

# PROJECT INFORMATION DOCUMENT (PID) CONCEPT STAGE

Report No.: PIDC1094

<b>Project Name</b>	Chongqing Small Towns Water Environment Management Project (P133117)
<b>Region</b>	EAST ASIA AND PACIFIC
<b>Country</b>	China
<b>Sector(s)</b>	General water, sanitation and flood protection sector (60%), Wastewater Collection and Transportation (30%), Wastewater Treatment and Disposal (10%)
<b>Theme(s)</b>	Water resource management (60%), Pollution management and environmental health (40%)
<b>Lending Instrument</b>	Investment Project Financing
<b>Project ID</b>	P133117
<b>Borrower(s)</b>	People's Republic of China
<b>Implementing Agency</b>	Chongqing Project Management Office
<b>Environmental Category</b>	A-Full Assessment
<b>Date PID Prepared/ Updated</b>	03-Nov-2013
<b>Date PID Approved/ Disclosed</b>	01-Dec-2013
<b>Estimated Date of Appraisal Completion</b>	25-Apr-2014
<b>Estimated Date of Board Approval</b>	28-Aug-2014
<b>Concept Review Decision</b>	Track I - The review did authorize the preparation to continue

## I. Introduction and Context

### Country Context

China is experiencing rapid urban growth, with 50% of the population currently living in urban areas; by 2020, this number is expected to be 70%. This rapid growth is creating pressures for cities to expand their public infrastructure, increase municipal services, and provide employment for migrants. To relieve these pressures on the larger cities, the government's policy of a "New Urbanization Agenda" is now focused on lower-tier and smaller sized cities, in which the aim is to create conditions and facilities necessary to attract investments and to accommodate growing populations.

Chongqing Municipality (CQM), with an area of 82,400 km<sup>2</sup> and a total population of 33.3 million,

has over 45% of its population living in rural areas (this rural population percentage is higher than those of the other three provincial level cities of Beijing, Shanghai, and Tianjin with rural population levels of 14%, 11% and 38% respectively). CQM has a total surplus rural labor estimated at over 8.45 million people. The strategic challenges of urban-rural disparity, regional disparity, and income disparity at the national level are mirrored in Chongqing. As a result, Chongqing was selected by the central government in 2007 as one of two pilot municipalities (the other being Chengdu Municipality) to promote urban-rural integration as part of the national strategies of Western Region Development, Urban-Rural Integration and Development prioritized in the country's 11th and 12th Five-Year Plans (FYP).

Chongqing's development strategy of "one circle and two wings" defined a four-tier urban settlement system, including a metropolitan core (planned urban population of 9.3 million by 2020), four sub-regional central cities (planned populations of 0.5-1 million each), twenty-five county seat cities (planned populations of 0.2-0.5 million each), and around three hundred key towns. Compared with the scale of rural-to-urban migration, the receiving capacity of the metropolitan core and sub-regional cities is relatively limited. CQM has determined that the twenty-five county seats (all third-tier cities) will play a major role in relieving these pressures by accommodating one third of CQM's total urban population in the future. As a result, CQM is promoting the development of these county seats through a package of policy reforms and incentive policy instruments.

### **Sectoral and Institutional Context**

China's water law embraces the integrated water resources management (IWRM) approach. This is reflected in the river basin planning and management approaches for large rivers and lakes, which are now being extended to smaller-river systems. For flood management, under the flood control law, China has been particularly effective in recovery after major disasters resulting from extreme events. However, flood management has conventionally focused on structural measures, such as reservoirs and dikes for major rivers. While the government is shifting towards a more balanced approach that also includes non-structural measures such as flood forecasting, flood emergency planning, and river management regulation enforcement, cross-sectoral issues such as land use planning, monitoring and information sharing, coordination between river basins and among local government organizations, and regulations for multi-purpose reservoirs remain to be addressed. In the past few years, with the Bank's assistance, the government has begun piloting risk-based flood management including flood risk mapping and zoning. However, these actions need to be integrated into urban planning to effectively reduce flood risks.

As a response to high levels of ambient pollution, the Chinese government is stepping up efforts in emission control. Detailed rules and regulations are being rolled out and enforced to implement the Environmental Protection Law and Water Pollution Control Law. The overall approach is to integrate strategic assessments, pollution reduction at source, and wastewater treatment and utilization. While progress is being made in different river basins, the current pace of urbanization and industrialization risks to overturn past successes. The focus on end of pipe treatment and a lack of emphasis on wastewater collection systems is a particular concern in small cities and towns in China.

