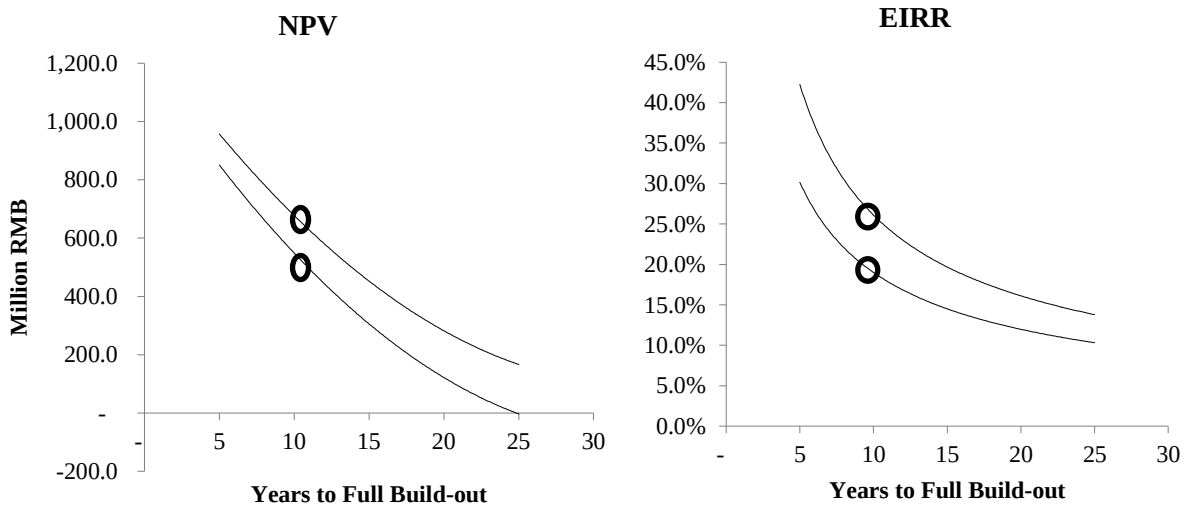
Summary of the Project Economic Analysis

16. Based on the above assumptions, at a discount rate of 10 percent, Project investments will generate an economic net present value (ENPV) of RMB 543.6 million and RMB 672.9 million in Linshui ETDZ and Qianfeng District respectively, translating to an economic internal rate of return (EIRR) of 19.3 percent and 26.1 percent respectively (Table A6-6).

G. Sensitivity Analysis

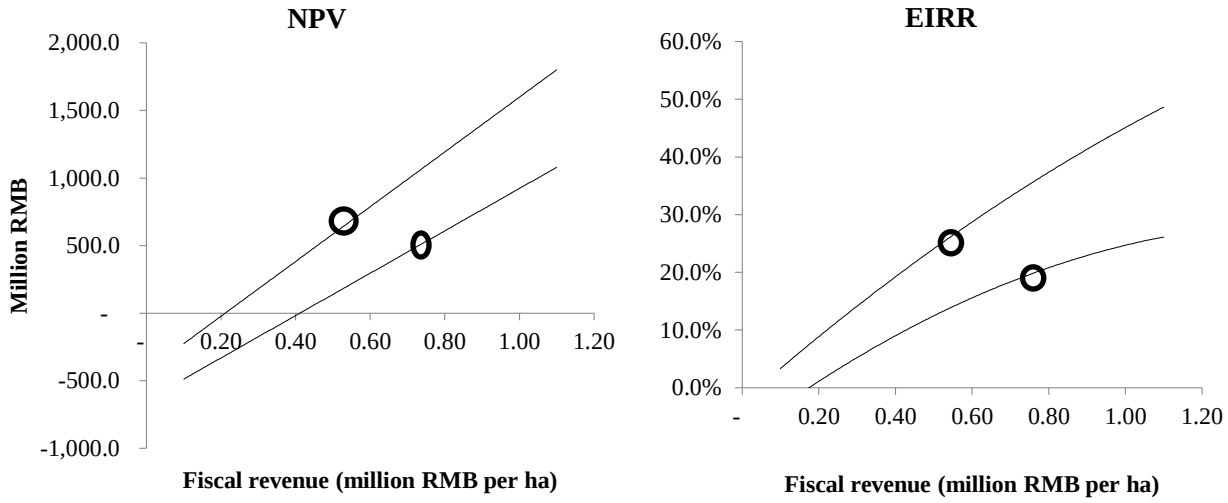
17. ***Impact of demand for industrial land in the project areas.*** Demand for land in the project zones may be proxied by the time it will take the remaining industrial area to become fully built-up. The outcomes of the sensitivity analysis indicate that the economic return of the project investment is sensitive to the build-up pace of the project zone. All else equal, project investments will cease to yield a positive return if it takes longer than 24 years for Linshui ETDZ to be fully built up, or longer than 34 years for Qianfeng District to become fully built up.

