



Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 24-Apr-2017 | Report No: PIDISDSC18464



BASIC INFORMATION

A. Basic Project Data

Country China	Project ID P158622	Parent Project ID (if any)	Project Name Hezhou Urban Water Infrastructure and Environment Improvement Project (P158622)
Region EAST ASIA AND PACIFIC	Estimated Appraisal Date Dec 11, 2017	Estimated Board Date Mar 15, 2018	Practice Area (Lead) Water
Financing Instrument Investment Project Financing	Borrower(s) People's Republic of China	Implementing Agency Hezhou Project Management Office	

Proposed Development Objective(s)

The Project Development Objective (PDO) is to improve flood risk management, reduce water pollution and strengthen water resources planning in Hezhou Municipality.

Financing (in USD Million)

Financing Source	Amount
Borrower	150.00
International Bank for Reconstruction and Development	150.00
Total Project Cost	300.00

Environmental Assessment Category A-Full Assessment	Concept Review Decision Track I-The review did authorize the preparation to continue
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B. Introduction and Context

Country Context

1. China has been urbanizing at very fast rate over the past decades. However, for many medium and small sized cities, investments in the urban infrastructure, especially in the urban water-related assets have not kept pace. Lack of proper wastewater collection and treatment and inadequate urban flood protection infrastructure has caused serious water pollution and frequent urban flooding in many cities in China. A recent study carried out by the Ministry of Housing and Urban-Rural Development (MOHURD) of China revealed that, by 2010, around 30 percent of cities had experienced urban flooding (China has a total of 661 cities). By 2010, the direct economic losses associated with the floods were estimated to be around US\$ 40 billion (World Bank 2010¹). Lack of adequate urban water and environment infrastructure in medium and small cities affects people's health, welfare and living conditions, negatively impacts the urban environment, and is a barrier to urban development and prosperity. Improving urban water infrastructure and environmental management for medium and small sized cities is therefore an important national development goal.
2. The National 12th and 13th Five-Year Plans for Social and Economic Development (FYP, 2011-2015/2016-2020) prioritize the need to protect the environmental and ecological system as well as improve infrastructure to address urban floods. The plans also highlight the need to allocate more resources to support the less-developed western provinces to improve the infrastructure, strengthen environmental protection and prompt green growth in order to balance the regional economic development in China.
3. Guangxi Zhuang Autonomous Region (Guangxi) is the least developed of the western provinces, the per capita GDP ranks 27th among the 31 provinces in China. Guangxi has a total of 14 municipalities with a total population of 48 million. The first tier municipalities of Guangxi, including Nanning, Liuzhou and Guilin, have been engaging with the international financial institutions such as the World Bank and the Asian Development Bank (ADB) for more than a decade to improve their urban flood protection infrastructure and urban surface water quality. Each city has implemented successfully two World Bank financed urban environment projects. The central government and the Government of Guangxi intend to therefore, continue the engagement with the World Bank, in particular on infrastructure development in the second tier cities of the region.
4. Among the second tier cities in Guangxi are Laibin, Chongzuo and Hezhou Municipalities, all founded in 2002. Before upgrading to a municipality level, these municipalities were counties. The basic infrastructure of these municipalities is inadequate and improvements are necessary for infrastructure development and provision of public services such as flood control and wastewater management.

Sectoral and Institutional Context

5. Hezhou Municipality is located in the northeastern Guangxi, borders Hunan Province to the north and Guangdong Province to the east. Based on 2012 census, the city had a total population of 2.32 million, of which one million was urban population, with many ethnic groups including Zhuang, Yao and Miao.
6. Hezhou Municipality was established in 2002 and it comprises two districts (Babu District, upgraded administratively from Babu Town, and Pinggui District) and three counties (Zhaoping County, Zhongshan County and Fuchuan Yao Minority Autonomous County). The central urban area of the Hezhou Municipality is located in the Babu District with a population of 350,000.

¹ World Bank Report "China Country Water Resources Partnership Strategy (2013-2020)"



