



Report and Recommendation of the President to the Board of Directors

Project Number: 42486-016
April 2017

Proposed Loan and Technical Assistance Grant India: Madhya Pradesh Urban Services Improvement Project

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 31 March 2017)

Currency Unit	–	Indian rupee (₹)
₹1.00	–	\$0.015
\$1.00	=	₹65.00

ABBREVIATIONS

ADB	–	Asian Development Bank
AMRUT	–	Atal Mission for Rejuvenation and Urban Transformation
DBO	–	design–build–operate
MPUDC	–	Madhya Pradesh Urban Development Company Limited
O&M	–	operation and maintenance
PAM	–	project administration manual
PMC	–	project management consultant
PMU	–	project management unit
TA	–	technical assistance
UDHD	–	Urban Development and Housing Department
ULB	–	urban local body

NOTES

- (i) The fiscal year (FY) of the Government of India and its agencies ends on 31 March. “FY” before a calendar year denotes the year in which the fiscal year ends, e.g., FY2016 ends on 31 March 2016.
- (ii) In this report, “\$” refers to US dollars.

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PROJECT AT A GLANCE

1. Basic Data		Project Number: 42486-016	
Project Name	Madhya Pradesh Urban Services Improvement Project	Department /Division	SARD/SAUW
Country	India	Executing Agency	Urban Development and Housing Department
Borrower	India		
2. Sector		ADB Financing (\$ million)	
✓ Water and other urban infrastructure and services	Urban policy, institutional and capacity development		4.00
	Urban sanitation		10.00
	Urban water supply		261.00
		Total	275.00
3. Strategic Agenda		Climate Change Information	
Subcomponents			
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Adaptation (\$ million)	75.00
Environmentally sustainable growth (ESG)	Urban environmental improvement	Climate Change impact on the Project	Medium
4. Drivers of Change		Gender Equity and Mainstreaming	
Components			
Partnerships (PAR)	Bilateral institutions (not client government) Civil society organizations Implementation	Effective gender mainstreaming (EGM)	✓
Private sector development (PSD)	Public sector goods and services essential for private sector development		
5. Poverty and SDG Targeting		Location Impact	
Geographic Targeting	No	Urban	High
Household Targeting	No		
SDG Targeting	Yes		
SDG Goals	SDG6		
6. Risk Categorization:		Complex	
7. Safeguard Categorization		Environment: B Involuntary Resettlement: B Indigenous Peoples: B	
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		275.00	
Sovereign Project (Regular Loan): Ordinary capital resources		275.00	
Cofinancing		0.00	
None		0.00	
Counterpart		124.00	
Government		124.00	
Total		399.00	
Note: An attached technical assistance will be financed on a grant basis by Technical Assistance Special Fund (TASF-others) of the Asian Development Bank (ADB) in the amount of \$1 million.			
9. Effective Development Cooperation			
Use of country procurement systems		Yes	
Use of country public financial management systems		Yes	

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to India for the Madhya Pradesh Urban Services Improvement Project.¹ The report also describes proposed technical assistance (TA) for Capacity Development of Institutions in the Urban Sector of Madhya Pradesh for urban service improvement, and if the Board approves the proposed loan, I, acting under the authority delegated to me by the Board, approve the TA.

2. The project adopts a sector approach in developing (i) sustainable, inclusive, and climate-resilient water supply in 64 small and medium-sized towns; and (ii) integrated storm water and sewerage infrastructure in two tourist towns of national heritage in Madhya Pradesh state.² The project will complement efforts of the state government of Madhya Pradesh to improve urban services by (i) increasing access to piped water supply, especially among poor households; (ii) reducing reliance on groundwater and ensuring more efficient use of surface water; (iii) providing for long-term operation and maintenance (O&M); and (iv) building capacity.

II. THE PROJECT

A. Rationale

3. **Urban development and basic services.** Madhya Pradesh in central India is the second-largest state by area (308,000 square kilometers), fifth most populous (72 million), and eighth most urbanized state in India. It is urbanizing at a faster pace (2.57% per year) than the national average (2.45%), with the proportion of its urban population expected to increase from 28% in 2016 to 35% by 2026. Despite its improving economy, Madhya Pradesh still has a 31.0% poverty rate, and an urban poverty rate (21.0%) that is higher than India's average of 13.7%.³ Increasing urbanization is putting more stress on urban infrastructure and urban basic services. Many urban local bodies (ULBs) or local municipal boards do not have piped water supply, and only a fraction have wastewater and sanitation systems. A service-level benchmarking assessment conducted for 110 sample ULBs by the Urban Development and Housing Department (UDHD) of Madhya Pradesh indicated an extremely uneven distribution of urban services, with small ULBs (*nagar parishads* or municipal boards) ranked at the bottom.

4. A 2011 survey of 378 ULBs in Madhya Pradesh noted that less than 55% of households have access to piped water supply.⁴ About 60% of households with piped water connections have intermittent water supply (from 30 minutes to 2 hours per day), and the rest have water once every 2 days; some urban areas get drinking water even less frequently. Less than 2% of piped water supply connections are metered, and less than 45% of total consumers pay for water supply. Nonrevenue water is high, and none of the cities or towns have continuous pressurized water supply services, leading to inefficiencies and potential health risks.⁵ A 2013 study showed the importance of increasing access to potable water supply for poverty reduction: poor drinking water quality has increased the disease burden, resulting in economic

¹ The design and monitoring framework is in Appendix 1.