Figure A6-2: Sensitivity of Project Economic Return to Time to Build out



18. ***Impact of the efficiency of land use.*** Economic returns of the project investments are also sensitive to the productivity of industrial land. All else being equal, project investments will cease to yield a positive return if the tax contribution from industrial land drops below RMB 0.41 million per ha in Linshui ETDZ, or below RMB 0.21 million per ha in Qianfeng District.

Figure A6-3: Sensitivity of Project Economic Return to Productivity of Industrial Land



II. Financial Analysis

19. A financial analysis of the project was carried out from the perspective of the local governments of Linshui County and Qianfeng District to assess; (a) overall financial viability of project investments; and (b) cost of wastewater treatment services in Linshui EDTZ.

20. Financial costs to local governments associated with the project include investment costs and on-going operating and maintenance costs of infrastructure constructed under the project. The weighted average cost of capital (WACC) to the local governments was assumed at 7.0 percent.

21. Financial benefits from the project investment include local tax revenues and land sales. To be conservative, the financial analysis only took account of industrial portions of local tax revenues and proceeds from industrial land sales.

22. *Local tax revenues.* As is often the case in China, both project zones provide local industries a myriad of local tax incentives in their initial years of operation. The analysis assumed: (a) a 3-year local tax relief for all new enterprises, and (b) a 70/30 split between the local and central portions of tax revenues from industries operating in the project zones.

23. *Industrial land sales.* In China, the price of industrial land is regulated with a set minimum for any given location. Local governments often sell industrial land below the costs of development in lieu of future tax revenues. Within the Chongqing 1-hour circle, Linshui ETDZ offers the lowest-cost industrial land at RMB 0.84 million per ha compared with RMB 1.2 million per ha in Qianfeng District. Table A6-7 provides a summary of the industrial land sales in the period of 2009-13.

Table A6-7. Industrial land sales in the project zones (2009-13)

	2009	2010	2011	2012	2013
Linshui EDTZ (mu)	220	442	578	717	913
Qianfeng District (mu)	964	859	203	945	254

Source: Linshui and Qianfeng PMO

Wastewater treatment facilities in Linshui EDTZ

24. Today, Linshui county town only has one WWTP (No. 1) with an installed capacity of 20,000 cubic meters per day reserved solely for domestic wastewater treatment. Industries in the fast growing EDTZ are not yet served by any municipal wastewater treatment facility. According to the urban master plan, two WWTPs (WWTP No. 2 and No. 3) will be constructed in the EDTZ during 2015-17 to serve the growing needs for industrial wastewater treatment. While the municipal government will finance WWTP No. 2 through a BOT contract with a designed capacity of 30,000 cubic meters per day, the project will finance the first phase of WWTP No. 3 with a designed capacity of 4,000 cubic meters per day and a long-term capacity of 15,000 cubic meters per day (see Table A6-7 for details).

25. The financial analysis assesses: (a) break-even tariff for municipal government to provide industrial wastewater treatment services to Linshui EDTZ; and (b) cost of service from the project-financed WWTP No. 3.

Table A6-8. Two WWTPs to be constructed in Linshui EDTZ

	WWTP No. 2	**WWTP No. 3**
Planned capacity	30,000 m3/d	4,000 m3/d (Phase I) 15,000 m3/d (Phase II)
Construction period	2015-2017	2015-2017 (Phase I)
Estimated investments	RMB 90 million	RMB 12 million

26. *Costs of wastewater treatment service* include; (a) investment cost of the plant; (b) a fixed O&M, estimated at around RMB 4.0 million and RMB 1.2 million per annum for WWTP No.2 and WWTP 3 respectively, (c) a variable O&M at RMB 0.40 per cubic meter of wastewater treated; and (d) related taxes and financial charges.

27. *Current wastewater treatment tariff scheme in Linshui county town*. Today, domestic customers are billed a wastewater treatment surcharge of RMB 0.50 per cubic meter on top of the water tariff. Due to a lack of treatment facilities for industrial wastewater, the industries in the EDTZ are required to pre-treat their wastewater before discharging it to the surrounding areas.

