



Technical Assistance Report

Project Number: 50109-001
Transaction Technical Assistance (TRTA)
July 2017

Myanmar: Preparing the Second Mandalay Urban
Services Improvement Project
Cofinanced by Urban Climate Change Resilience
Trust Fund under the Urban Financing Partnership
Facility

CURRENCY EQUIVALENTS

(as of 10 July 2017)

Currency unit	–	kyat (MK)
MK 1.00	=	\$ 0.00074
\$1.00	=	MK 1,357.00

ABBREVIATIONS

ADB	–	Asian Development Bank
AFD	–	French Development Agency
Km	–	kilometer
m ³	–	cubic meter
MCDC	–	Mandalay City Development Committee
MRG	–	Mandalay Regional Government
MUSIP1	–	Mandalay Urban Services Improvement Project
MUSIP2	–	Second Mandalay Urban Services Improvement Project
UCCRTF	–	Urban Climate Change Resilience Trust Fund
TA	–	technical assistance

NOTE

In this report, "\$" refers to US dollars.

Vice-President	S. Groff, Operations 2
Director General	R. Subramaniam, Southeast Asia Department (SERD)
Officers-in-charge	Paulus van Klaveren, Urban Development and Water Division, SERD Y. Tamura, Myanmar Resident Mission, SERD
Team leader	E. Honda, Principal Urban Development Specialist, SERD
Team members	L. Adams, Senior Social Development Specialist, SERD M. Lacambacal, Operations Assistant, SERD J. Narciso, Associate Project Analyst, SERD M. Ovenden, Social Development Specialist (Resettlement), SERD O. Goh-Livourness, Counsel, Office of the General Counsel S. Tansengco-Schapero, Senior Financial Specialist, SERD K. Thu, Infrastructure Specialist, SERD A. Veron-Okamoto, Transport Specialist, SERD K. T. Wynn, Associate Safeguard Officer, SERD
Peer reviewer	J. Huang, Principal Urban Development Specialist, SARD

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

CONTENTS

	Page
TRANSACTION TECHNICAL ASSISTANCE AT A GLANCE	
I. THE ENSUING PROJECT	1
II. THE TECHNICAL ASSISTANCE	3
A. Justification	3
B. Outputs and Activities	3
C. Cost and Financing	4
D. Implementation Arrangements	4
APPENDIX	
1. Cost Estimates and Financing Plan	6
2. List of Linked Documents	7

TRANSACTION TECHNICAL ASSISTANCE AT A GLANCE

1. Basic Data		Project Number: 50109-001	
Project Name	Preparing the Second Mandalay Urban Services Improvement Project	Department /Division	SERD/SEUW
Nature of Activity	Project Preparation	Executing Agency	Mandalay Regional Government
Modality	Regular		
Country	Republic of the Union of Myanmar		
2. Sector		Subsector(s)	
✓ Water and other urban infrastructure and services	Urban sewerage		Financing (\$ million) 0.25
	Urban solid waste management		0.25
	Urban water supply		0.25
Transport	Urban public transport		0.23
		Total	0.98
3. Strategic Agenda		Subcomponents	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Climate Change Information	
Environmentally sustainable growth (ESG)	Urban environmental improvement	Climate Change impact on the Project	Medium
4. Drivers of Change		Components	
Governance and capacity development (GCD)	Institutional development	Gender Equity and Mainstreaming	
Partnerships (PAR)	Bilateral institutions (not client government) Official cofinancing	Effective gender mainstreaming (EGM)	✓
5. Poverty and SDG Targeting		Location Impact	
Geographic Targeting	No	Urban	High
Household Targeting	No		
SDG Targeting	Yes		
SDG Goals	SDG6, SDG9, SDG11		
6. Risk Categorization		Low	
7. Safeguard Categorization Safeguard Policy Statement does not apply			
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		0.75	
Transaction technical assistance: Technical Assistance Special Fund		0.75	
Cofinancing		0.23	
Urban Climate Change Resilience Trust Fund under the Urban Financing Partnership Facility		0.23	
Counterpart		0.00	
None		0.00	
Total		0.98	

I. THE ENSUING PROJECT

1. Mandalay City, with a population of about 1.25 million, is the country's second-largest city and the capital of Mandalay Region. The city is the cultural, educational, and economic hub of Upper Myanmar and acts as a national economic center. Mandalay's population is growing at over 10% per year, much faster than the country's total population growth rate of 1.8% per year and urban population growth rate of 2.3% per year.¹ While the city's population is about 2% of the national population, its contribution to GDP is approximately 8%. It is expected that improved urban services will induce economic activities in Mandalay; thus, the project will contribute to fostering balanced national development by reducing the concentration of population and economic activities in Yangon and promoting economic growth in Mandalay Region and its surroundings. It is located on the Greater Mekong Subregion Northern Economic Corridor linking the People's Republic of China and India. In Mandalay Region, increased climate change vulnerability is observed such as shorter monsoon periods, longer pre-monsoon droughts, and higher daily rainfall depths.² These changing climatic conditions, in tandem with the expanding urban area, are increasing the demand for reliable water resources, effective wastewater collection and treatment, and improved urban drainage.

2. The coverage of the piped-water supply system is only 55% and the remaining residents use mainly private shallow wells. The piped-water supply system serves for 10 hours per day on average. Nonrevenue water is estimated at approximately 52%, of which at least 35,000 cubic meter (m³)/day (about 70% of the total nonrevenue water) is due to physical losses from faulty meters and leaks; the remainder is due to uncertainties in meter readings and authorized unbilled consumption.³ Despite high population density and high pollution levels in received water, there is neither a piped sewerage system nor a centralized wastewater treatment plant. Sanitation provision consists of septic tanks draining largely to the roadside drains, and latrines of varying designs. Environmental impacts are consequently high, with pollution of watercourses and groundwater. The biochemical oxygen demand levels in major creeks in the city are up to 80 milligrams per liter. About 780 tons per day of domestic solid wastes are collected by the Mandalay City Development Committee (MCDC); however, large amounts are disposed in drains and canals. This causes not only degradation of environment and public health, but also increases flood damages due to reduction of drainage capacity. More than 60% of the waste is organic waste, followed by plastics (15%) and paper (7%). There are about 15 transit stations in the city, typically along the streets and occupying public spaces. There are two existing dump sites without appropriate treatment. During the wet season, floods are caused mainly by the lack of maintenance of canals and storage ponds, as well as insufficient capacities of the existing pumping stations. The road network is largely uncongested except the city center area. Motorcycles, public transport vehicles, and delivery trucks park on the streets, narrowing roads, and thus, causing congestion.