² ADB. 2014. *Madhya Pradesh Urban Services Improvement Program: Project Preparatory Technical Assistance Report*. Manila.

³ Country Economic Indicators (accessible from the list of linked documents in Appendix 2); and Government of India, Planning Commission. 2013. *Press Note on Poverty Estimates, 2011–2012*. New Delhi.

⁴ Government of India. 2014. *Drinking Water, Sanitation, Hygiene and Housing Condition in India: NSS 69th Round, July 2012–December 2012*. New Delhi.

⁵ Sector Assessment: Water and Other Urban Infrastructure and Services (accessible from the list of linked documents in Appendix 2).

repercussions that disproportionately impacts women, the poor, and vulnerable sections of society.⁶ About 90% of the state's drinking water is from groundwater, increasing vulnerability of drinking water supply to declining groundwater levels.

5. **Urban sector reforms.** The state government has given high priority to urban infrastructure development. Previous Asian Development Bank (ADB) urban investments in Madhya Pradesh have improved access to safe drinking water for more than 5 million residents in four major cities, and the World Bank is considering a loan to support water and wastewater service improvement for about 2 million residents in 18 secondary cities.⁷ Learning from past central and state government-sponsored programs, Madhya Pradesh has committed to provide sustainable, inclusive, and quality urban services. Mission 8 of Madhya Pradesh's Vision 2018 aims to provide universal water supply coverage and implement reforms to improve the efficiency of service delivery in the drinking water supply sector.⁸ To improve long-term sustainability and cost recovery for urban services O&M, the state government has set up the Madhya Pradesh Urban Development Company Limited (MPUDC) to manage the urban projects. The MPUDC will create urban infrastructure assets and ensure the sustainable O&M of the created assets.

6. **Need for a sector improvement project.** The state government has initiated programs to improve urban services in 250 of the 378 ULBs using funds from its own resources,⁹ the Government of India (Swachh Bharat, Atal Mission for Rejuvenation and Urban Transformation [AMRUT], and Smart City initiative),¹⁰ and external agencies. The state government sought ADB's support to improve water supply in the remaining 128 ULBs, which had a population of 2.7 million as of 2011 and have limited financial resources and technical capability. The project takes a sector approach to fund 64 of these 128 towns because of the large number of subprojects and to ensure an integrated focus on sector policies and the adequacy of institutions to formulate and manage such plans. The government has a sector development plan to meet the priority development needs of the urban water sector and is undertaking reforms to build state and ULB capacity.¹¹

7. The state government identified 64 towns—with a reliable water resource, sound engineering feasibility, available land, and a commitment to O&M—for the project to support.¹² The state government plans to approach ADB for additional funding for the remaining 64 of the 128 towns based on lessons learned from the project implementation. The sector investments will lead to increase in wastewater, which also needs to be addressed. The state government is committed to improving wastewater management in a phased manner.¹³ The project will also

⁶ Oxford Policy Management Asia and CRISIL. 2013. *Research into Lessons Learnt from DFID India Urban Investments over 20 Years: Final Report*. New Delhi and Mumbai.

⁷ Development Coordination (accessible from the list of linked documents in Appendix 2).

⁸ State Government of Madhya Pradesh. 2013. *Madhya Pradesh Vision 2018: An Agenda for Development, Change and Good Governance*. Bhopal.

⁹ The state government of Madhya Pradesh uses its own resources to fund *Mukhyamantri Shehri Peyjal Yojana* (Chief Minister's Drinking Water Scheme), which covers water supply improvement in 150 cities and towns.

¹⁰ The Swachh Bharat (Clean India) Mission for Urban Areas aims to eliminate open defecation, eradicate manual scavenging, and achieve modern and scientific municipal solid-waste management. The Atal Mission for Rejuvenation and Urban Transformation (AMRUT) is a project-based initiative to transform 500 tier 2 and tier 3 cities and towns. The Smart City initiative will help 109 cities use smart solutions in developing infrastructure and improving services.

¹¹ State Government of Madhya Pradesh. 2015. *AMRUT: Madhya Pradesh State Annual Action Plan for FY 2015–16 and Perspective Plan 2015–20*. Bhopal.

¹² Subproject Selection Criteria (accessible from the list of linked documents in Appendix 2).

¹³ The state government is improving wastewater management in larger towns and towns along main rivers using funds from AMRUT, the World Bank, and KfW.

support sewage and storm water management in Khajuraho and Rajnagar, two tourist towns of national significance.

8. **The project's value addition.** Through the development and efficient use of surface water sources, the project will preserve groundwater and enhance climate resilience, and provide near-universal access to piped water supply in small and medium-sized towns, which have a higher prevalence of poverty. It will benefit many households below the poverty line, and empower women by eliminating drudgery associated with fetching water from distant sources. By increasing access to good-quality water with enough pressure, the project will help reduce infant mortality and morbidity and the associated burdensome health expenditures. The project will introduce and implement design–build–operate (DBO) contracts, where the contractor will have to develop not only high-quality infrastructure but also efficient operations of the assets through a long-term performance-based contract for ten years. This will give adequate time for ULBs to build their capacity to operate assets after the end of the O&M contract period.