Summary of the Project Financial Analysis

28. At a WACC of 7.0 percent, Project investments will generate an estimated financial net present value (FNPV) of RMB 47.8 million and RMB 240.1 million, and a financial internal rate of return (FIRR) of 10.8 percent and 15.6 percent to the governments of Linshui County and Qianfeng District, respectively.

Table A6-9. Summary of the results of the project financial analysis

	Present value (RMB million @ 7.0% WACC)	**FIRR**

Linshui ETDZ	47.8	10.8%
Qianfeng District	240.1	15.6%

29. At a WACC of 7.0 percent, the break-even tariff for Linshui County government to provide industrial wastewater treatment service was estimated at RMB 1.75 per cubic meter wastewater treated, equivalent to an RMB1.58 per cubic meter surcharge on the water tariff. The current tariff of RMB0.50 per cubic meter is far from sufficient to recover the full cost of service. Due to its relatively small scale, the financial cost of supply from WWTP No. 3 is higher than the sector-level break-even tariff, at an estimated RMB2.12 per cubic meter of wastewater treated, equivalent to an RMB1.91 per cubic meter surcharge on the water tariff. Linshui county government plans to subsidize the financing gap in the interim period and will review this as and when the plant is ready for expansion, the timing of which will depend on the ETDZ build-out rate.

30. Qianfeng District has no centralized wastewater treatment services and there is no tariff regime in place. As a minimum, the wastewater treatment plant will comply with the prefecture government stipulated rates (RMB 0.40, RMB 0.70, and RMB 0.75 per cubic meter for residential, institutional, and commercial users, respectively) and any shortfalls would be subsidized by government in accordance with the BOT agreement.

III. Financial Assessments of the Implementing Agencies

31. A financial assessment of Linshui County and Qianfeng District government was carried out to assess: (a) fiscal impact of the proposed project; (b) sufficiency of counterpart funds during project implementation; and (c) debt service capacity of the borrower.

32. *Local government sources of disposable funds* include revenues and transfers. Sources of revenues to local governments may be classified into two categories: (a) fiscal revenues, including both tax and non-tax revenues; and (b) non-fiscal revenues, including land sales and gains from investments. Transfers from upper-level governments constitute another important source of disposable funds to local governments, which help them finance a part of expenditures on education, social security, government workers' wages, etc. During 2008-13, Linshui County government sourced 67-75 percent of its disposable funds from government transfers; 10-19 percent from non-fiscal revenues; and 13-15 percent from fiscal revenues. During its first year as an independent district under Guang'an Prefecture, Qianfeng District government received 59 percent of its disposable funds from non-fiscal revenues; 28 percent from fiscal revenues; and 12 percent from government transfers. Guang'an Prefecture Finance Bureau has confirmed that the District is can provide counterpart funding for the Project and meet debt service requirements.

Figure A6-4. Government Sources of Revenue (RMB million)

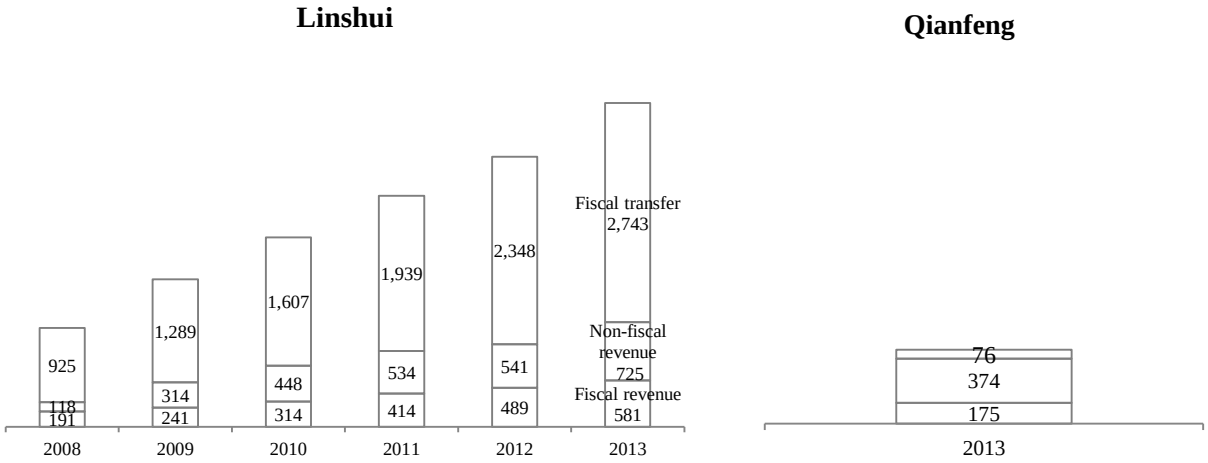


Table A6-10. Disposable sources of funds to the local governments (RMB million)

