Safeguards Due Diligence Report: Environment

0ctober 2010

PRC: Guangxi Nanning Urban Environmental Upgrading Project

CURRENCY EQUIVALENTS
(as of 1 October 2010)
Currency unit – yuan (CNY)
CNY1.00 = $0.1494
$1.00 = CNY6.6900

ABBREVIATIONS
ADB – Asian Development Bank
EIA – Environmental Impact Assessment
EMP – Environmental Management Plan
FSR – feasibility study report
IA – Implementing agency
NEPB – Nanning Municipal Environment Protection Bureau
NMG – Nanning Municipal Government
NXCDC – Nanning Xiangsihu Investment Construction and Development Company
PMO – project management office
PRC – People’s Republic of China

WEIGHTS AND MEASURES

km – kilometer
m – meter
m² – square meter
mu – Chinese area measure for land
1mu = 0.0667 ha

NOTE
(i) In this report, "$" refers to US dollars.

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Nanning Urban Environment Upgrading Project
Connection Channel Safeguards Due Diligence Report: Environment
October 2010

(2nd version)
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1 Introduction

1 This 'Due Diligence Report for the Connection Channel between Kelijiang and Xinxujiang Rivers' is produced and submitted to ADB as a document necessary to request an approval for a minor scope change under the Loan-PRC Guangxi Nanning Environmental Upgrading Project (the project). On 7 September 2009, the project management office received an instruction from the Nanning Municipal Government Inland River Upgrading Works Steering Committee that the Nanning Municipal Government (NMG) will pursue the concept of a 'Water City', which all 18 tributaries of the Yongjiang River and most of the reservoirs in the city will be upgraded and managed in an integrated manner to pursue better water resource and water quality management. Under the policy, the NMG decided to build a water transfer channel of approximately 3.7 km, connecting Xinxujiang and Kelijiang subprojects for integrated water resource and flood management. Although proposed construction of connection channel is not financed by ADB nor under the scope of the project, the due diligence report is required by ADB because (i) it will trigger the minor scope change of pumping equipment under the project and (ii) the connection channel is considered as associated project facility to the project.

1.1 Introduction of the Connection Channel

2 The purpose of the connection channel is to link the Kelijiang and Xinxujiang rivers. This is part of the development of the Nanning Water City concept. The connection channel will also assist in the transfer of flows from Kelijiang to Xinxujiang in order to maintain water quality in both of these rivers during low flow conditions.

3 The alignment of the connection channel is from the left dike of Kelijiang River in the west to Xinxujiang River along Baguitianyuan, Xiangsihu East Road and Chuangxin Road. The length of the connection channel is 3.65km; and the width varies from 50m to 100m. See Figure 1.

Figure 1 Plan of connection channel
4 The project owner (implementing agency) is the Nanning Xiangsihu Investment Construction and Development Company (NXCDC). This is the same project owner as the Kelijiang subproject, currently being financed by the ADB.

5 The connection channel was commenced in May of 2010 and is to be completed in May of 2011. Site photos are shown in Figure 2.

**Figure 2 Site Photos**

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2 Environment

2.1 Project rationale

1 The aim of this project is to construct a 3.65km channel in the city of Nanning, which will connect the Keiljiang River and the Xinxujiang River. These rivers are tributaries of the Yongjiang River.

2 The project rationale is to improve the water quality in the urban water streams by increasing connectivity and thus water circulation in rivers and channels within the urban area.

3 The connection channel shall also contribute to the realization of the Nanning Water City concept, promote tourism, improve river navigation for sightseeing boats, and increase real estate values alongside the channel.

4 The project is consistent with the Nanning Urban Development Master Plan and the Nanning Urban Water System Rehabilitation Plan. The connection channel is part of the Nanning Water City concept.

2.2 Scope of work

5 Due diligence was conducted with the aim to (i) assess the project’s compliance with PRC environmental regulations; (ii) assess the project’s environmental due diligence procedure; (iii) assess the project’s anticipated environmental impacts, the suggested
mitigation measures and monitoring procedures; (iv) provide evidence that the project will not negatively affect the expected outcomes of the Nanning Urban Environmental Upgrading Project (ADB Loan 2239 PRC).

