### Project Information Document (PID)
#### Appraisal Stage

<table>
<thead>
<tr>
<th>Project Name</th>
<th>China Bengbu Integrated Environment Improvement Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region</td>
<td>EAST ASIA AND PACIFIC</td>
</tr>
<tr>
<td>Sector</td>
<td>General water, sanitation and flood protection (80%); Roads (10%); Water Supply (5%); Sub-national Gov. Admin (5%);</td>
</tr>
<tr>
<td>Project ID</td>
<td>P096925</td>
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<tr>
<td>Borrower(s)</td>
<td>THE PEOPLE’S REPUBLIC OF CHINA</td>
</tr>
</tbody>
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| Implementing Agency | Bengbu Municipality  
Administrative Office Center  
Donghai Avenue  
Anhui Province  
China  
233040  
Bengbu Municipal Development and Reform Commission  
Administrative Office Center  
Donghai Avenue  
Anhui Province  
China  
233040 |
| Environment Category | [X] A  [ ] B  [ ] C  [ ] FI  [ ] TBD (to be determined) |
| Date PID Prepared | September 3, 2007 |
| Date of Appraisal Authorization | September 17, 2007 |
| Date of Board Approval | December 20, 2007 |

### A. Country and Sector Background

1. Over the past two decades, China experienced very rapid industrial growth along the eastern corridor and the Pearl River Delta, where average GDP growth ranged between 10% and 15% per annum, fueled by domestic and foreign direct investments. A second southern corridor developed near Jiangsu and Zhejiang in the past decade or so, which further affected economic growth of Anhui Province. This rapid growth impacted the traditional industrial bases in neighboring provinces in mid-east China (e.g., Anhui), where their economies declined, with GDP growth rates dropping below the national average. The decline in growth, and the erosion of traditional industrial bases resulted in flight of capital and industries to the eastern industrial corridors which had more favorable regulatory frameworks, superior infrastructure, and better social and living environments.

2. Anhui Province (AP), located in the mid-east region of China, had a 2005 population of 65 million, of which 35% was urban. AP is a relatively poor province in central China. Its economic activities include agriculture, forestry, fisheries, and industry. The major industries are coal mining, ferrous metal smelting and pressing, heavy machinery, and power and heating
supply equipment. The GDP of the industrial and non-industrial sectors ranked 17th and 9th, respectively, in 2005.

3. Bengbu is the second largest city after the capital city (Hefei), with a population of about 3.5 million, including the three satellite counties of Guzhen, Huaiyuan and Wuhe. It is located in the middle and lower reaches of the Huai River Basin in the northeastern part of the province. Bengbu was traditionally important to Anhui. Bengbu has a significant water resource environment: it is located on the banks of the Huai River, and surrounded by major rivers (Tianhe and Qian) and a number of smaller rivers and lakes, including an 8 km2 lake within the city (Longzi Lake). Bengbu is an important food grain producing and processing center, with Anhui Province producing one sixth of the nation’s food and one fourth of the national cash crops. Up to the early 1990s, Bengbu was the second largest economic center of Anhui, featuring a variety of industries such as textiles, machinery, chemical, and food processing. The last decade has seen a decline in industries as new economic centers grew rapidly along the booming southern corridor near Jiangsu and Zhejiang.

4. In comparison to the new economic centers, Bengbu had infrastructure bottlenecks, little or no wastewater treatment, frequent flooding of the urban core interrupting economic activities, unreliable water supply due to source problems, lack of satisfactory solid and industrial waste management, serious environmental conditions including polluted rivers, and inadequate space for urban expansion. Bengbu has not been very successful in attracting new industries probably due to a combination of the above factors, including regulations and approval procedures for new industry, incomplete infrastructure in the industrial parks, and the quality of life. BM plans to exploit the positive aspects of improved connectivity (e.g., new highways, high speed rail, water transport, and transport hub, etc.), and the relatively cheap land and low labor costs, in its promotional activities.

5. The Huai River is one of two major rivers that have remained heavily polluted despite continuing efforts during the past decade, and threatens the drinking water supply of a large population. Eighty percent of ground water along the Huai River is polluted to a depth of 50 meters. Although COD load levels have been decreasing since about 2004, they are 83 % above target levels. Pollution threatens drinking water supply of cities along the river. In Bengbu City, water quality in the Huai River met the drinking water quality standard only during the first five months of 2007. Pollution in the Huai River also poses a threat to China’s large south-north water transfer project.