Chongqing municipality has an average annual rainfall of 1,025 mm, mostly concentrated in the flood season from June to September, and significant rivers such as the Wujiang and Fujiang flowing through the project counties. River flooding is a common challenge with a 1/10 flood protection level at most county seats. Associated with economic and population growth, flood

damage is increasing as exposure to flooding rises. The response from CQM represented by the water resources bureaus at the municipal and county levels is to invest heavily into the flood management structures and introduce critical non-structural measures such as flood forecasting and early warning systems. Considering the expected impacts of climate change, the risk exists that the magnitude of extreme events will increase and further increase flood damage. Implementing non-structural measures will be important to enable populations to live with the increasing potential flood risk associated with climate change.

Water pollution from increasing urban populations and intensifying industrial activities is also becoming a very important issue in many parts of the municipality including several of the project counties. The municipality as a whole, located upstream of the Three-Gorges reservoir, lacks sewage collection and treatment infrastructure and capacity. The government is currently working to narrow this gap with funding from different sources.

The proposed project is Chongqing's response to introduce and implement an integrated water environment management and flood risk management approach in the four project counties, in connection with the municipality's rapid urban-rural integration investments. The project interventions have been included in the respective municipal and county governments' master plans and 12th FYPs. In addition to the investments in structural and technical (non-structural) interventions, there is a strong need to strengthen water environment and flood management capacity at the county levels through technical assistance and training.

Good progress has been made in recent years to reduce flooding risks, in particular in the existing built-up areas of these counties seats, through structural measures. However, flooding risks in the new residential and industrial areas or those currently under development in the county seats need to be fully managed before these county seats can perform their roles in Chongqing's urbanization process in a safe and sustainable manner. While the current population has experience with previous flood events, the new residents will be unaware of the urban flood risk. Awareness raising and emergency preparedness will need to be reinforced.

### **Relationship to CAS**

The proposed Chongqing Small Towns Water Environment Management Project is consistent with the China Country Partnership Strategy (CPS) FY2013-2016 (approved by the Board on October 11, 2012) and serves the two strategic themes defined in the CPS: Supporting Greener Growth, and Promoting More Inclusive Development in China. More specifically, the project supports the expected outcomes called for in the CPS FY2013-2016: (i) enhancing urban environmental services, (ii) demonstrating sustainable Natural Risk Management (NRM) approaches and pollution management, (iii) strengthening mechanisms for managing climate change, and (iv) enhancing opportunities in small towns and rural areas.

## **II. Proposed Development Objective(s)**

### **Proposed Development Objective(s) (From PCN)**

A preliminary project development objective (PDO) proposed is to reduce flood risks and improve wastewater services in selected counties of the Chongqing Municipality.

### **Key Results (From PCN)**

The key results from the project will include: (a) reduction in flood risk and increased resilience to extreme events and climate change (measured by changes in flood protection levels, changes in

exposure through improved flood zoning, and changes in vulnerability through strengthened flood forecasting and early warning systems); (b) increase in wastewater collection and treatment rate and related reductions in pollution emission levels as measured by carbonic (BOD/COD) and nutrient based (Nitrogen and Phosphorus) pollution levels; (c) improvements in water quality levels of secondary river basins in Chongqing Municipality as measured by oxygen levels, COD/BOD, and nutrient levels; and (d) improvement in water environment and flood management capacity.

### III. Preliminary Description

#### Concept Description

The World Bank has supported Chongqing's agenda of Reform and Urban-Rural Integration through assistance with highway connection improvements, sewage collection and treatment, flood control, water supply, and vocational education and health care services in Chongqing's small cities and rural areas under two previous Bank projects.

The four project counties, which are pre-screened and have been suggested for the Bank's support under the proposed project, represent a variety of local economic conditions, geographic features, and water environment challenges that county seats in Chongqing are facing. Among these four selected counties, Tongnan and Rongchang counties represent the western peripheral counties that are within Chongqing's 'one-hour driving-time' economic circle. The other two counties, Shizhu and Pengshui counties in the southeast wing are representatives of Chongqing's remote rural counties in the mountainous areas that are typically less developed and dominated by minority populations. The two counties are officially considered to be poor counties, on the State (Shizhu) and municipal (Pengshui) levels respectively.

All these four county seats have experienced rapid urban growth over the last ten years. The pace of urban expansion in these four county seats will be further accelerated as a result of CQM's urbanization policies targeted at small cities. According to their master plans, these four county seats are expected to substantially expand in the coming decade. Total populations and built-up areas of these four county seats are expected to increase by 50-100% by 2020 compared to current levels.