This due diligence included the following steps: (i) site visits to the project site, including discussion with the PMO and the IA in charge of implementing the connection channel; (ii) review of the environmental documentation prepared in the framework of this project component, including environmental impact assessment report (EIA), environmental management plan (EMP) and environmental monitoring program; (iii) review of other relevant reports including project feasibility reports (FSR), relevant Nanning Municipal Government documents of “Nanning Water City Construction Programme”, and city master plan; (iv) analysis of the public consultation and information disclosure process; and (v) analysis of the expected impact of the project component on the Nanning Urban Environmental Upgrading Project (ADB Loan 2239 PRC), with a focus on the water circulation in the cities water streams. The NMG will ensure to make the original FSR and EIA available to the ADB for reference whenever requested.

This due diligence report was compiled by the project management office (PMO) of Nanning Urban Environmental Upgrading Project with the support of the project management consultant, Mott MacDonald Limited.

2.3 Environmental impact assessment (EIA) process

A local environmental impact assessment (EIA) was prepared by Guangxi Transportation Survey and Design Institute, a nationally certified EIA institute. The EIA was prepared in accordance with People’s Republic of China (PRC) Environmental Impact Assessment Technical Guidelines. The EIA report was approved on 19 April 2010 by Nanning Municipal Environment Protection Bureau (NEPB) (Document Nr. Nanhuanjianzhi 2010-81). The EIA approval document is in Appendix A (Attached).

NEPB formulated a number of conditions and requests linked to the EIA approval, including (i) construction wastewater should not be discharged to the Kelijiang and Xinxujiang Rivers; (ii) appropriate construction site management is required; (iii) good practice for earth excavation; (iv) proper timing of construction works; (v) good management of construction waste; (vi) soil erosion prevention; and (vii) construction of a separate sewer and drainage system. These requests/recommendations were included in the EIA and EPB approval document.

The EIA is comprehensive, covers all major potential environmental impacts (see chapter 3.5), defines mitigation measures and monitoring arrangements (see chapter 3.6).

The EIA confirmed that the project will not affect natural habitats, critical habitats, or legally protected areas. There is no record of important heritage and archaeological sites on the land that will be temporarily or permanently used. There is no record of national
threatened or endangered species within the project area. The EIA has not identified any aquatic sensitivity in the downstream areas.

2.4 Public involvement and information disclosure

Direct public participation was conducted on an on-going basis in the development of the project. These activities were carried out by the EIA preparation agency following PRC regulations and the Environmental Impact Assessment Technical Guidelines. The consultation process during project preparation included 2 parts: (i) a survey comprising individual interviews and interview workshops along the project site with proposed project information and structured questionnaire; (ii) collection of public feedback information through a website. The survey included 80 potentially affected people in the project area, and public consultation workshops in March 2010. The survey collected information on project priorities, project impacts, attitudes towards the project and suggestions. In the workshops, the EIA preparation agency explained the anticipated environmental impacts and mitigation measures associated with each project component as defined in the EIA report. The EIA report was put in a website for public consultation (http://www.gxjtkyy.com) from April 2010.

The surveyed people and the workshop participants voiced concern about environmental impacts during project implementation, and expressed their hope for the mitigation measures to be effectively implemented. Comments and responses from the public were used in finalizing the EIA documents. The main concern related to the timing of the physical construction to minimize the negative environmental impact towards nearby people. A number of non environmental concerns were also raised including: support for necessary resettlement and compensation; and the effectiveness of the project in providing employment opportunities.

Future public consultation will include involvement in monitoring impacts and mitigation measures during construction and operation, evaluating environmental and economic benefits and social impacts, and interviewing the public after the project is completed. The NEPB maintains a hotline for environmental complaints (环境保护投诉热线 12369)

2.5 Anticipated environmental impacts

The EIA identified a range of potential impacts caused by the connection channel. The major negative environmental impacts are expected during construction of the channel. These impacts include: (i) displacement of 35 people and permanent acquisition of 103,889mu of land; (ii) muddy runoff and wastewater from construction sites; (iii) noise, dust and exhaust fumes from construction activities; (iv) solid waste - construction waste together with domestic solid waste from workers; (v) traffic congestion; (vi) spoil disposal and soil erosion; (vii) increased turbidity in Kelijiang and Xinxujiang Rivers downstream of the connection channel; (viii) air pollution as a result of asphalt used in the road construction.
During operation phase, the EIA identified the following potential impacts: (i) reduced water quality and odor nuisances as a result of illicit discharge of domestic wastewater and disposal of solid waste into the connection channel; (ii) reduced hydraulic performance as a result of sedimentation; (iii) increased noise as a result of increased motorized river navigation; (iv) reduced level of maintenance for the greening and landscaping along the riversides.