7. The Hezhou Municipality is one of the poorest cities in Guangxi, with a total GDP of US\$ 770 million and per capita GDP of US\$3,264², in 2015, corresponding to 14 and 47 percent of Nanning City, the province capital, respectively.
8. The city has abundant surface water resources and a complex water system that accounts for 9 percent of the city surface area of 11,854 square kilometer and it includes one river, four lakes and a few tributaries and irrigation canals. The He River is a major river crossing an upstream tributary of the Pearl River and the city has a total rainfall of about 1,500 to 2,000 mm per year.
9. Hezhou Municipality has experienced severe floods over the past decades due to inadequate urban flood protection facilities. A total of 32 floods have been recorded since 1950. This situation was exacerbated by the new development alongside the river banks. In recent years, the urban areas of Hezhou have frequently flooded – at least once a year and sometimes even twice. The biggest historically recorded floods occurred in 1994, 1996, 2002 and 2015. The number of houses that flooded in these events ranged from 8,500 to 26,850 and the population that had to excavate due to flood ranged from 4,376 to 68,120.
10. Hezhou Municipality also lacks a separate storm water drainage system and the existing combined sewerage-storm collection system is only partially completed. The tributaries of the He River and irrigation canals are used to transfer the wastewater to the He River, creating environmental concerns.
11. There are two dams upstream and downstream of Hezhou Municipality. In addition, in the 1960s three small scale hydropower stations (1,000kwh) were also constructed around Hezhou municipality which was a rural area at the time of construction. However, there is a need of an integrated approach to manage floods through upgrading of the dams to increase the flood discharge capacity and improve its operation. In addition, options to connect the existing lakes to manage urban flood risks should also be considered by the Municipality.
12. There are some critical challenges to improving flood risk resilience and water environment in Hezhou.
 - Firstly, the traditional concept of “urban flood protection” needs to be reviewed with introduction of a new concept of “urban flood risk management”. Currently, under the traditional concept, “urban flood protection” in most instances refers to the construction of large scale dikes and storm drainage systems such as large pumping stations, and very little attention is paid to assess the non-dike alternatives or options where the scale of the dikes could be largely reduced. Under the proposed project, a new concept will be proposed, in which the urban flood protection and drainage will be considered and planned holistically, including alternative options, such as flood diversion, rehabilitation or demolition of the flood discharge obstructing structures. Non-structural options, such as flood risk early warning and management system, will also be considered and recommended based on a thorough technical and economic analysis. Given the climate change effects, the project will also consider an increase in the magnitude and frequency of flood events. In addition, climate change screening will also be done during the project preparation.
 - Secondly, the water pollution of the city needs to be addressed. Currently, in the Babu District, the central urban area of the municipality, the government has built a well-functioning WWTPs with an installed capacity of 30,000m³/d and currently expansion works and new construction are underway to provide an additional capacity of 60,000m³/d in a couple of years, which is considered sufficient to serve the current 350,000

² China's per capita GDP in 2015 is US\$ 8,280.



residents. Additional capacities of WWTPs have also been proposed by the government to accommodate the increasing demands in the future. The operational costs of WWTPs are covered through the wastewater tariff, complemented by recurrent government subsidies (an arrangement that is widely applied and accepted in China). All current residents are connected to the sewerage network as the secondary and tertiary sewers are in place. However, the primary sewerage collectors are yet to be fully completed. As a result, in many areas, although the sewerage has been properly collected from households, it is eventually discharged into the river, lakes and canals, causing water pollution. Therefore, in order to reduce the water pollution and improve the water environment of the city, it is critical that the sewerage is properly collected alongside the water bodies and transported to the WWTPs.

- Thirdly, the overall water resources management system in Hezhou Municipality needs to be considered as a whole, so that the multiple water-related masterplans regulating the He River, tributaries, irrigation canals, dams and lakes are integrated. Currently the water affairs of the city are administrated by multiple institutions. The current institutional arrangement doesn't allow an integrated coordination for management and operation of the existing water infrastructure, including dams, dikes, rivers, canals and lakes in Hezhou, in a way that allows for tailored recommendations on management of water resources. For example, the urban flood and drainage (rivers and canals) are administrated by Water Resource Bureau, the water urban supply is administrated by Housing and Construction Committee, the wastewater collection and treatment are administrated by Municipal Engineering Administration Bureau and the water pollution prevention is the responsibility of Environment Protection Bureau. No institution has the clear role and authority to oversee the entire water affairs in the Municipality. This lack of a proper institutional set-up does not lead to an integrated operation of the dams and hydropower stations creating a flood risk for Hezhou Municipality.

13. This project will support Hezhou Municipality to have an integrated urban water management. In addition, it will promote a "green ring and corridor" by connecting main river, tributaries, lakes and parks, to improve the people's welfare. Furthermore, the creation of the "green ring and corridor" will support Hezhou Municipality in promoting tourism and attracting people living in the Pearl River Delta region to take advantage of Hezhou's abundant water and ecological resources.