B. Objectives

6. The project development objective is to improve the effectiveness of selected urban environmental services delivered by agencies of BM.

7. Key outcome indicators are: (i) reduction of the area of submergence, and losses from floods in Bengbu City; (ii) improvement or maintenance of Huai River water quality without deterioration, in the stretch in Municipality; (iii) reduction of pollution discharges from BM to the Huai River; (iv) relocation of specified polluting industries from the urban core of Bengbu City; (v) increase in the number of new industries setting up in BM; (vi) improvement in the
reliability of water supply for Bengbu City; and (vii) improvement of financial viability of wastewater companies.

C. Rationale for Bank Involvement

8. The proposed project responds to a request from Anhui Province has requested the Bank to assist BM to: address the causes of recurring flooding; deficiencies in storm water drainage and wastewater collection; and develop necessary reforms in regulations and service delivery to improve the investment climate in BM to support its efforts to revitalize its economy.

9. The Bank has already assisted both Anhui and Shandong Provinces to control flooding from the Huai River and reduce pollution discharges in the Huai River basin through investments in urban wastewater systems through the Huai River Pollution Control Project (P047345). The Huai River Water Resources Commission, located in Bengbu, is currently preparing a major flood management project for potential financing by the Bank (P098078).

10. The Bank has an ongoing dialogue, and relationship with Anhui Province, and is well positioned to assist BM based on its global and China experience. The Bengbu Integrated Environment Improvement Project (BIEIP) presents a unique opportunity to assist Bengbu to: (a) influence policies and programs connected with its revitalization; (b) continue the institutional and financial strengthening of utility companies commenced under the Huai River Pollution Control Project; (c) develop an integrated urban water resource management approach to address all issues associated with the water environment in Bengbu; (d) introduce load-based charges for industrial wastewater (as in Shanghai SCIP); and (d) help Bengbu to engage a private professional management of infrastructure services in a township and industrial park, including preparation of a regulatory framework.

D. Description

11. The proposed project covers activities which aim to: (a) address water environment issues through integrated investments in flood control, water resource management, catchment protection, storm drainage, wastewater collection, joint inter-district infrastructure development, and environmental management; (b) introduce professional management services and load-based charges for industrial wastewater management; (c) encourage PPP in infrastructure service provision; (c) enhance cooperation between administrative units (municipality, District and Counties) of Bengbu Municipality in information sharing, inter-municipal cooperation in infrastructure optimization, interfacing water quality databases, flood monitoring and control systems, and water resource management, (d) improve development-related information dissemination to the public; and (e) support regulatory reforms, and create a better investment climate in the Municipality.

12. BIEIP consists of four components and they cover Bengbu City and three satellite Counties of Huaiyuan, Wuhe and Guzhen as follows:
Component 1: Water Resources Management: (a) increased reliability and protection of the catchment of one of the Bengbu’s long-term drinking water source – Tianhe Lake; and (b) protection and ecological restoration of the Longzi Lake in Bengbu City.

Component 2: Urban Environmental Infrastructure Improvement: storm drainage networks and flood control including ancillary structures; sewer networks; and roads in Bengbu City and Huaiasheng District, including Huaiashang and Huaiyuan sharing wastewater treatment facilities.

Component 3: Sub-urban Environmental Infrastructure Improvement: storm drainage network and flood control including ancillary structures; water supply treatment and distribution network, wastewater treatment and collection networks, including load-based tariffs in the Mohekou Fine Chemical Park (MFCP); and roads in Guzhen, Huaiyuan and Wuhe.

Component 4: Institutional Development and Capacity Building:

Implementation Support (Package A): (a) project management support to the BPMO; (b) independent design review services; and (c) independent monitoring of safeguards implementation.

Capacity Building (Package B): institutional and financial strengthening of utility companies; (b) technical assistance support for preparing the regulatory framework, and procuring a private service provider for the Mohekou Township and MFCP; (c) preparation of a water resources management and catchment protection plan for Tianhe catchment; (d) flood monitoring and control system for project towns; (e) capacity improvement for water quality monitoring management for Bengbu EPB and the three EPBs, including data sharing with the public; (f) investment climate institutional reform; and (g) training.