9. The project will provide continuous water supply with emphasis on 100% metered water connections, efficient water supply zoning and nonrevenue water reduction, quality water supply, and high customer satisfaction. It will contribute to financial sustainability of operations by introducing metering and volumetric tariff, improving efficiency via nonrevenue water reduction, improving customer focus and service delivery, and building awareness and engaging with stakeholders. This is in line with the sustainability lessons learned from ADB's previous water projects.¹⁴ The project will strengthen the management capacity of ULBs and the MPUDC, and improve cost recovery. It will develop and implement (i) a regulatory framework to facilitate private sector participation in the water sector over the medium term, and (ii) sanitation safety plans to manage the septic tanks and expand decentralized sewage treatment in the project towns.

10. The project is included in ADB's country operations business plan for India (2017-2019); will contribute to goal 6 of the Sustainable Development Goals; and is in line with ADB's country partnership strategy, 2013–2017 for India.¹⁵ The project is consistent with the state's Twelfth Five-Year Plan, 2012–2017¹⁶ and ADB's Water Operational Plan.¹⁷

B. Impacts and Outcome

11. The impacts of the project will be (i) improved economic growth and urban living conditions, and (ii) reduced infant mortality in Madhya Pradesh. The outcome will be improved quality, coverage, efficiency, and sustainability of urban service delivery in Madhya Pradesh.¹⁸

C. Outputs

12. **Output 1: Water supply infrastructure and integrated storm water and sewage infrastructure improved.** This will include (i) constructing water supply facilities, using the DBO model, in 64 project towns (the facilities will comprise raw water intakes, water treatment plants,

¹⁴ Independent Evaluation Department. 2015. *Topical Paper: Sustainability of Urban Water Supply and Sanitation Operations—Findings and Lessons*. Manila: ADB.

¹⁵ ADB. 2016. *Country Operations Business Plan: India, 2017–2019*. Manila; Sustainable Development Knowledge Platform. Sustainable Development Goal 6. <https://sustainabledevelopment.un.org/sdg6>; and ADB. 2013. *Country Partnership Strategy: India, 2013–2017*. Manila.

¹⁶ State Government of Madhya Pradesh. 2012. *Twelfth Five-Year Plan, 2012–2017*. Bhopal.

¹⁷ ADB. 2011. *Water Operational Plan, 2011–2020*. Manila.

¹⁸ Contribution to the ADB Results Framework (accessible from the list of linked documents in Appendix 2).

overhead tanks, and distribution networks, including metered household connections), (ii) constructing sewage and storm water management systems in Khajuraho and Rajnagar, and (iii) strengthening project implementation capacity. Based on their location and size, subprojects in the project towns were grouped into 23 procurement packages to achieve economies of scale for contract purposes. Surface water is the source in 60 towns. In the four towns that depend on groundwater, the project will support groundwater recharge and its sustainable use. Activities under this output will focus on ensuring vulnerable households, below the poverty line households, and households headed by women have continuous water supply.

13. Output 2: Systems to ensure sustainable urban infrastructure operations and management established. The project will support the state government and the ULBs, during project implementation period, in establishing and maintaining 10 years performance-based O&M water supply contracts. The project will engage operators on performance-based, long-term O&M contracts, monitor them, and support an independent review of their services. Construction of the water supply facilities is estimated to take 2 years. After this is completed, the contractors of the civil works packages will provide continuous water supply to the project towns for 10 years. Of the 10-year O&M contract period, ADB will finance the first few years prior to subproject completion, and the state government will finance the remaining O&M cost for the subsequent years. The MPUDC will pay O&M costs to the contractors on a monthly basis, in fixed and performance-linked variable fees, following the contract agreement. The contractors will ensure that (i) there is proper metering and volumetric billing, (ii) adequate water pressure is maintained at the consumer end (7 meters), and (iii) supplied water complies with national quality standards for drinking water. The operators will establish about 20 customer service centers to serve the needs of all the project towns. The ULBs' obligations include setting and adjusting tariffs in a timely manner, collecting revenue, and managing defaulters to ensure cost recovery and handling financial management for timely payments to the contractors by the MPUDC. During the O&M period, ULB staff will be trained in operating the assets. After the contract is completed, the contractors will turn over the water supply assets to the ULBs.

14. Output 3: Capacity of Madhya Pradesh Urban Development Company and urban local bodies improved. This will include (i) setting up a geographic information system-based asset management and service delivery monitoring system; (ii) developing information technology systems in 15 ULBs to assist in day-to-day management; (iii) improving septage management in the project towns by implementing sanitation safety plans; (iv) building the capacity of the MPUDC and project town ULBs to manage the DBO contracts and the assets after contract completion; and (v) raising community awareness on water conservation, environmental protection, and hygiene practices in the project towns.