3. The Mandalay Regional Government (MRG) does not directly intervene in urban management matters in Mandalay City but it has a significant role in approving infrastructure projects and urban service tariffs. The MCDC is tasked with urban service delivery and infrastructure development as stated in the Mandalay Development Law (2015).⁴ The MCDC's current revenues have not increased as fast as operating expenses, and transfer from the Union

¹ Department of Population, Ministry of Immigration and Population. 2015. *Myanmar Population and Housing Census*. Nay Pyi Taw.

² Department of Meteorology and Hydrology, Ministry of Transportation. 2010. *Some Observed Climate Change Impacts in Myanmar*. Nay Pyi Taw.

³ Includes consumption by public institutions such as monasteries and military users.

⁴ State Peace and Development Council. 2015. *City of Mandalay Development Law*. Nay Pyi Taw.

Government have remained low. The budget has been balanced by keeping operation and maintenance below what would be required for proper operation and maintenance. Therefore, it is difficult to attract the private sector in investing in delivery of these services.

4. MUSIP1⁵ was approved on 12 November 2015, signed on 9 September 2016, and became effective on 19 April 2017. MUSIP1 addresses part of the core urban problems and binding constraints described in paragraphs 3 and 4 through (i) improved water supply systems, (ii) improved wastewater and drainage management, and (iii) strengthened capacity for urban services management. MUSIP1 is financed by (i) \$60 million loan from the Asian Development Bank (ADB), (ii) \$4 million grant from the Urban Climate Change Resilience Trust Fund (UCCRTF)⁶ under the Urban Financing Partnership Facility administered by ADB, (iii) €40 million loan from the Agence Française de Développement (AFD), and (iv) €8 million grant from European Union's Asian Investment Facility administered by AFD. The AFD loan and the European Union grant are implemented in parallel with ADB loan and UCCRTF grant. MUSIP1 was the first loan for ADB in the urban development sector in Myanmar after reengagement and the first external loan from development partners for MDCDC; thus, the scope of MUSIP1 focused on the limited number of priority subsectors that require urgent improvement. At the same time, comprehensive urban sector analyses were conducted for future intervention during project preparation, covering urban planning and land management, water supply, wastewater and sanitation, drainage and flood protection, solid waste management, and urban transport. The scope of the Second Mandalay Urban Services Improvement Project (MUSIP2) has been proposed based on the priorities and timeline identified under these sector analyses.

5. Indicative impact of MUSIP2 will be improved urban environment and public health conditions in Mandalay. Indicative outcome will be improved urban services in Mandalay.⁷ It is proposed that MUSIP2 will have two outputs: (i) urban infrastructure upgraded and (ii) urban service management capacity strengthened. For output 1, the MUSIP2 will continue to support the improvement of water supply systems and the wastewater management, that were started under MUSIP1. In addition, MUSIP2 will cover solid waste management and urban transport management, not included in MUSIP1. MUSIP1 was designed to showcase an integrated environmental improvement approach in the areas along Thingazar Creek. This approach will be followed in MUSIP2. Infrastructure components covered by MUSIP1 and MUSIP2 are summarized in Table 1 that clearly shows how MUSIP2 will complement MUSIP1.

Table 1: Infrastructure Components of MUSIP1 and MUSIP2

Subsector	MUSIP1 (Apr 2016–Mar 2023)	MUSIP2 (Apr 2020–Mar 2027)
Water supply system	Households with access to water supply without interruption increased from 19,000 (2014) to 124,000 (2024) through the upgrading of water treatment plant and reservoir, rehabilitation and construction of distribution networks, replacement of connections, and non-revenue water reduction.	The number of households with access without interruption further increased through the construction of new water intake at Dohtawady, expansion of distribution networks, increase of connections, and non-revenue water reduction.
Wastewater management	Direct discharge of wastewater to receiving waters reduced from 85,000 cubic meter (m ³)/day (2014) to 25,000 m ³ /day (2024) through construction of wastewater treatment	BOD loading to environment reduced through increase of wastewater treatment capacity, improvement of treatment process, expansion of interceptor and sewerage networks,

⁵ ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Administration of Grant to the Union of Myanmar for the Mandalay Urban Services Improvement Project*. Manila.

⁶ Financing partners: the Rockefeller Foundation and the governments of the United Kingdom and the United States (at the time of MUSIP1 approval). For the purpose of MUSIP1, only financing from the Government of the United Kingdom is utilized.

⁷ Government of Myanmar. 2016. *Economic Policy of the Union of Myanmar*. Nay Pyi Taw.

	plant, construction of interceptor along Thingazar Creek, construction of sewerage networks, and improvement of septage treatment.	construction of household connections, and improvement of septage treatment.
Drainage and flood protection	Households living in wards affected by seasonal flooding reduced from 92,000 (2014) to 18,000 (2024) through the dredging of canals and increase of pumping capacity.	
Solid waste management	Pilot community-based solid waste management in the areas along Thingazar Creek.	Solid waste collection increased through the expansion and upgrading of the northern dump site to sanitary landfill; upgrading of waste reception facilities; and improvement of overall waste collection, recycling, transportation, and disposal process. ^a
Urban transport management		City center traffic congestion reduced through improvement of intersection and road capacity management, construction of sidewalks with street lights, and construction and improved management of parking facilities.

^a. Closure of the southern dump site is required as it is located close to the proposed new water intake at Dothtawady. BOD= Biochemical oxygen demand; MUSIP1= Mandalay Urban Services Improvement Project; MUSIP2 = Second Mandalay Urban Services Improvement Project.

6. For output 2, MUSIP2 will continue activities initiated under MUSIP1 including (i) training programs in urban planning and management, municipal financial management, nonrevenue water reduction, tariff policy, and O&M; (ii) policy dialogue on cost recovery, climate change resilience, enabling environment for private sector participation, and integrated wastewater, solid waste, and flood risk management; and (iii) public awareness programs conducted on public health and environmental protection.