E. Financing
Source: ($m.)
Borrower 128
International Bank for Reconstruction and Development 100
Total 228

F. Implementation

13. Project Management. A central Municipal Project Management Office (MPMO) under the Development and Reform Commission (DRC) of BM will function as the main agency for coordination of all implementation activities. It will also monitor implementation progress, including procurement activities, consolidate project costs and prepare consolidated semi-annual progress reports. The MPMO will function as the focal point of contact with the Bank.

14. The Project Management Offices (PMO) of Bengbu City, Huaiasheng District, and Counties of Huaiyuan, Wuhe and Guzhen will coordinate and monitor project implementation
including quality control in planning and construction, prepare progress reports, oversee performance of implementing agencies, consolidate project costs, and handle disbursement applications. They will provide periodic progress reports to the MPMO. The MPMO will utilize international consultant support to assist in project management.

G. Sustainability

15. For revenue-earning utilities, such as water supply, wastewater and solid wastes, it is good utility practice, and Bank policy, to encourage recovery of the full costs of service, i.e., operation, maintenance and the greater of debt service or depreciation, from those who receive services, i.e., water supply and wastewater services.

16. BM is committed to achieving long-term sustainability of its water supply and wastewater sectors in a phased manner. The strategy of BM is to provide high quality infrastructure to improve the level of services for the residents, improve quality of living, and install high quality infrastructure in Bengbu’s industrial estates so as to attract new industries, in its quest to revitalize its industrial base. Bank policy on financial viability requires the recovery of full costs of services from tariffs. The project design incorporates revenue from tariffs and subsidies, and that subsidies will be reduced gradually and eliminated by the end of the project period. The challenge for the project is to agree on a realistic balance of the two competing goals, and aim to achieve sustainability in the longer term.

H. Lessons Learned from Past Operations in the Country/Sector

17. Lessons learned from other urban environmental sector operations, including the ongoing Huai River Pollution Control Project have been considered, and incorporated in the project. They include:

(i) Huai River Water Quality. Despite a number of government efforts and World Bank support over the past 10 to 15 years, improving water quality of the Huai River has been a difficult challenge, even following the recent interventions in Shandong and Anhui Provinces through the Huai River Pollution Control. The lesson learned is that improving water quality in the river system is slow, and actions should aim to maintain the river water quality at about Class IV, without further deterioration. Maintaining Huai River water quality at Class III for about 65% of the year, and at Class IV in the remaining period would be a more realistic target.

(ii) Institutional Autonomy and Financial Viability. Wastewater companies in China have an impressive construction record, but have been weak in achieving institutional autonomy and financial viability. Past experience has proved that achievement of full cost recovery in the wastewater sector requires a phased approach. A step by step approach to achieving full financial viability is a more realistic goal, starting with the minimum requirement of cost recovery (from tariffs) to meet operation and maintenance costs, and a phased reduction of government subsidies to eliminate the subsidy over a five to ten year period depending the utility.

(iii) Over-sizing of Facilities. Ambitious and/or unrealistic projections of population growth, water demand and wastewater generation have resulted in over-sizing of facilities and
construction costs, which make financial sustainability difficult to achieve. Realistic projections of growth need to be adopted, with incremental expansion of facilities to meet demand.

(iv) Cost Estimating and Loan Savings. Bid prices received in many projects in China have been generally, 25% to 30% lower than cost estimates used at project appraisal, due in large part, to the use of standardized unit price schedules (referred to as ‘norm’ rates). Apart from not reflecting true market prices, the ‘norm’ rates also include various contingencies. The result is that Borrowers incur unnecessary commitment charges on accumulated loan savings. Closer review of cost estimating methods, and adoption of realistic and recent market rates are necessary.

I. Safeguard Policies (including public consultation)

<table>
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<th>Safeguard Policies Triggered by the Project</th>
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<th>No</th>
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<td>Environmental Assessment (OP/BP 4.01)</td>
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<td>Projects in Disputed Areas (OP/BP 7.60)*</td>
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<td>Projects on International Waterways (OP/BP 7.50)</td>
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J. List of Factual Technical Documents

1. Proposal of Bengbu Flood Control and Ecological and Environmental Rehabilitation Project, March 2006


3. Inception Report of Design Review Advisory Consultant (BURGEAP)

4. Social Assessment

5. Consolidated Feasibility Study reports by Design Institutes

6. The Project Proposal by BURGEAP (Final Report)

7. Resettlement Action Plan

8. Environmental Impact Assessment and Environmental Management Plan

9. Various issues of detailed project sub-component proposals

* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas
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