D. Investment and Financing Plans

15. The project is estimated to cost \$399 million (Table 1). Detailed cost estimates are in the project administration manual (PAM).¹⁹

16. The Government of India has requested a regular loan of \$275 million from ADB's ordinary capital resources to help finance the project. The loan will have a 25-year term, including a grace period of 5 years; an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; a commitment charge of 0.15% per year; and such other terms and conditions set forth in the loan and project

¹⁹ Project Administration Manual (accessible from the list of linked documents in Appendix 2).

agreements.²⁰ Based on the straightline method, the average maturity is 15.25 years, and the maturity premium payable to ADB is 0.1%. The loan will finance 68.9% of the project cost, including part of the civil works, equipment, O&M for 3 years, and consulting costs. The ADB loan will be onlent to the state government under the same terms as the ADB loan. The state government will contribute \$124 million, or 31.1%, of the total project cost to finance taxes and duties; resettlement costs; finance charges during implementation; and part of the civil works, equipment, and O&M for the last 7 years of the 10-year O&M contract. It will provide the loan proceeds and counterpart funds to the MPUDC as a grant. The state government will transfer the assets created under the project to the ULBs as a combination of grant (82.5%) and loan (17.5%) after construction, and will assume the foreign exchange risk. The financing plan is shown in Table 2.

Table 1: Project Investment Plan
(\$ million)

Item	Amount ^a
A. Base Cost^b	
1. Improved water supply infrastructure in all project towns and integrated storm water and sewage infrastructure in two towns	239.7
2. Sustainable urban infrastructure operation and management	101.8
3. Improved effectiveness and capacity in all project towns	4.0
Subtotal (A)	345.5
B. Contingencies^c	36.4
C. Financing Charges During Implementation^d	17.1
Total (A+B+C)	399.0

^a In mid-2016 prices; exchange rate of \$1.00 = ₹67.00 is used.

^b Includes taxes and duties of \$44.8 million to be financed from government resources by cash contribution.

^c Physical contingencies are computed at 5.0% for civil works, equipment, and operation and maintenance. Price contingencies are computed at 1.4%–1.5% on foreign exchange costs and 5.5%–5.8% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^d Includes interest and commitment charges. Interest during construction for the Asian Development Bank (ADB) loan has been computed at the 5-year fixed United States dollar swap rate plus an effective contractual spread of 50 basis points. Commitment charges for the ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank estimates.

Table 2: Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank		
Ordinary capital resources (regular loan)	275.0	68.9
State Government of Madhya Pradesh	124.0	31.1
Total	399.0	100.0

Source: Asian Development Bank estimates.

E. Implementation Arrangements

17. The implementation arrangements are summarized in Table 3 and described in detail in the PAM (footnote 19). The state government, through UDHD, will be the executing agency and will be responsible for overall strategic planning, guidance, and management of the project, and compliance with the loan undertakings and covenants. The MPUDC will be the implementing agency and will be responsible for planning, implementing, monitoring and supervising, and coordinating all project activities. The project team has recruited a project management consultant (PMC) using the quality- and cost-based selection method with an 80:20 quality–cost ratio following ADB’s Guidelines on the Use of Consultants (2013, as amended from time to time). Procurement of civil works and goods will be carried out following ADB’s Procurement

²⁰ Loan Agreement and Project Agreement (accessible from the list of linked documents in Appendix 2).

Guidelines (2015, as amended from time to time). Advance contracting and retroactive financing will be provided under the project. ADB has advised the governments of India and Madhya Pradesh that approval of advance contracting and retroactive financing does not commit ADB to finance the project. Consultants will help, among others, implement the geographic information system and set up systems to monitor and supervise the quality of water service in the project towns.

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period ^a	July 2017–June 2022		
Estimated completion date	30 June 2022; 31 December 2022 (loan closing date)		
Project management			
(i) Oversight body	Empowered and Executive Committee: chief secretary, state government of Madhya Pradesh (chair); principal secretary, UDHD; principal secretary, Ministry of Finance; principal secretary, PHED; and managing director, MPUDC (member secretary)		
(ii) Executing agency	UDHD in Madhya Pradesh		
(iii) Implementing agency	MPUDC		
Procurement	ICB	1 DBO contract	\$60 million
	NCB	22 DBO contracts and 8 small NCB contracts	\$264 million
Consulting services	PMC (QCBS)	2,941 person-months	\$9.6 million
	Monitoring and review body (QCBS)	200 person-months	
	GIS (QCBS)	150 person-months	
Retroactive financing and/or advance contracting	Retroactive financing will be up to 20% of the ADB loan amount for eligible expenditures incurred prior to loan effectiveness, but not earlier than 12 months prior to the signing of the loan agreement.		
Disbursement	The loan proceeds will be disbursed following ADB's <i>Loan Disbursement Handbook</i> (2015, as amended from time to time) and detailed arrangements agreed between the Government of India and ADB.		

ADB = Asian Development Bank, DBO = design–build–operate, GIS = geographic information system, ICB = international competitive bidding, MPUDC = Madhya Pradesh Urban Development Company, NCB = national competitive bidding, O&M = operation and maintenance, PHED = Public Health Engineering Department, PMC = project management consultant, QCBS = quality- and cost-based selection, UDHD = Urban Development and Housing Department.

^a Overall project implementation will be 12 years: 2 years for the construction period and 10 years for O&M. The government counterpart fund will fund O&M and incidental costs for the last 7 years of project implementation.