Relationship to CPF

14. The World Bank Group's 2013-2016 Country Partnership Strategy (CPS) (Report No. 67566-CN) was discussed by the World Bank's Board of Executive Directors on November 6, 2012, and is aligned with the challenges and priorities outlined in China's 12th Five Year Plan. The CPS focuses on three main themes: (i) supporting greener growth; (ii) promoting more inclusive development; and (iii) advancing mutually beneficial relations with the world by supporting China's South-South cooperation and role as a global stakeholder.
15. The proposed project directly supports the first theme of the CPS by assisting Hezhou to enhance urban environmental services, including flood risk management and urban drainage, and wastewater collection and treatment. The project also supports the second theme of the CPS in enhancing secondary town development by helping local governments design integrated urban development plans that include adequate water supply and sanitation options. The improvement of flood risk management, urban drainage and wastewater collection and treatment, and management services under the proposed project will assist Hezhou Municipality in improving the environment and provide green spaces for the public, thus contributing to urban population's welfare. This regional benefit to the population through better water management is aligned with WBG's twin goals of eliminating extreme poverty and promoting shared prosperity.



C. Proposed Development Objective(s)

16. The Project Development Objective (PDO) is to improve flood risk management, reduce wastewater pollution and strengthen water resources planning in Hezhou Municipality.

Key Results (From PCN)

17. The key results/PDO-level indicators are as below.

- a) Direct project beneficiaries (number)
- b) Completion of a Technical Assistance (TA) to assist Hezhou to improve integrated water master plan
- c) Flood diversion capacity in the upstream of the city created under the project (cubic meter per second)
- d) Increased flood retention capacity of the canals and lakes in the urban city (cubic meter)
- e) Volume of Biological Oxygen Demand (BOD) pollution loads removed by the completion of sewer system under the project (ton/year)
- f) Construction and operation of a flood early warning and flood risk management system (description)

D. Concept Description

18. The activities proposed for this project will support the Hezhou Municipality in strengthening its capacity to reduce flooding, water pollution and improve coordination among different municipal agencies. An integrated approach will be adopted to improve flood risk management and urban drainage. The project also takes into consideration the integration of several water-related sectoral master plans and other government projects currently under implementation. The components of the project are presented below (the cost of each component is a preliminary estimate).

Components

19. **Component 1: Improving Flood Risk Resilience of He River (US\$160 million).** This component will support rehabilitation of the three hydropower stations mentioned above to improve the flood management capacity. The non-openable concrete overflow weirs of the hydropower stations will be upgraded to openable spill gates. This component will also support the diversion of the flood upstream of the Baidu District city through rehabilitation and connection of the eastern main canal to the Mawei canal. In addition, approximately 30km of the He River main channel will be rehabilitated to facilitate the flood discharge, improve the water environment and create water-front recreation spaces for local people. Under this component, a hydraulic model will also be developed to assess better design options taking into consideration the latest hydrometric data which will provide more realist scenarios considering effects of climate change.
20. **Component 2: Improving Urban Drainage and Wastewater Management (US\$130 million, of which US\$50 million for sewerage collection and treatment, US\$7 million for low impact design piloting³, US\$73million for Urban Drainage and Others).** This component will support the rehabilitation of selected tributaries and canals with a total length of 37km⁴ to increase the flood discharge capacity and collect domestic sewerage to transport it to the existing WWTPs. This component will also support construction of roads and primary and secondary sewer mains to collect and conduct wastewater to a proposed new 30,000m³/d WWTP (Jiangnan WWTP to be financed with local funds and constructed during project implementation). The component will also support diversion of the

³ Low Impact Design (LID) term is used to describe a land planning, and engineering design approach to manage storm water runoff as part of green infrastructure.

⁴ This figure will be properly estimated during project preparation based on a sound technical, economic analysis and risk assessment of land acquisition and resettlement



surface water to some low-runoff canals to improve water environment in the central urban area, especially in the dry season. The He River, canals and lakes in the urban area of Hezhou will be properly connected to increase and maximize the storage capacity of the water bodies, to regulate the urban drainage and reduce the flood risk. Selected tributaries will also be connected to the regional flood diversion system. Storm water sewers and two pump stations will be constructed in selected areas to improve the urban drainage. The piloting of low impact design (LID) for urban drainage will also be adopted in a selected new development area of the city. With implementation of this component, a “green ring and corridor” of the city will be created.

21. **Component 3: Institutional Strengthening, Capacity Building and Project Management (US\$10 million).** This component is composed of two subcomponents to support the following activities:

Subcomponent 3.1: Institutional Strengthening and Capacity Building (US\$8 million).