7. The indicative project cost is estimated at \$180 million. ADB will provide a concessional loan of \$150 million from its ordinary capital resources to help finance the project. Other cofinancing sources will provide \$15 million, and the government will provide \$15 million. AFD provided parallel financing for MUSIP1 to support the water supply system improvement. AFD might also be interested in providing a parallel financing or a joint cofinancing for MUSIP2. Details will be identified during project preparation.

8. The ensuing loan to support MUSIP2 and this transaction technical assistance (TA) to prepare MUSIP2 are included in the Country Operations Business Plan: Myanmar 2017–2019.

II. THE TECHNICAL ASSISTANCE

A. Justification

9. The transaction TA will help the government prepare MUSIP2. The project will improve urban environment and public health conditions through improved urban services in Mandalay. The TA will assess technical appropriateness, financial and economic viability, and environmental and social soundness and develop MUSIP2 suitable for ADB financing.⁸

B. Outputs and Activities

10. **Output: Feasibility study on ensuing project prepared.** The TA outputs will be (i) sector and subsector analyses, (ii) MUSIP2 outputs prioritized and identified, (iii) feasibility of the

⁸ The TA first appeared in the business opportunities section of ADB's website on 12 May 2017.

proposed investments for priority infrastructure construction and improvements determined, and (iv) institutional capacity strengthening and public awareness programs prepared. The TA will also prepare the project administration manual that includes all information and schedule describing project implementation.

C. Cost and Financing

11. The TA is estimated to cost \$1,000,000, of which \$750,000 will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-VI) and \$225,000 will be financed on a grant basis by the Urban Climate Change Resilience Trust Fund (UCCRTF)⁹ under the Urban Financing Partnership Facility and administered by ADB. The key expenditure items are listed in Appendix 1.

12. The government will provide counterpart support in the form of (i) all relevant documents, data, statistics, reports, and maps; (ii) qualified counterpart staff, including their field per diem and field transportation; (iii) office accommodation and office furniture, including desks, chairs, and communication facilities; and (iv) logistic assistance for the workshops and seminars, including identifying and sending invitations to participants. The government was informed that approval of the TA does not commit ADB to finance any ensuing project.

D. Implementation Arrangements

13. ADB will administer the TA. The Southeast Asia Department (SERD) will initiate the construction selection process. The consultant selection committee will be chaired by Operations Services and Financial Management Department and include the third party. The SERD will supervise and evaluate consultant.

Table 2: Implementation Arrangements

Aspects	Arrangements
Indicative implementation period	September 2017–September 2019
Executing agency	Mandalay Regional Government
Implementing agency	Mandalay City Development Committee
Consultants	To be selected and engaged by ADB
	QCBS (90:10) 22 person-months (international) and 44 person-month (national) \$975,000
Advance contracting	Advance contracting will be applied to consultant recruitment given that contract award subject to TA approval
Disbursement	The TA resources will be disbursed following ADB's <i>Technical Assistance Disbursement Handbook</i> (2010, as amended from time to time).
Asset turnover or disposal arrangement upon TA completion	Upon completion of the TA, equipment purchased under the TA will be transferred to the executing agency. ^a

ADB = Asian Development Bank, QCBS = quality- and cost-based selection, TA = technical assistance.

^a Excludes the rented equipment.

Source: ADB.

14. **Consulting services.** One package of consulting services with a value of \$975,000 will be procured through firm(s). The TA will require 10 positions and 22 person-months (pm) of international, and 13 positions and 44 pm of national consulting services. The consultants will be engaged through firm(s). The quality- and cost-based selection method with quality-cost ratio of 90:10, using simplified technical proposal procedures, will be followed. The time-based contract will be used. ADB will select and engage the consultant in accordance with the Guidelines on Use

⁹ Financing partners: the Rockefeller Foundation and the governments of Switzerland and the United Kingdom.

of Consultants (2013, as amended from time to time).¹⁰ The consultants may procure equipment through shopping in accordance with the ADB's *Procurement Guidelines* (2015, amended from time to time). Upon completion of the TA, equipment procured under the TA will be transferred to the executing agencies. The summary of consulting services requirements is provided in Table 3.

Table 3: Summary of Consulting Services Requirement

Positions (International)	Person-Months Required	Positions (National)	Person-Months Required
Municipal engineer / Team leader	5.0	Civil engineer / Deputy team leader	6.0
Water supply and wastewater management engineer / procurement specialist	3.0	Urban planner	2.0
Solid waste management specialist	2.0	Water supply engineer	4.0
Urban transport specialist	2.0	Sanitation engineer	4.0
Financial specialist	2.0	Solid waste management specialist	4.0
Economist	2.0	Urban transport specialist	4.0
Institutional development	1.5	Municipal finance specialist	4.0
Environment specialist	1.5	Economist	3.0
Social development and gender specialist	1.5	Institutional development specialist	2.0
Social safeguard specialist (IR and IP)	1.5	Environment specialist	3.0
		Social development and gender specialist	3.0
		Social safeguard specialist (IR and IP)	3.0
		Procurement specialist	2.0

IP = indigenous people, IR = involuntary resettlement.
Source: Asian Development Bank.

15. **Cofinancier requirements.** For TAs, the UCCRTF requires that activities related to consultations and capacity building report against gender disaggregated data. In case the TRTA recommends a UCCRTF financed Investment Grant, fund flow and delivery chain partners for the investment grant need to be separately reported to the UCCRTF Fund Manager.

¹⁰ Terms of Reference for Consultant (accessible from the list of linked documents in Appendix 2).