Source: Asian Development Bank.

III. TECHNICAL ASSISTANCE

18. The proposed TA will support capacity development of institutions in the urban sector of Madhya Pradesh.²¹ It will have three outputs: (i) septage management in the project towns improved by implementing sanitation safety plans; (ii) capacity of the MPUDC and ULBs in the project towns developed to manage the DBO contracts and to manage assets after contract completion; and (iii) awareness-raising activities relating to water preservation, environmental protection, and hygiene awareness conducted in the project towns. The TA is estimated to cost \$1,000,000, which will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-others). The state government will provide counterpart staff, office space, workshop venues, and other in-kind contributions. MPUDC will be the executing agency for the TA, which will be implemented over 3 years.

²¹ Attached Technical Assistance (accessible from the list of linked documents in Appendix 2).

IV. DUE DILIGENCE

A. Technical

19. The MPUDC has recruited qualified design consultants to undertake subproject surveys and investigations for preparing detailed design reports that include evaluating alternative techno-economic options. A water resource review committee and a technical review committee have been established to review surface water source sustainability and the most appropriate techno-economic solutions considering full life-cycle costs. The PMC has been recruited to validate the detailed engineering designs submitted by the DBO contractor.

20. The project includes performance-based DBO contracts with a 10-year O&M period, which will improve construction quality and mitigate the ULBs' weak O&M capacity by providing continuity in system operation. The PMC will monitor the construction and initial operation services to ensure low nonrevenue water and proper asset management. MPUDC will recruit an independent performance monitoring and review body to review the contractors' performance and employers' obligations over the operation service period. The cost of house service connections and asset replacement during operation services has been capitalized and included in the DBO contracts. With state government support, the ULBs are obligated with periodical tariff setting, collection for O&M cost recovery, and providing sufficient funds for sustainable service delivery and optimal maintenance of the assets created.

B. Economic and Financial

21. **Economic analysis.** The economic analysis was conducted for the two sample towns for which detailed designs were completed: water supply and drainage subprojects in Khajuraho and water supply subproject in Sagar. The estimated economic internal rates of return for the two sample towns are 12.1%–13.3%, higher than the economic opportunity cost of capital (estimated at 12.0%), indicating sufficient economic return. The results of the sensitivity analysis are not satisfactory against (i) capital costs overrun by 20%, (ii) O&M costs overrun by 20%, (iii) benefits decrease by 20%, and (iv) combined worst scenario. However, it is expected that the proposed subprojects will secure economic viability even in those cases as a result of the unquantifiable benefits, including the improvement of environment quality and increase in land value, which are not reflected in the analysis.²²

22. **Financial analysis.** The financial internal rates of return for the project, calculated on the basis of income from water and sewerage tariffs, are negative since the water tariffs are expected to recover partial O&M costs only. A cash flow analysis of ULBs, including revenues from property tax and institutionalized transfers from the state government, is more relevant and confirms that project cities have the financial capacity to sustain infrastructure and deliver the services upon introduction of volumetric tariff in FY2020.²³ Sample ULBs' financial projections demonstrate that, with (i) rationalizing the tariffs, (ii) improving collection efficiency, (iii) recovering arrears with adequate provisioning for bad debts, (iv) computerizing operations and financial management, and (v) continued government support, the revenue account will remain in surplus. The 10-year performance-based O&M contract partly funded under the loan and other reforms built into the project will help ULBs improve financial sustainability.

²² Economic Analysis and Subproject Cost and Benefit Flow Stream (accessible from the list of linked documents in Appendix 2).

²³ Financial Analysis (accessible from the list of linked documents in Appendix 2).

C. Governance

23. A financial management assessment of the UDHD, MPUDC, and six sample ULBs show that the overall risk is substantial, primarily because the newly established MPUDC needs to quickly become operational to implement the project.²⁴ The ULBs are small and have comparatively lower capacity. However, a number of key staff members with significant experience in implementing donor-funded projects from the existing project management unit (PMU) at the UDHD were transferred to the MPUDC. A financial management action plan has been prepared to guide the PMU and project implementation units on financial management, which includes setting up financial accounting, reporting, audit, and management information systems in the MPUDC; adopting and implementing various municipal reforms; and providing training and capacity building support to all relevant staff.

24. ADB's Anticorruption Policy (1998, as amended to date) was explained to, and discussed with the governments of India and Madhya Pradesh, and the UDHD. The specific policy requirements and supplementary measures are described in the PAM (footnote 19). Based on the risk assessments, some of the mitigation measures in the project design aim to (i) establish a mechanism for regular voluntary disclosure of project-related information to residents, (ii) maintain an e-procurement system to enhance transparency in project implementation, and (iii) establish a grievance redress mechanism to ensure quick and effective resolution.