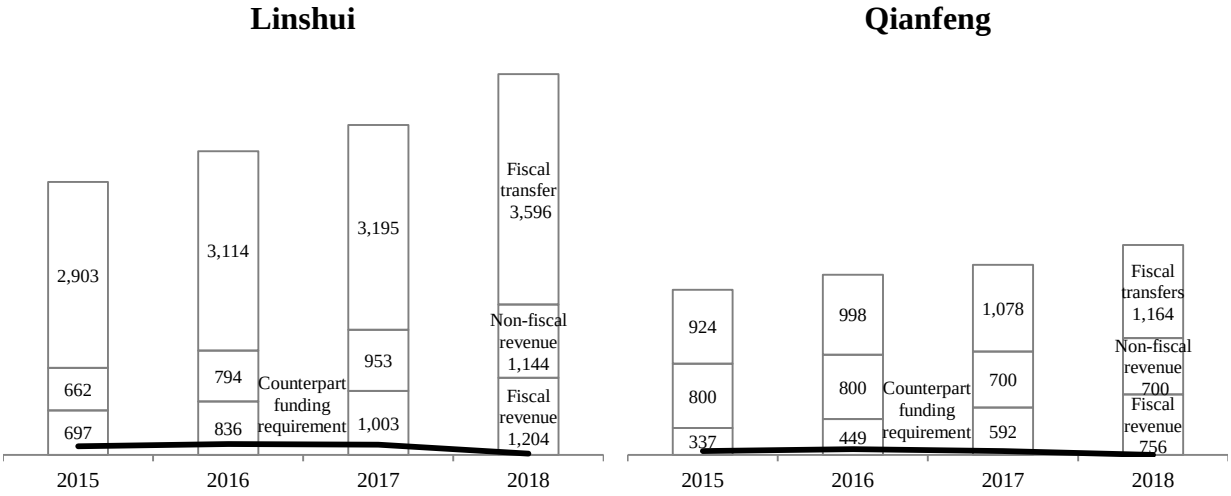
	Linshui County						Qianfeng District
	2008	2009	2010	2011	2012	2013	2013
Fiscal revenue	191	241	314	414	489	581	175
Non-fiscal revenue	118	314	448	534	541	725	374
Fiscal transfer	925	1,289	1,607	1,939	2,348	2,743	76
Total	**1,234**	**1,844**	**2,369**	**2,887**	**3,377**	**4,049**	**632**

33. *Counterpart funding requirement*, during the peak years, is estimated to account for 3-4 percent of total disposable funds (6-10 percent of the total revenues) of the project local governments. In both cases local government annual revenue growth alone should be sufficient to cover counterpart funding requirements.

Table A6-11. Counterpart fund requirement and local government revenue projections (RMB million)

	Linshui County				Qianfeng District			
	2015	2016	2017	2018	2015	2016	2017	2018
Fiscal revenue (tax and non-tax)	697	836	1,003	1,204	337	449	592	756
Non-fiscal revenue (land sales, etc.)	662	794	953	1,144	800	800	700	700
Fiscal transfer from upper-level governments	2,903	3,114	3,195	3,596	924	998	1,078	1,164
Total revenues to the local government	**4,262**	**4,744**	**5,151**	**5,944**	**1,724**	**1,798**	**1,778**	**1,864**
Counterpart funding requirement	**136**	**173**	**162**	**24**	**48**	**73**	**48**	**-**

Figure. A6-5
Revenue Source and Counterpart Funding Requirement (RMB million)



34. *Long-term debt outstanding and annual service obligations.* Both governments have recorded low levels of long-term outstanding debt and debt service obligations. In Linshui, annual long-term debt service has remained below 8 percent of total government revenues since 2008. Due to its short history, Qianfeng District government does not have any long-term debt outstanding allowing ample room for debt financing of infrastructure development.

Annex 7: Project Map

CHINA: Sichuan Chongqing Cooperation:
Guang'an Demonstration Area Infrastructure Development Project