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Amount
A. Asian Development Bank^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	369.0
ii. National consultants	132.0
b. Out-of-pocket expenditures	
i. International and local travel	80.0
ii. Reports and communications	12.0
iii. Miscellaneous administration and support costs	12.0
2. Surveys	35.0
3. Goods (rental or purchase)	20.0
4. Training, seminars, and conferences	
a. Facilitators	5.0
b. Venue rental and related facilities	10.0
5. Contingencies	75.0
Subtotal (A)	750.0
B. Urban Climate Change Resilience Trust Fund^b under the Urban Financing Partnership Facility	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	225.0
Subtotal (B)	225.0
Total	975.0

Note: The technical assistance (TA) is estimated to cost \$1,000,000, of which contributions from the Asian Development Bank and the Urban Climate Change Resilience Trust Fund under the Urban Financing Partnership Facility are presented in the table above. The government will provide counterpart support in the form of (i) all relevant documents, data, statistics, reports, and maps; (ii) qualified counterpart staff, including their field per diem and field transportation; (iii) office accommodation and office furniture, including desks, chairs, and communication facilities; and (iv) logistic assistance for the workshops and seminars, including identifying and sending invitations to participants. The value of government contribution is estimated to account for 2.3% of the total TA cost.

^a Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF-6).

^b Financing partners: the Rockefeller Foundation and the governments of Switzerland and the United Kingdom. Administered by the Asian Development Bank.

Source: Asian Development Bank estimates.

LIST OF LINKED DOCUMENT

<http://www.adb.org/Documents/LinkedDocs/?id=50109-001-TARreport>

1. Terms of Reference for Consultants

TERMS OF REFERENCE FOR THE CONSULTANT

A. Objective of the Assignment

1. The consultant team will comprise international and national consultants. All consultants will work collectively as a team in developing required outputs. The consulting services required for the technical assistance (TA) will include, but will not necessarily be limited to, the services described in this terms of reference (TOR). The team leader and the ADB project officer may augment the tasks outlined as required, to comply with ADB guidelines and procedures, and to improve the quality of the overall TA. The tasks are to be carried out in close cooperation with the government, and extensive consultation is needed to ensure transfer of knowledge and fill ownership of the processes and documents by the concerned government agencies.

2. The team leader will (i) assist in the overall organization of the TA; (ii) guide, supervise, and coordinate the work of all team members; and (iii) take overall responsibility for preparing reports and consolidating reports prepared by all team members. The deputy team leader will assist the team leader to accomplish these tasks.

B. Scope of Services, Tasks and Expected Deliverables

3. The transaction TA to prepare MUSIP2 will (i) conduct sector and subsector analysis; (ii) help prioritize and identify project components for the ensuing loan and grant project; (iii) determine the feasibility of the proposed investments for priority infrastructure construction and improvements; and (iv) prepare institutional capacity strengthening and public awareness programs. The TA will prepare inputs to the relevant sections for loan documentations, including the aide memoire of ADB's loan and grant fact-finding mission; ADB's Report and Recommendations to President; and loan, grant, and project agreements, if appropriate and directed by the team leader and ADB project officer; and ensure that comments received are appropriately addressed. The project administration manual (PAM) will also be prepared under the TA, which includes all the information and schedules describing project implementation, and the TOR for the project implementation support consultant to be engaged under the ensuing project.

4. Special attention needs to be paid to the following aspects:

- (i) The project needs to be developed to have a simple straightforward engineering design, and clear project implementation and funds flow arrangements.
- (ii) The consultant will review the detailed scope and implementation progress of MUSIP1 to ensure that MUSIP2 will complement the achievements made under MUSIP1 and that implementation of MUSIP1 and MUSIP2 will be effectively synchronized.
- (iii) Vigilant assessment will be required to assess the implementing agency's capacity to borrow additional loans from ADB and potential cofinanciers, and comprehensive capacity development program will need to be developed to improve the municipal financial management.
- (iv) Cofinancing opportunities will be actively sought. The GEF and JFJCM are interested in providing grant, while AFD is interested in providing a parallel financing loan or a joint cofinancing loan. Close coordination with the potential cofinanciers will be required.

- (v) Close coordination with other ongoing and planned activities supported by different development partners is crucial to ensure complementarity and avoid overlapping. Such activities include, but not limited to: (a) grant for water supply systems in Amarapura Township funded by AFD, (b) grant for water supply systems in Pyi Gyi Dagon Township funded by the Japan International Cooperation Agency, (c) grant for community-based infrastructure funded by ADB, (d) technical assistance in water supply under the water operators partnership program supported by ADB and the WaterWorX supported by the Government of Netherlands, (e) technical assistance in water supply supported by Kitakyushu, (f) technical assistance in GIS by the European Space Agency, (g) technical assistance in solid waste management supported by the Institute for Global Environmental Strategies and Kitakyushu, (h) 100 Resilient Cities program supported by the Rockefeller Foundation, (i) technical assistance to train government officials in urban planning and management funded by ADB, (j) technical assistance for health impact assessment funded by ADB, and (k) technical assistance for piloting women-led recycling business funded by ADB.
- (vi) ADB's due diligence requirements in (a) economic and financial viability and sustainability; (b) governance and institutional issues; (c) poverty, social, and gender policies; and (d) safeguard on environment, involuntary resettlement, and indigenous peoples need to be explained thoroughly to the stakeholders.

1. Sector and Subsector Analysis

5. The consultant will conduct urban development sector and subsector analysis through review of the existing plans, studies, and project proposals for Mandalay. The consultant will:

- (i) review existing urban development plans, and other relevant plans, regulations, reports, standards, and studies;
- (ii) review existing investment proposals for urban infrastructure, public and commercial facilities, industrial zones, and residential area development;
- (iii) assess the quality and service level of existing urban infrastructure, particularly water supply, wastewater management, solid waste collection and treatment, and public transportation;
- (iv) study natural environment and climate change impacts, particularly the seasonal flooding, on urban infrastructure facilities and living environment;
- (v) analyze alternative development options, and assess the development potentials and risks for each option with a view to enable Mandalay to further grow as the economic hub of Upper Myanmar, and thus foster balanced national development by reducing the concentration of population and economic activities in Yangon;
- (vi) establish realistic development planning assumptions for population growth, demographic composition, household density, commercial and industrial development, external investments, and local economic growth;
- (vii) develop a planning framework identifying development needs in accordance with the development concept, city function, urban sprawling, and link with regional transport networks;

- (viii) assess the existing institutional framework for urban planning, land management, infrastructure planning and development, and operation and maintenance (O&M); and identify the bottlenecks in efficient urban management;
- (ix) recommend improvements and necessary updates of the existing sector and subsector development plans, a climate change resilient spatial plan, and a realistic institutional framework for efficient urban management and environment improvement; and
- (x) refine the climate change resilient urban and land use plan, as well as long- and medium-term subsector investment plans for water supply, drainage and flood protection, wastewater management, solid waste management, and urban transport prepared under MUSIP1.

