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Water for Asian Cities Programme

Water Demand Management Strategy and Implementation Plan for INDORE

The Energy and Resources Institute

Water Resource Planning and Conservation

Government of Madhya Pradesh

ADB

UN-HABITAT

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Water Demand Management Strategy and Implementation Plan for INDORE

Part – I

Technical Aspects

Part – II

Financial, Institutional and Policy Reforms

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Message

Jayant Kumar Malaiya
Minister
Urban Administration & Development
Housing & Environment
Government of Madhya Pradash

UN-HABITAT under the Water for Asian Cities Programme in India is working in Bhopal, Gwalior, Indore and Jabalpur in support of the ADB financed Urban Water Supply and Environmental Improvement Project of Government of Madhya Paradesh for the improvement and expansion of urban water supply, sewerage and sanitation, water drainage and solid waste management in these cities. All four cities, have substantial population presently living in slums having difficulties in accessing both water and sanitation facilities.

UN-HABITAT has undertaken the Water Balance study in the four cities which revealed that the Non-Revenue Water (NRW) is between 33 and 60% in Bhopal, Gwalior, Jabalpur and Indore. The reduction of NRW can lead to availability of surplus water for the population in the slums, which are presently not having sufficient access to piped water supply.

I am pleased to learn that UN-HABITAT has developed a strategy and action plan on Water Demand Management (WDM) jointly with Urban Water Supply and Environmental Improvement (UWSEI) Project, Madhya Pradesh which proposes technical, financial and institutional measures to reduce NRW.

I hope that the implementation of the strategy and action plan will help the local bodies in improving the water supply condition of the four project cities and attainment of the Millennium Development Goals.

J.K. Malaiya

Jayant Kumar Malaiya

Preface

The most important source of water for the city of Indore is the Narmada Water Supply Project which involves pumping water some 70 kms from Narmada River. The estimated water availability for the city is of the order of 199.5 MLD at maximum and 171 MLD at minimum to serve over 1.5 million population. A significant fraction of the water is also supplemented by ground water through tube wells. The actual situation is much less with estimated per capita availability of around 84 lpcd at maximum and 72 lpcd at minimum. The water supply in the city is unsatisfactory on account of high losses and inefficiencies in the system.

The growth of urban population, estimated at 4% to 5% per annum, and the rapid urbanisation has significant influence on water demand and exerting pressures on the available water sources, leading to over exploitation of groundwater resources. Around 68 per cent of city's population receives water between one or two hours every alternative day, while the other areas augment supplies by water tankers. Many residents use their own tube wells. Non-revenue water is estimated at around 30 per cent. Absence of data on leakages and the reliability of the available basic data on operational aspects of water supply has been the major concern in arriving at water balance audit. The water supply problem in the city of Indore is attributed more to the lack of infrastructure and current management practices rather than lack of water availability.

UN-HABITAT in partnership with Water Resource Planning and Conservation (WRP), South Africa, commissioned the Project to develop a Water Demand Management Strategy and Implementation Plan for the city of Indore to provide useful directions to several other initiatives already being facilitated as well as strengthen the capacities of The Energy Resources Institute (TERI), India, for associating in such projects. WRP has prepared the technical aspects of the Water Demand Management and Implementation Plan, while the financial, institutional and policy reforms have been developed by TERI.

The Publication presents a comprehensive reforms package by developing Water Demand Management strategy and implementation plan for the city of Indore involving institutional, financial and technical issues in water supply and is aimed at the efficiency improvements in the management and utilization of water. The focus is mainly on the water balancing systems, developing information-base on GIS platform, capacity building and approaches for reducing unaccounted-for water, for an efficient and effective distribution of available water supply. The strategy and the implementation framework illustrated in the publication would not only enhance awareness but also provide the basis for formulating effective Water Demand Management policies.

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UN-HABITAT

Water Demand Management Strategy and Implementation Plan for INDORE

Part – I

Technical Aspects

Contents

Abbreviations

ADB	Asian Development Bank
AZP	Average Zone Point
CAD	Computer Aided Design
DMA	District Metered Area
GIS	Global Information System
ILI	Infrastructure Leakage Index
IUDMP	Integrated Urban Development in Madhya Pradesh
IMC	Indore Municipal Corporation
IWA	International Water Association
kl	Kilo Litre/ Cubic meter
km	Kilo Meter
MIS	Management Information System
MNF	Minimum Night Flow
Ml/d	Mega Litre per day (1 Mega Litre = 1000 Kilo Litre)
m^3	cubic meter/ Kilo Litre
NRW	Non Revenue Water
PRV	Pressure Reducing Valve
Rs.	Rupees
UAW	Unaccounted-for Water
WC	Water Conservation
WDM	Water Demand Management