D. Poverty and Social

25. The project will contribute to poverty reduction by developing infrastructure, improving quality of life, reducing drudgery of women, reducing health morbidity and related health expenditures, and stimulating economic growth. It will improve sanitation and drainage systems, especially in low-income households and slums in Khajuraho and Rajnagar.²⁵

26. **Gender.** The project is classified effective gender mainstreaming. The gender action plan has clear targets, responsibilities, and resource allocation.²⁶ Awareness raising campaigns on water conservation, environmental protection, and hygiene will specifically target at least 50% participation from women and girls. Grievance redress committees will have at least 30% women representatives. Women will comprise at least 30% of the participants to the MPUDC and ULBs' capacity building training on DBO management. Women will comprise at least half of the 400 people benefiting from skills training on water supply asset management, operations, and management. The PMC will help the MPUDC to prepare a town-wise action plan for implementation.

E. Safeguards

27. **Social safeguards.** The project is classified category B for involuntary resettlement and for indigenous peoples. Subprojects with significant involuntary resettlement and/or indigenous peoples impacts will not be eligible for funding under the project. MPUDC prepared a resettlement framework and indigenous peoples planning framework following ADB's Safeguard Policy Statement (2009) and applicable laws. MPUDC prepared a draft resettlement plan and due diligence reports on involuntary resettlement impacts and impacts on indigenous peoples in

²⁴ Financial Management Assessment Report (accessible from the list of linked documents in Appendix 2).

²⁵ Summary Poverty Reduction and Social Strategy (accessible from the list of linked documents in Appendix 2).

²⁶ Gender Action Plan (accessible from the list of linked documents in Appendix 2).

line with the Safeguard Policy Statement, which will be updated after detailed designs. The involuntary resettlement impacts are mostly temporary during the construction. Indigenous peoples or scheduled tribes will benefit from project investments. The proposed mitigation measures, including capacity building of the PMU and project implementation units, are adequate to address the assessed risks. MPUDC disclosed the safeguard documents on the government's website, and will share relevant information with the affected persons. A grievance redress mechanism will be established by each participating ULB and disclosed to the project's beneficiaries and/or affected communities before civil work contracts are awarded. The implementing agency will prepare a semiannual social safeguard monitoring report for ADB review and disclosure.²⁷

28. **Environmental safeguards.** The project is classified category B for the environment following the Safeguard Policy Statement. MPUDC prepared an environmental assessment and review framework in line with the Safeguard Policy Statement and applicable laws. Three initial environmental examination reports prepared for sample subprojects in Khajuraho, Kothri, Rajnagar, and Sagar show that the subprojects are not likely to cause any significant adverse environmental impacts and that any impacts during construction and operation can be mitigated through appropriate design and good practices. Public consultations were conducted by MPUDC for the selected subprojects during preparation, and will be continued throughout project implementation. Environmental grievances will be handled following the grievance redress mechanism developed for the project. The implementing agency will prepare a semiannual environmental monitoring report for ADB review and disclosure.²⁸

29. **Disasters and climate change.** Climate change projections indicate a temperature increase of 2.6° C by 2050 in Madhya Pradesh.²⁹ The key risk factors are droughts, extremely low and erratic rainfall leading to frequent flooding, and seasonal depletion of surface water sources. The project supports the efficient use of surface water and the preservation of groundwater, raising awareness of climate risks, and improvement of sewage and flood drainage management to strengthen climate resilience. The project will incorporate appropriate measures for risks related to earthquakes, landslides, floods, and climate change.³⁰

F. Risks and Mitigating Measures

30. Major risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.³¹ The project loan's fiduciary risk is medium, and the state government has adequate public financial management systems to mitigate such risks. The integrated project benefits and impacts are expected to outweigh the costs.

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigating Measures
Lack of qualified contractors and challenges in availability of cleared sites may lead to delays in project implementation, and	MPUDC and ULBs have conducted several pre-bid meetings to explain the bid documents to the potential bidders. MPUDC has taken advance actions for timely possession and securing of the land acquired for project works. MPUDC employed a senior manager to ensure availability of unencumbered land and

²⁷ Resettlement Framework, Indigenous Peoples Planning Framework, and Resettlement Plan; Land Acquisition and Resettlement Due Diligence Reports (accessible from the list of linked documents in Appendix 2).

²⁸ Environmental Assessment and Review Framework and Initial Environmental Examination reports (accessible from the list of linked documents in Appendix 2).

²⁹ State Government of Madhya Pradesh. 2013. *Madhya Pradesh State Action Plan on Climate Change*. Bhopal.

³⁰ Project Climate Risk Assessment and Management Report (accessible from the list of linked documents in Appendix 2).

³¹ Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

Risks	Mitigating Measures
result in cost and time overruns.	minimize private land acquisition. ULBs' obligations include ensuring right of access for laying pipelines and construction of treatment plants and water tanks.
Water supply network is not operated properly during the post-construction period.	Project implementation is through composite design–build–operate contracts. Contractor's remuneration is linked to performance with built-in incentives for nonrevenue water reduction through effective network management. Sufficient O&M funding is included in the project cost.
Risks related to climate change affect water sustainability.	Risk screening will be done to identify the type and intensity of climate risk the subprojects will face. If risks are found to be relevant, adaptation or resilience measures to protect the investments from pre-identified risks will be incorporated into the project design. The Water Resource Review Committee, comprising experts from all water-related departments, is constituted to review and validate the water source selection and intake location.
The recently established MPUDC is still in the process of ensuring adequate staffing and setting up information systems, internal controls, and accounting and reporting systems.	MPUDC staff will include UDHD staff with strong understanding of financial regulations. MPUDC has committed to fill all sanctioned positions including a full-time chartered accountant. External auditors have been appointed, and internal auditors will be appointed. Finance staff will be provided training in ADB financial reporting, disbursement, and procurement requirements under the project.
Inadequate tariff affects cost recovery and financial sustainability because of low willingness to pay.	Awareness campaigns for consumers and ULBs on improved service levels linked to marginally higher tariffs will be conducted, and continuing policy dialogue for gradual and continuous volumetric tariff increases will be implemented.