2. Prioritization of Project Component

6. The consultant will help the government prioritize project components. The consultant will:

- (i) consult key stakeholders, including executing agency, implementing agency, urban residents, private sector, and civil society organizations, to identify the project design parameters, institutional bottlenecks to municipal service provision, and major issues facing MCDC in delivering municipal services;
- (ii) review the government's policy to finance capital expenditure and O&M of urban infrastructure, implementing agency's borrowing capacity and experience with charging tariffs, and cost recovery prospect of infrastructure investments;
- (iii) to avoid duplication and establish complementarity, identify and review planned and/or proposed other development activities in the project area funded by the government, ADB and other development partners, and the private sector; and
- (iv) collaborate closely with the executing agency, implementing agency, and beneficiaries in prioritizing and finalizing the project investment packages, and refine the project rationale for ensuing loan and grant funded project.

3. Policy Dialogue-related Activities

7. In relation to the policy dialogue between ADB and the Government of Myanmar, in conjunction with ADB's lending program for the urban development sector, the consultant will prepare notes for policy dialogue, based on discussions with the Union Government agencies (Foreign Economic Relations Department, Ministry of Planning and Finance; Treasury Department, Ministry of Planning and Finance; and Department of Urban and Housing Development, Ministry of Construction), MRG, and MCDC. These notes, which will help define the policy framework for project implementation, will cover (i) comprehensive and concerted support by various development partners for the long-term development of Mandalay; (ii) government's decentralization policy and needs to strengthen the technical and financial capacity of MRG and MCDC, particularly in urban planning and infrastructure management; (iii) policy and approach to sustainable and climate change resilient urban land use and infrastructure planning; (iv) tariff reform to achieve cost recovery for water supply, wastewater, and solid waste management; and (v) information education and communication strategy for water and sanitation. Policy notes will be included in the interim, draft final, and final reports, as appropriate.

4. Technical Aspects

8. The consultant will determine the technical feasibility of the proposed investment for infrastructure construction and improvement, and prepare preliminary engineering designs, cost estimates and financing plan, and procurement plan. The consultant will select the most suitable technology, equipment, and facilities, considering the technical and financial capacities of the project cities to manage, operate, and maintain. The consultant will:

- (i) recommend improvements to ensure good practices, and evaluate urban management and financing mechanisms for capital expenditures and O&M;
- (ii) incorporate lessons learned from ADB's as well as other development partners' interventions in urban development;
- (iii) coordinate with ADB and the government regarding possibilities of joint cofinancing and/or parallel financing by other development partners including ADB trust funds such as the GEF and JFJCM, and prepare investment packages suitable for joint cofinancing and/or parallel financing;
- (iv) collect and analyze information on urban infrastructure and civil works, including topography, soil, water resources, water quality, land use, major industries, main drainage patterns, stormwater and wastewater flows, organic and other pollution loads, catchment areas, drainage routes, solid waste generation rates and composition, solid waste collection rates and treatment rates, traffic management system, transport facilities, and traffic volume in the city center area by transportation mode and by day and time;
- (v) review, assess, and verify the alternative solutions and facilities proposed for the individual project components; and identify the most suitable option;
- (vi) based on the assessment of climate change impacts on infrastructure facilities, introduce climate resilient designs in planning urban infrastructure construction and improvement;
- (vii) prepare preliminary designs for the proposed infrastructure investments;
- (viii) prepare detailed cost estimates for each project component covering land and resettlement, civil works, equipment and materials, consulting services, project management, taxes and duties, physical and price contingencies, and interest and other charges during construction;
- (ix) prepare an O&M plan with cost implications and responsibilities for all project components;
- (x) conduct procurement risk assessment of the executing and implementing agencies, and prepare the Project Risk Assessment and Mitigation Action Plan;
- (xi) prepare a procurement plan specifying procurement methods and packages in accordance with ADB's *Procurement Guidelines* (2013, amended from time to time), with suggested level of prior or, if applicable, post review based on the procurement capacity assessments, containing an indicative implementation schedule with proposed sequencing of consultant recruitment and procurement bidding and awards;
- (xii) identify advance actions to be undertaken to ensure smooth start-up of project implementation using the project readiness filter, prepare documents necessary for advance actions such as Master Bidding Documents (for goods, civil works,

- and consulting services), invitations for expressions of interest and shortlist of consulting firms, and provide training for the evaluation of proposals; and
- (xiii) prepare the PAM that describes how the executing and implementing agencies will implement the project and deliver the results on time, with quality, within budget, and in accordance with the government and ADB policies and procedures.

5. Financial Analysis and Financial Management Assessment

9. The consultant will conduct financial due diligence in accordance with ADB's requirements such as ADB's publication *Financial Management and Analysis of Projects (2015)*.¹ Relevant guidance is available at <http://www.adb.org/projects/operations/financial-management-resources>. The consultant is encouraged to visit this page from time to time to secure the most updated material. The financial due diligence will include:

- (i) conducting a financial management assessment of the executing and implementing agencies, in accordance with the technical guidance note for *Financial Management Assessment (2015)*, including (a) assessing whether previous financial management assessments have been conducted by ADB or other agencies and, if so, reviewing the results and ascertaining whether these can be used as input; (b) assessing capacity for planning and budgeting, management and financial accounting, reporting, auditing, internal controls, and information systems; (c) reviewing proposed disbursement and funds-flow arrangements; and (d) concluding on the financial management risk rating and identifying and confirming measures for addressing identified deficiencies;
- (ii) supporting the preparation and agreement of cost estimates and a financing plan, in accordance with the technical guidance note for preparation of cost estimates (2014), which are based on verifiable data and are sufficient to support project implementation;
- (iii) preparing financial projections and conducting financial analyses of the executing and implementing agencies, and incremental recurrent costs, to determine financial sustainability, and reviewing proposed cost-recovery and tariff policies, including affordability;
- (iv) conducting financial evaluations (financial cost-benefit analyses) including sensitivity analyses of project components that have a cost-recovery objective;
- (v) where significant risks are identified to project financial sustainability or viability, proposing relevant financial performance indicators to be incorporated in financial covenants; and
- (vi) assessing and reaching agreement on financial reporting in accordance with the technical guidance note for project financial reporting (2014), auditing and public disclosure arrangements for the project, and, as appropriate, identifying and agreeing arrangements for receiving financial statements from executing and/or implementing agencies.
- (v) identify the need for use of the imprest account and statement of expenditures (SOE) procedures. In case that the imprest account and SOE procedures are