- **Integrated Water Management:** Technical Assistance will be provided to streamline the management of the water affairs of the Hezhou Municipality. Tailored recommendations will be made on how to: i) set up a mechanism for integrating the water sector master planning and coordinating multiple water-administrative government institutions to improve the consistency and efficiency of the water management in the city; and ii) further optimize the operation of the dams in the region towards an integrated water resources management. A flood risk early warning and management system will also be developed and training to protect vulnerable people (aged, children, and disabled) from floods will be provided.
- **Strengthening Hydraulic, Environmental and Ecological Monitoring Capacities:** This includes: a) strengthening capacity of Hezhou Environment Protection Bureau (HEPB) by constructing water quality monitoring stations and ecological monitoring station, providing equipment and data processing systems and training of HEPB staff; b) Strengthening the capacity of the Project Implementation Units (PIUs), i.e. Hezhou Municipal Water Resources Bureau (HWRB) by constructing hydraulic station and training of staff;
- **Training and Study Tours.** Trainings, workshop and study tours will be conducted to enhance the capacity of the officials of the institutions involved in the water management of Hezhou Municipality.

Subcomponent 3.2: Project Management and Supervision (US\$2 million).

- **Providing Institutional Support to the PMO:** by engaging a consulting firm to assist in finalizing the preliminary design, bidding documents, and final engineering designs; advising construction supervisors in contract management; preparing semi-annual project progress reports, mid-term review, and implementation completion report. The PMO will also engage with consultants as third-party to conduct the external Environmental Assessment and Resettlement Action Plan reporting.

SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

Project components will be located in Hezhou Municipality, a city in the northeast of Guangxi Zhuang Autonomous Region neighboring Hunan Province to the north and Guangdong Province to the east. The project area is subject to subtropical monsoon climate with an average annual rainfall of about 1,500-2,000mm (69.2% during the raining season



from April to August). Hezhou is featured by abundant surface water resources and a complex water system which accounts for 9% of the city surface area of 11,854 square kilometers. Among others, He River is the major river running through the city center from north to south. The river section within Hezhou Municipality has a total length of 239km with the catchment area of 7029km².

As a municipality upgraded from county level in 2002, Hezhou is still weak in basic infrastructure, in particular, on flood control, drainage and wastewater management. Without a complete flood control system, the city has suffered from frequent floods in the past decades with a total of 31 recorded since 1950. This situation was exacerbated by new development along the banks of He River. Hezhou also lacks a separate storm water drainage system, and the existing combined sewerage-storm collection system is only partially completed. The tributaries of the He River and irrigation canals are used to transfer wastewater to the He River which also serves as drinking water source for the downstream Fengkai County of Guangdong Province and it has thus created environmental concerns.

B. Borrower’s Institutional Capacity for Safeguard Policies

A Project Leading Group (PLG) has been established at the municipality level for the project and chaired by the Mayor to provide the strategic project oversight and guidance to the Project Management Office (PMO) and Project Implementation Units (PIUs) throughout project preparation and implementation. The PMO has been established under the Hezhou Development and Reform Commission (DRC), and the PIUs have been housed in the Hezhou Water Resource Bureau (HWRB), Hezhou Municipal Engineering Administration Bureau (HMEAB) and Hezhou Environmental Protection Bureau (HEPB). The PMO and PIUs have no experience with Bank-financed projects and will require capacity building and systems to ensure adequate and effective project management according to Bank safeguards policies and procedures. However, Hezhou Municipal Government has provided strong support to strengthen the PMO capacity. During project implementation, an experienced international project management consultant will be engaged to support day-to-day project management and construction supervision to the PMO and PIUs, including the implementation of applicable safeguards policies. The Bank will also provide necessary training on safeguards policies during project preparation and implementation.

C. Environmental and Social Safeguards Specialists on the Team

Zhefu Liu, Yiren Feng, Xiaodan Huang

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The project is designed to assist Hezhou Municipality to address its existing environmental challenges on flood control and water environment improvement. The proposed investments include river rehabilitation, improvement of drainage system (pumping stations and drainage channels/pipes), implementation of sewage collection system, and strengthening of water and ecological environment monitoring capacity. In general, significant positive impacts on local environment, in particular, on flood control and water environmental improvement, are expected from the



implementation of proposed project, which will be analyzed and quantified in the project environmental assessment.

Meanwhile, based on current environmental screening and scoping, potential negative impacts are also anticipated from the project implementation, as listed below:

(a) environmental and social impacts resulting from construction activities in the central urban areas of Hezhou Municipality, in particular, on nearby communities and the historical buildings within the project area;

(b) environmental and social impacts resulting from the dredging of He River and its tributaries as part of river rehabilitation works. The quality and quantity of the dredged materials will be determined during project preparation, and the transport, disposal and treatment of dredged materials will then be carefully designed to address anticipated impacts on the environment and nearby communities;

(c) land acquisition and physical displacement required by the proposed project (river rehabilitation and improvements of drainage and sewage system) could be significant;

(d) environmental and social impacts resulting from the rehabilitation of three small hydroelectric stations on the He River;

(e) cumulative impacts of the proposed project developments in associate with other existing, planned and/or reasonably anticipated development activities in the He River basin.