MPUDC = Madhya Pradesh Urban Development Company, O&M = operation and maintenance, UDHD = Urban Development and Housing Department, ULB = urban local body.

Source: Asian Development Bank.

V. ASSURANCES

31. The governments of India and Madhya Pradesh and the MPUDC have assured ADB that implementation of the project shall conform to all applicable ADB policies, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement and standard legal conditions, as described in the PAM and loan documents. The governments of India and Madhya Pradesh and the MPUDC have agreed with ADB on certain undertakings and covenants for the project, which are set forth in the loan and project agreements.

VI. RECOMMENDATION

32. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan of \$275,000,000 to India for the Madhya Pradesh Urban Services Improvement Project, from ADB's ordinary capital resources, in regular terms, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; for a term of 25 years, including a grace period of 5 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board.

Takehiko Nakao
President

12 April 2017

DESIGN AND MONITORING FRAMEWORK

Impacts the Project is Aligned with: Economic growth and urban living conditions improved, and infant mortality reduced in Madhya Pradesh (Twelfth Five-Year Plan and Madhya Pradesh Vision 2018) ^a			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
<p>Outcome</p> <p>Quality, coverage, efficiency, and sustainability of urban service delivery improved in Madhya Pradesh</p>	<p>By 2023:</p> <p><u>Quality and coverage</u></p> <p>a. Continuous piped water supply coverage increased to 90% (300,000 households), including at least 25% from vulnerable households, below poverty line (BPL) households, and households headed by women in 64 towns (2015 baseline: 0%)</p> <p>b. Time for fetching water by women in households headed by women and/or BPL households reduced to 10 minutes (2015 baseline: 55 minutes)</p> <p>c. Coverage of decentralized sewage management increased to at least 70%, covering 6,000 households, including at least 25% vulnerable households, BPL households, and households headed by women, in two tourist towns (Khajuraho and Rajnagar) (2015 baseline: 0%)</p> <p>d. 90% of the water quality tests met the country standards (2015 baseline: 0%)</p> <p>e. Incidence of waterlogging and/or flooding reduced by 50% in Khajuraho and Rajnagar (2015 baseline: seven flooding events per year)</p> <p><u>Efficiency and sustainability</u></p> <p>f. Nonrevenue water maintained below 15% for piped water supply (2015 baseline: more than 40%)</p> <p>g. 80% of annual O&M cost recovered from water tariff collection in 70% of urban local bodies (ULBs) (2015 baseline: less than 20% in sample towns)</p>	<p>a–c. State census sex- and poverty-disaggregated baseline survey at project inception and updated annually</p> <p>d–e. ULB annual report on service-level benchmarks</p> <p>f–g. Project performance and monitoring system (PPMS) from Madhya Pradesh Urban Development Company (MPUDC)</p>	<p>Climate change may cause shortage in surface water and groundwater sources</p>
<p>Outputs</p> <p>1. Water supply infrastructure in 64 project towns and integrated storm water and sewage infrastructure in two tourist towns improved</p>	<p>By 2019:</p> <p>1a. Water treatment capacity of 180 MLD installed (2015 baseline: 90 MLD)</p> <p>1b. 3,800 km water supply pipes installed (2015 baseline: 130 km)</p> <p>1c. 300,000 households provided with metered piped connections, including at least 25% from vulnerable households, BPL households, and households headed by women, in project covered areas (2015 baseline: 0)</p> <p>1d. Three MLD sewage or septage treatment plants constructed (2015</p>	<p>1a–b. PPMS from MPUDC</p> <p>1c–e. Quarterly progress reports from MPUDC</p>	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
<p>2. Systems to ensure sustainable urban infrastructure operation and management in all the project towns established</p> <p>3. Capacity of MPUDC, and ULBs in 64 project towns improved</p>	<p>baseline: 0)</p> <p>1e. 120 km new sewer and storm water mains and networks in Khajuraho and Rajnagar installed (2015 baseline: 82 km)</p> <p>By 2022: 2a. 23 performance-based DBO contracts covering 64 project towns delivered (2015 baseline: 0)</p> <p>2b. At least 20 water supply customer service centers established in the project towns (2015 baseline: 0)</p> <p>2c. Volumetric water billing service delivered to 100% customers (2015 baseline: 0)</p> <p>2d. Water supply pressure of at least 7 meters achieved consistently at consumer end (2015 baseline: 0)</p> <p>2e. Underground water recharge systems maintained in four towns (2015 baseline: 0)</p> <p>By 2022 <u>Demand-side capacity</u> 3a. At least 240,000 households reached by awareness-raising campaigns on water conservation, environmental protection, and hygiene (with at least 50% of participants from female-headed households or BPL)</p> <p>3b. Grievance redress committees (at least 30% of committee representatives are women) constituted in each of the 64 project towns</p> <p><u>Supply-side capacity</u> 3c. GIS for effective O&M of water services in 64 towns established and operational</p> <p>3d. 400 people from MPUDC and ULBs trained on managing and monitoring DBO performance-based contracts (at least 30% are women)</p> <p>3e. Information technology systems to improve ULBs' day-to-day management in 15 pilot towns set up and operational</p> <p>3f. Sanitation safety plans developed and implemented in 64 project towns</p> <p>3g. 400 people (at least 50% are women) trained in income-earning opportunities on project asset O&M</p>	<p>2a–e. Quarterly progress reports from MPUDC</p> <p>3a. Annual State data from MPUDC</p> <p>3b–g. Quarterly Project progress reports and PPMS</p> <p>3f. Project completion report</p>	<p>Low consumer and political willingness lead to lack of periodical adjustment of water tariffs</p> <p>Limitations of local recruitment procedures constrain MPUDC from attracting good talent from the labor market</p>