¹ ADB. 2014. *Financial Management, Cost Estimates, Financial Analysis, and Financial Performance Indicators. Operations Manual*. OMG2/BP. Manila.

proposed for the project, assess the relevant entity's capacity to manage the imprest account and SOE procedures, particularly without specific ceilings; and

- (vi) assist, as necessary, the team leader and other involved team members to explain to the Borrower the financial management assessment, the basis and results of financial projections, and relevant proposed financial risk mitigation measures.

6. Economic Analysis

10. The economic analysis will be consistent with ADB's Guidelines,² available at <https://www.adb.org/sites/default/files/institutional-document/32256/economic-analysis-projects.pdf>, and relevant technical notes published by ADB's Economic Research and Regional Cooperation Department. The consultant will:

- (i) prepare the project investment plan and the financing plan, and a financial analysis of the financial impact of the project on the Borrower. The consultant will follow the guidance set out in the ADB's *Financial Due Diligence Note (2009)* and *Note on Preparation and Presentation of Cost Estimates (2008)* and will:
 - (a) prepare the project investment plan and the financing plan using Excel;
 - (b) prepare projections of future incremental costs, assess whether each relevant entity will have funding to cover long-term costs as needed to ensure project sustainability, and identify actions needed to ensure project financial sustainability as the assurances or covenants in the loan agreement;
 - (c) identify the cash flow requirements and recommend appropriate fund flow mechanism and disbursement schedule; and
 - (d) provide costing and financial forecasting data for the economic analysis to support assessment of economic viability;
- (ii) undertake an economic evaluation of the project components to estimate the economic benefits;
- (iii) review the existing development plans, describe the macroeconomic and sectoral context within which the ensuing project will be implemented, and establish the rationale for public sector and ADB involvement;
- (iv) provide inputs for design of the socioeconomic survey, collect the necessary data required for economic analysis, and prepare baseline data;
- (v) conduct strengths, weaknesses, opportunities, and threats analysis which analyzes strengths, weaknesses, opportunities, and threats faced by the project cities; and
- (vi) prepare an economic analysis covering, among other things, demand analysis (including willingness to pay), least economic cost analysis, economic cost and benefit analysis, economic internal rates of return, average incremental economic costs, sensitivity analysis, risk analysis, benefit distributional analysis, poverty impact ratios, affordability analysis, and assessment of subsidies. If subsidies are needed, provide their rationale and justification, in line with ADB's *Criteria for Subsidies*.

² ADB. 2017. *Guidelines for the Economic Analysis of Projects*. Manila.

7. Environment and Climate Change

11. An environmental impact assessment (EIA) or initial environment examination (IEE) as applicable, scoped to the project design, its objectives of environment improvement, and its components, will be prepared to ensure the environmental soundness and sustainability of the project, support the integration of environmental considerations into the project decision-making process, and lead to overall environment improvements in the project area of influence. The consultant will follow ADB's Safeguard Policy Statement (2009) and the environment regulations of the government. The consultant is to actively coordinate with the safeguard specialists at the ADB's Myanmar Resident Mission. The consultant will:

- (i) collect baseline data on environmental attributes including an inventory of natural and artificial resources;
- (ii) conduct environment screening and assess the environment category of the project (currently considered Category B), guided by the ADB's Safeguard Policy Statement (2009) and the Rapid Environment Assessment Checklists for urban development, and assist the executing and implementing agencies in preparing and submitting the project proposal for screening and assessing the environment category under the Myanmar EIA Procedure (2015);
- (iii) assess environment impacts on attributes per the baseline collected; the projected impacts of climate change on the project areas and proposed investments; and identify climatic, topographical, and ecological patterns that may affect or be affected by the project;
- (iv) conduct an environmental assessment, as applicable, for each proposed component to identify potential direct, indirect, cumulative, and induced impacts and risks to physical, biological, socioeconomic (including impacts on livelihood through environmental media, health and safety, vulnerable groups, and gender issues), and physical cultural resources in the context of the project's area of influence, ensuring close integration of environment sustainability and climate resilient in infrastructure designs;
- (v) as necessary, conduct an analysis of alternatives as part of the feasibility analysis to inform the final selection of project components and their proposed engineering designs to ensure environment criteria are integrated in the decision-making process and the optimal option is selected;
- (vi) assist the executing and implementing agencies to carry out meaningful consultations (in accordance with the ADB's requirements and Myanmar EIA procedures) with affected people and facilitate their informed participation regarding environmental aspects of the project. During consultations, provide information to affected people regarding project components, potential environmental impacts during various project phases, and proposed mitigation measures. Ensure women's participation in consultation and involve stakeholders, including affected people and concerned non-government organizations, early in the environmental assessment process; and ensure that their concerns regarding the potential environmental impacts of the project are addressed in the project design and mitigation measures;
- (vii) as necessary, conduct an environment compliance audit for existing facilities, as guided by the ADB's Safeguard Policy Statement (2009), which will be rehabilitated under the project, including all the proposed subprojects, but not be

limited to, wastewater collection and treatment, flood protection and erosion control, solid waste collection and disposal, and other necessary infrastructure works;