Therefore, the project is proposed as a Category A project as per OP4.0. The following EA instruments will include:

(a) An Environmental Impact Assessment (EIA) prepared for the whole project;

(b) A standalone Environmental and Social



Management Plan (ESMP), which will consist of mitigation measures, monitoring, training, institutional arrangements and cost estimate to eliminate, offset or minimize the adverse environmental and social impacts identified during the EA process. It will also include other environmental management instruments specifically developed for the project, such as the PCR management plan and the Environmental Code of Practices (ECOPs) for civil work contractors.

The project will be designed with an integrated flood risk and urban drainage management approach, and systematic alternative analysis will be conducted at both regional and individual project levels, including “without project” situation.

During the preparation of the proposed instruments, WBG’s EHS Guideline will be an important reference, and due diligence review will be conducted for existing facilities and projects related to the proposed project.

During EA preparation, timely and meaningful public consultation and information disclosure will be carried out in accordance with national requirements and Bank policies. Key stakeholders to be consulted will include local communities, potentially affected people, relevant governmental agencies and other stakeholders. In addition, a full social assessment will be conducted for the project and the key findings from the assessment will be integrated into the project EIA.

Considering limited experience of the involved PMO and PIUs on safeguard management, as part of the project, institutional arrangements and training will be provided to ensure adequate implementation of safeguards instruments.

The policy is triggered since the proposed Bank-financed investments will support river widening, river dredging and rehabilitation of existing small hydroelectric stations, which will change the hydrology and aquatic ecology of the He River and its tributaries. As per the requirements of OP4.04, the project will be developed in an environmentally sustainable way considering the protection of local species and biodiversity. The environmental analysis of

Natural Habitats OP/BP 4.04

Yes



		any natural habitat issue will be conducted as part of the environmental assessment, including identification of natural habitat sites, their ecological functions, potential project impacts on the sites and mitigation measures to avoid or minimize anticipated impacts when necessary.
Forests OP/BP 4.36	No	The project will not finance activities that involve significant conversion or degradation of critical forest or related critical habitat defined under the policy.
Pest Management OP 4.09	No	The proposed project will neither procure pesticides nor result in the increased use of pesticides. This policy will not be triggered.
Physical Cultural Resources OP/BP 4.11	Yes	In current project proposal, the subproject of He River integrated rehabilitation (from Guangming Bridge to Lingfeng Bridge) will have potential impacts on some nearby residential buildings on Xiyue Street with around 100 years' history; and some other subproject will possibly lead to the relocation of local graves. Detailed survey and impact analysis will be conducted during project preparation, and the PCR management plan will be prepared as part of the project EMP.
Indigenous Peoples OP/BP 4.10	TBD	The project components were proposed for the discussion at the second project identification stage, and the screening to the impacts to ethnic minorities were not conducted due to short visit and the project components to be finalized through project feasibility study. The task team would undertake the screening at the project preparation mission to conclude the application of OP 4.10 as well.
Involuntary Resettlement OP/BP 4.12	Yes	The flood diversion and rehabilitation of He River, tributaries and lakes will require large scales of collective land and some private housing demolition. It is important at the project preparation stage to minimize the impacts on land acquisition and housing demolition from both social safeguards and technical perspectives. However, the project will require collective land and housing demolition. Bank OP 4.12 is triggered and RAP was requested for the Bank review. Due diligence review will be undertaken at the project preparation mission or technical supporting mission prior to the project preparation mission to identify any local funded projects to the Bank supported project components. A RPF was requested to guide resettlement activities in case of resettlement incurred at any stage of the



		project implementation or due to project restructuring.
Safety of Dams OP/BP 4.37	Yes	The environmental screening shows that there are two dams upstream of the proposed Bank-financed investments and three small hydroelectric stations involved in the project for rehabilitation. This policy is therefore triggered considering their direct impacts on the safety of proposed interventions. The Borrower should arrange for one or more independent dam specialists to: 1) Inspect and evaluate the safety status of existing dams identified as relevant; 2) Review and evaluate the owner’s operation and maintenance procedures; and 3) Provide a written report of findings and recommendations for any remedial work or safety-related measures.
Projects on International Waterways OP/BP 7.50	No	Not applicable
Projects in Disputed Areas OP/BP 7.60	No	Not applicable

E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Oct 31, 2017

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

October 31, 2017

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APPROVAL

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