Typically located in deep river valleys and built on scattered small pockets of scarce land available for urban construction, the growth and development of these county seats has been severely constrained by these cities' disadvantageous mountainous topography, in particular in the two sub-regions of the northeast wing and southeast wing. Given their topographic and geological conditions, county seats in Chongqing are exposed to relatively high risks of events such as river flooding, land slides and soil erosion, and water pollution.

The investments proposed by CQM for these candidate project counties all aim to mitigate the risks of floodings, landslides, and soil erosion for the new urban areas (either recently developed or currently under development) in the county seats, and also improve water quality in those locations. The current proposed investments are also in line with the CQM government's master plan focused on:

- Supporting CQM's efforts to promote the urban development of county seats (third-tier cities in Chongqing's urban system), which perform critical roles and have a great potential for facilitating the rural-to-urban migration from Chongqing's vast rural area.
- Prioritizing water-related investments needed in selected county seats for securing a

managed urban expansion in a safe and sustainable manner. Investments may include: i) hazard mitigation investment in river embankments against flooding, landslides, and soil erosion, and ii) water pollution control and water resources management facilities.

The proposed project will include the following two components:

**Component 1: Water Environment Infrastructure Improvement**

- a. Sub-component 1: Flood management in Tongnan County. This component includes the construction of a river embankment of 6.7 km and a sluice gate needed to raise flood protection levels along the Fujiang River to 1/20 year floods for the new urban expansion area (Dafuba) in the county seat, with associated dike-top roads and non-structural measures applicable at county level.
- b. Sub-component 2: Flood management and wastewater treatment in Rongchang County. Structural measures include a river embankment of 13.6 km along the Laixihe River upstream to the county seat's flood protection investment funded by the Bank's previous loan project (CSCP), with associated dike-top roads, pipe works (6.2km), and the upgrading of an existing WWTP from current capacity of 350 m<sup>3</sup>/day up to 2,300 m<sup>3</sup>/day. Non structural measures applicable at county level will also be implemented.
- c. Sub-component 3: Flood and wastewater management in Shizhu County. This sub-component includes a river embankment of 6.7 km along the Longhe River, upstream and downstream to the county seat's flood protection project funded by a previous Bank loan project (CSCP), with associated dike-top roads of 2.6 km and sewage/drainage pipes of 14.4 km (including wastewater collection pipes in the old urban area), and non structural measures applicable at county level.
- d. Sub-component 4: Flood management and wastewater management in Pengshui County. Structural measures include a river embankment of 2.66 km on the left side of Wujiang River needed to raise the flood protection level to 1/20 year floods for the county seat's new urban area. Also included are civil works for 4 km of sewage collection pipes and 2.6 km of drainage pipes, along with non structural measures applicable at county level.

**Component 2: Institutional Capacity Building and Project Implementation Support** This component has two sub-components.

- a. Non-structural measures for water environment and flood management. Innovation and capacity-building in the area of non-structural measures will be important to enhance water environment management effectiveness and sustainability. There is a need to link particularly the activities of the main sectoral agency, Ministry of Water Resource, and its regional entity, the Yangtze River Commission, with those of local government organizations, particularly those responsible for land use planning. The main non-structural measures that are potentially applicable at municipal or river basin/sub-basin level and are being considered for inclusion under the project include: (i) optimal operation of physical systems for flood and water environment management in the river basin or sub-basin context; improved reservoir regulation and monitoring; and enhanced cooperation mechanisms with hydropower operating companies.; (ii) improved flood forecasting and early warning systems; (iii) development of flood contingency plans or flood emergency preparedness plans; (iv) flood management facility operation and management staff training and knowledge exchange, (v) public awareness raising of flood risk; and (vi) dissemination of project results within Chongqing and China.
- b. Project management and implementation support through provision of consulting services to:
  1. Enhance the design, supervision, and certification of works carried out under the project;
  2. Strengthen the capacity of the Project Implementation Entity at the municipal and county levels in the areas of project management, procurement and contract management, accounting and financial management, and compliance with safeguards policies;

3. Strengthen the institutional capacity for operation and maintenance (O&M) for urban flood and water environment management facilities at the county level; and
4. Develop funding mechanisms to sufficiently cover O&M of the improved structural and non structural measures.

#### IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
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	

#### V. Financing (in USD Million)

Total Project Cost:	163.95	Total Bank Financing:	100.00
Financing Gap:	0.00		
<b>Financing Source</b>			<b>Amount</b>
Borrower			63.95
International Bank for Reconstruction and Development			100.00
Total			163.95

#### VI. Contact point

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