- (viii) prepare an IEE if the project is Category B or an EIA if the project is Category A, covering all project components. The IEE or EIA shall be prepared following the provisions of ADB's Safeguard Policy Statement (2009), specifically its Appendix 1 (Safeguards Requirements 1. Environment) and Annex to Appendix 1 (Outline of an EIA Report). The IEE or EIA will include all the proposed components, but not be limited to, water supply, drainage and flood protection, and wastewater management, and other necessary infrastructure works; and assist the executing and implementing agencies in preparing and submitting the IEE or EIA report (as necessary) to the Environmental Conservation Department, Ministry of Natural Resources and Environmental Conservation;
- (ix) in preparing environmental safeguards documentation, refer to the requirements of ADB's Safeguard Policy Statement (2009), the environment safeguards source book, the general, water and sanitation, waste management facilities, and other relevant Environment, Health and Safety guidelines to scope key issues to be addressed and to identify appropriate measures and standards for adoption including drinking water standards for the new water intake, wastewater treatment discharge standards, and design standards for the sanitary landfill including lining and set back;
- (x) carry out an audit and assessment including ecological and heritage experts if project components are in proximity to critical habitat or physical cultural resources, including appropriate quantification of impacts, that site-specific mitigation measures are developed, that the EIA or IEE is informed by comprehensive baseline surveys of the ecology, water quality, air and noise, cultural resources etc., that the location of the project components seeks to avoid sensitive ecological habitats, or physical cultural resources that may be present, adopts adequate set backs from rivers, lakes, dense urban areas, individual properties, etc.
- (xi) prepare an environment management plan (EMP) per the ADB's Safeguard Policy Statement (2009) and its related appendices, as a result of the EIA or IEE process for the management, mitigation, and monitoring of all identified impacts; and provide estimated costs to be integrated in the project costs and institutional mechanisms for implementation. Specific environment enhancement and improvement measures (above and beyond the project components themselves) need to be identified and costed as co-benefits of the project;
- (xii) recommend a grievance redress mechanism (GRM) to handle complaints in an effective manner;
- (xiii) identify capacity building needs for skill enhancement on environment aspects for the executing and implementing agencies to be integrated in the project's institutional and capacity strengthening plan;
- (xiv) review the government's requirements and process for environmental clearance, assist the executing and implementing agencies in securing environmental clearance certificates for each project component as required by the government, and prepare necessary information to comply with ADB and government guidelines as per the project processing schedule; and
- (xv) recommend (a) measures to safeguard the environment before, during, and after implementation of the project; (b) mitigation measures and the monitoring program,

including cost implications and an institutional setup for undertaking the program; and (c) responsible agency for environmental monitoring during project implementation. Based on this initial assessment and feasibility study provide environment inputs to the terms of reference for the project management and implementation support consultant engaged under the ensuing loan project.

8. Social Safeguard (Involuntary Resettlement and Indigenous Peoples)

12. The consultant, together with the executing and implementing agencies, will prepare a resettlement plan (RP) and ethnic minority development plan in accordance with ADB's Safeguard Policy Statement (2009). Expected outputs include (i) filled in checklists for involuntary resettlement and Indigenous Peoples along with the project categorization; (ii) RP and Indigenous Peoples/ethnic minorities development plan, as required; (iii) summary RP and Indigenous Peoples/ethnic minorities development plan; (iv) social safeguards due diligence report where the land acquisition has already been completed and the compensation has already been made; and (v) inputs to the relevant sections in the loan documentations. Safeguard categorization for involuntary resettlement and indigenous peoples are currently considered B and C, respectively. The consultant will:

- (i) assess national and regional laws and regulations on land acquisition and resettlement; present comparison and gap analysis; and provide measures to address gaps;
- (ii) orient the executing and implementing agencies on ADB's safeguard policy requirements and procedures, and assess the national policy and legal framework for resettlement if any, and propose measures to bridge any gap between ADB and the national policies;
- (iii) conduct consultations with project affected households; carry out census of potentially affected households and inventory of their assets; record impacts on government, private, and communal structures and facilities; carry out sample socio-economic survey of affected households; undertake replacement cost survey; and conduct workshops to present draft and final RP to the local authorities and affected households. The RP must include city level social impact assessment of the affected people, land, assets, and occupations. Identify potential impoverishment risks and vulnerable groups, including those severely affected through loss of land, those with low income, and others (e.g., disabled, elderly, ethnic minorities, unemployed, illiterate, women, and children);
- (iv) determine and document in the RP the extent to which the project design has avoided or minimized land acquisition and displacement of people and businesses;
- (v) define categories for impact and compensation eligibility of affected people (registered and unregistered) losing land, housing, and businesses; and prepare an entitlements matrix based on national laws and regulations, and ADB's Safeguard Policy Statement (2009) covering compensation and other assistance for all types of impacts to achieve full replacement for lost assets, income, and livelihoods (direct and indirect);
- (vi) identify compensation and rehabilitation options; develop livelihood economic rehabilitation³ and improvement programs in consultation with affected people;

³ In subprojects where construction of infrastructure in the new areas result in farmers losing all their arable land, in such cases the livelihood restoration should be designed assuming that the farmers would suffer total land loss.

identify options for agricultural improvement and benefit sharing arrangements; identify training needs of the affected people based on age group and existing skills, and develop skill training programs to help them secure jobs; make an assessment of the employment opportunities available and ensure the affected people get access to these job opportunities; and make an assessment of the social security benefits and support that will be made available to the affected people;

- (vii) recommend a GMM to handle complaints in an effective manner, and disclose the social safeguard documents and the GRM, in coordination with the environmental safeguard;
- (viii) help the executing and implementing agencies develop an internal and external monitoring and evaluation plan, specifying key indicators of progress, mechanisms for reporting, resource requirements, and database maintenance; prepare terms of reference for independent resettlement monitoring and evaluation; and provide training to the executing and implementing agencies on ADB's resettlement and Indigenous Peoples' planning and implementation requirements
- (ix) determine whether ethnic groups in the area qualify as "Indigenous Peoples" following characteristics described in ADB's Safeguard Policy Statement (2009); determine whether Indigenous Peoples will be physically displaced; and determine whether impacts, if any, are principally resettlement in nature. Based on the assessment, determine whether a combined ethnic minority development and resettlement plan (EMDP-RP) will be sufficient to address Indigenous Peoples issues or not; and carry out any further Indigenous People-targeted surveys to prepare a separate EMDP if required;
- (x) review and assess the capacity of the responsible institutions to plan, update, and implement the RP; recommend an institutional strengthening strategy, and/or formation and training of a resettlement unit within the executing and implementing agencies, if required;
- (xi) ensure adequate investigations (conduct field visits as appropriate) and consultations with affected persons;
- (xii) ensure overall project compliance with ADB's involuntary resettlement and indigenous peoples safeguards, and summarize social analysis results (e.g., resettlement plans, indigenous peoples development plan) into a summary poverty reduction and social strategy with recommendations for involuntary resettlement and indigenous peoples, enhancing existing project social impact reports, where appropriate;
- (xiii) conduct a social safeguards due diligence study on the affected people whose land has already been acquired (in anticipation of ADB funding), compensation already paid, and the land has already been in the possession of the relevant local government; and
- (xiv) incorporate all mitigation measures into the cost estimates of the proposed components.