Key Activities with Milestones	
1. Water supply infrastructure in 64 project towns and integrated storm water and sewage infrastructure in two project towns improved	
1.1	Complete project outline designs for all project towns (Q1 2017)
1.2	Complete bidding of all 23 DBO packages (Q3 2017)
1.3	Complete design and construction of all packages (Q4 2019)
1.4	Install metered piped water connections in 300,000 properties (Q4 2019)
2. Systems to ensure sustainable urban infrastructure operations and management established in all the project towns	
2.1	Contractors successfully operate water supply delivery in all the 23 contracts (Q1 2021)
2.2	Establish 20 water supply customer service centers to serve all project towns (Q3 2020)
2.3	Conduct regular customer satisfaction surveys for water supply (Q4 2021)
3. Capacity of MPUDC, ULBs in 64 project towns improved	
3.1	Establish gender budget cell in the Urban Development and Housing Department (Q3 2017)
3.2	Conduct water conservation, environmental, and hygiene awareness-raising activities, with women comprising at least 50% of the participants (Q1 2018)
3.3	Constitute grievance redress committees in each project town, with women comprising at least 30% of committee representatives (Q3 2017)
3.4	Hire consultants to design and set up information technology systems to improve management and service provision in 15 pilot towns (Q4 2018)
3.5	Hire consultants to design GIS for effective O&M of water services in 64 towns (Q2 2020)
3.6	Conduct 16 workshops on contract management covering 64 towns with at least 30% participation by women (Q2 2020)
3.7	Complete and implement detailed sanitation safety plan in the project towns (Q2 2022)
3.8	Train 400 people in water supply system O&M (Q2 2022)
Inputs	
Asian Development Bank	
Ordinary capital resources:	\$275.0 million (regular loan)
TASF-other sources:	\$1.0 million (grant)
State Government of Madhya Pradesh: \$124.0 million	
Assumptions for Partner Financing	
Not applicable	

BPL = below poverty line, DBO = design–build–operate, GIS = geographic information system, km = kilometer, MLD = million liters per day, MPUDC = Madhya Pradesh Urban Development Company Limited, O&M = operation and maintenance, PPMS = project performance monitoring system, Q = quarter, TASF = Technical Assistance Special Fund, ULB = urban local body.

^a State Government of Madhya Pradesh. 2012. *Twelfth Five-Year Plan, 2012–2017 and Annual Plan, 2012–2013*. Bhopal; and State Government of Madhya Pradesh. 2013. *Madhya Pradesh Vision 2018: An Agenda for Development, Change and Good Governance*. Bhopal.

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/RRPs/?id=42486-016-3>

1. Loan Agreement
2. Project Agreement
3. Sector Assessment (Summary): Water and Other Urban Infrastructure and Services
4. Project Administration Manual
5. Contribution to the ADB Results Framework
6. Development Coordination
7. Attached Technical Assistance: Capacity Development of Institutions in the Urban Sector in Madhya Pradesh
8. Financial Analysis
9. Economic Analysis
10. Country Economic Indicators
11. Summary Poverty Reduction and Social Strategy
12. Gender Action Plan: Gender Equality and Social Action Plan
13. Initial Environmental Examination: Water Supply Subprojects in Khajuraho and Rajnagar
14. Initial Environmental Examination: Water Supply Subproject in Kothri
15. Initial Environmental Examination: Water Supply Subprojects in Sagar and Makronia
16. Environmental Assessment and Review Framework
17. Resettlement Plan: Water Supply Subprojects in Khajuraho and Rajnagar
18. Resettlement Framework
19. Indigenous Peoples Planning Framework
20. Risk Assessment and Risk Management Plan

Supplementary Documents

21. Financial Management Assessment Report
22. Sector Assessment: Water and Other Urban Infrastructure and Services
23. Land Acquisition and Resettlement Due Diligence Report: Water Supply Subproject in Kothri
24. Land Acquisition and Resettlement Due Diligence Report: Water Supply Subproject in Sagar
25. Subproject Selection Criteria
26. Subproject Cost and Benefit Flow Stream
27. Project Climate Risk Assessment and Management Report