2.6 Environmental Management Plan, Monitoring Program

A list of environment mitigation measures have been developed for the design, construction, and operation phases of the project. The EMP details the plans, institutional arrangements, and procedures needed to undertake the mitigation measures and monitoring requirements during each phase of the project.

The mitigation measures defined in the EMP were incorporated into construction contracts and are being or will be implemented by the contractors or implementing agencies (IAs) under supervision of the NPMO.

In the design phase, the following measures were implemented: (i) hydraulic modeling of the connection channel and the Kelijiang and Xinxujiang channels providing evidence that efficient water circulation will be achieved; (ii) connection channel design minimizing land acquisition and resettlement; (iii) identification of spoil disposal sites.

Three separate hydraulic models were developed by the Design Institute (Guangxi Zhuwei Nanning Survey and Design Institute). These are (i) Water quality model, (ii) Hydrological model for the calculation of storm runoff volumes, and (iii) a model for the flood levels within the Kelijiang and Xinxujiang channels. The modeling results for the latter have been included in the connection channel technical report. The modeling results have been compared with the baseline figures included in the project preparation final reports and it appears that the modeling has been carried out on a consistent basis with the same stormwater inflows to the lakes being assumed compared with the original design. In terms of data, the water quality model uses data collected regarding the pollution sources around the Kelijiang and Xinxujiang channels, together with existing water quality information from the two lakes. The storm flows are modeled using data based on predicted rainfall events. The outputs are shown in the technical report and include a plot of water levels over time during the modeled storm event.

In the construction phase, the main mitigation measures include (i) wastewater and construction run-off management; (ii) appropriate construction site management to minimize air, water, solid waste and noise impacts; (iii) construction waste management; (iv) work camp health and hygiene; (iv) traffic management; (v) implementation of resettlement plans; (vi) re-vegetation of disturbed areas; (vii) appropriate spoil disposal following the approved plan.
22 The environmental monitoring program for the original Kelijiang and Xinxujiang sub-projects is being carried out through internal and external monitoring according to the requirements of the NEPB. Internal monitoring is carried out by Nanning Xiangsihu Investment Construction and Development Company (NXCDC - One of the IAs of the ADB sub-projects). The external monitoring is being undertaken by a qualified environmental monitoring station. The results will be used to evaluate the extent and severity of actual environmental impacts against the predicted impacts; performance of the environmental protection measures or compliance with related rules and regulations; and overall effectiveness of the project environment management.

23 The main monitoring parameters in the construction phase include: (i) air quality monitoring (TSP and NO2) - once per month; (ii) Ambient noise (Leq) once per month; (iii) Water quality for relevant the water body (CODMn, SS, Petro-oil, BOD5, NH3-N and pH).

24 For the operational phase, the environmental monitoring of the connection channel will be included in the Kelijiang and Xinxujiang routine operational phase monitoring activities of the EPB, as the monitoring data from Kelijiang and Xinxujiang will be closely related to the conditions in the connection channel. The Nanning EPB routine data will include both water quality monitoring data and ambient air quality monitoring data for both Kelijiang and Xinxujiang lakes together with the connection channel.

25 It was agreed that the monitoring report will be shared with the Nanning PMO of the ADB project, and a summary will be reported to ADB through the semi-annual environmental report until completion of the ADB project.

2.7 Conclusion

26 This environmental due diligence of the proposed connection channel confirmed that (i) domestic EIA for the connection channel was developed in accordance to PRC regulations and approved by the NEPB, (ii) environmental mitigation measures identified under the EIA are being implemented by contractors and the IA, and are supervised by the NEPB, and (iii) the environmental management plan is being monitored and reported by the IA to the NEPB on regular basis.

27 The due diligence further confirmed that the connection channel will not negatively affect the expected outcomes of the Nanning Urban Environmental Upgrading Project (ADB Loan 2239 PRC). The hydraulic model indicates that the connection channel will improve the water flow and hydraulic exchange ability for the Kelijiang and Xinxujiang rivers as well as the water quality both of the Kelijiang and Xinxujiang tributaries of Yongjiang River through water transfer, and facilitate the realization of the project objectives of Nanning Urban Environmental Upgrading Project under ADB loan.

28 It was also confirmed by the NEPB that the monitoring report will be shared to the PMO and a summary will be reported to ADB upon completion of connection channel
construction, which will be earlier than that of Kelijiang and Xinxujiang subprojects under the Project.
Appendix A  The EIA Approval Document by Nanning Municipal EPB