9. Institutional Analysis and Capacity Strengthening

13. The consultant will review the existing institutional framework for urban development and management, assess the institutional capacity of the executing and implementing agencies to

undertake the roles that they have been assigned under the project, prepare project implementation arrangements, and prepare institutional and capacity strengthening programs. The consultant will:

- (i) identify key stakeholders, local administration structures, and relationships among key urban institutions at the Union, Region, and City levels, along with policies, regulations, strategies;
- (ii) identify policy, institutional, financial, and human resource bottlenecks that constrain effective urban planning, development, and management, and environment improvement;
- (iii) recommend an institutional framework necessary for efficient urban management with clearly defined responsibilities, required qualification of personnel, and budget allocation and flow of funds;
- (iv) identify an implementing agency, project implementation units, and O&M agencies after project completion for each project component considering the capacities of concerned departments of the Regional and City governments, and prepare realistic institutional arrangements for project implementation;
- (v) assess the managerial, technical, and administrative capacity of the executing and implementing agencies and other relevant agencies; and suggest remedial action plan to build their capacities to minimize procurement and financial management risks;
- (vi) review existing training programs; identify gaps and needs for managerial, technical, financial, and administrative training; and provide suggestions to improve governance and management, and to strengthen capacity for urban service provision, effective sector regulation, and environment improvement;
- (vii) prepare an institutional analysis addressing all the above issues, and provide recommendations for institutional and policy reforms to improve urban management and environment improvement;
- (viii) design and prepare capacity strengthening programs for the executing and implementing agencies and other relevant agencies to strengthen their capacity to efficiently implement, operate, and maintain the facilities and techniques to be introduced under the project; and to ensure the sustainability of project benefits; and
- (ix) review existing policies, guidelines, and legal frameworks for public private partnership (PPP) in urban service provision; review ongoing and/or planned urban infrastructure improvements using PPP, if any; propose measures to promote PPP in urban service provision; and identify potential areas for PPP in the project cities.

10. Social Analysis and Gender Development

14. The consultant, together with the executing and implementing agencies, will prepare the summary poverty reduction and social strategy (SPRSS), gender action plan (GAP), stakeholder communication strategy, and participation plan⁴ in accordance with ADB's *Poverty Reduction Strategy* (2004), *Policy on Gender and Development* (1998), *Social Protection Strategy* (2001),

⁴ Participation plan is required where social safeguard issues are considered significant and where participation of individuals and groups is considered necessary for delivery of project outcome.

and *Public Communications Policy* (2011); and as guided by ADB's *Handbook on Poverty and Social Analysis* (2012). The consultant will:

- (i) conduct a socioeconomic survey guided by the particular poverty, social, and gender issues identified in the initial poverty and social analysis to confirm beneficiary needs, demands, capacities, constraints, willingness to participate in the project, time spent in collecting and/or purchasing and/or managing drinking water, sanitation and solid waste management by sex, and suitability of the sites; and prepare socioeconomic and poverty profiles of Mandalay to include population, income, occupation, education, and health conditions, to be disaggregated by income group, ethnic group, and sex, including willingness to pay (demand) and affordability (social inclusion) for proposed improved services. The survey results will serve as the baseline for poverty and social performance measures which promote social inclusion, gender equity, and women's empowerment; and the monitoring indicators which track the distribution of project benefits, particularly for vulnerable and marginalized groups;
- (ii) review local government policies, strategies, and programs for poverty reduction and regional economic development; and discuss the poverty and social dimensions of the proposed project with the executing and implementing agencies and relevant development partners to identify scope for complementary activities and leverage of existing social development assistance and approaches;
- (iii) conduct a stakeholder analysis to identify relevant stakeholders; explore stakeholders' interests and priorities, and perception of problems including satisfaction with the level and quality of urban services and efficiency of local administration;
- (iv) prepare a poverty and social analysis, using participatory methods in accordance with the draft *ADB Handbook for Poverty and Social Analysis* and *ADB's Guidelines for Incorporation of Social Dimensions in Bank Operations* to assess the type and significance of the project impacts on the poor, women, and other vulnerable groups; and prepare appropriate mitigation measures and beneficiary enhancement measures for inclusion in the project's social development action plans (SPRSS, GAP, stakeholder communication strategy, participation plan, and design and monitoring framework (DMF));
- (v) prepare SPRSS, which includes special enhancement and necessary mitigation measures with target beneficiary groups, implementation arrangements, estimated budget, and monitoring indicators based on the poverty and social analysis;
- (vi) conduct a gender analysis and confirm project gender categorization in context of project interventions and project beneficiary group(s), prepare a gender action plan to mainstream gender and to ensure adequate women's representation and participation in decision-making processes and benefit capture of project interventions, collect sex-disaggregated data to inform gender specific measures used in the project and gender targets in the DMF, and develop mitigation measures to address potential constraints in access to benefits from project interventions and enhancement measures to support gender equity and empowerment;
- (vii) prepare a stakeholder communication strategy, informed by the stakeholder analysis, which outlines key messages and channels for communications to be

communicated for project success, which stakeholders are responsible for delivery, when during the project cycle, and with what budgeted resources;

- (viii) prepare a participation plan which outlines activities to be undertaken for stakeholder engagement, throughout the project cycle, to ensure participation in project identification, decision-making, O&M, monitoring and evaluation, as relevant for successful project performance; and
- (ix) develop recommendations for specific project activities and processes to address the social and/or poverty issues that have been identified, including, but not limited to, institutional and implementation arrangements, choice of technologies, financial terms of access to project interventions, and skills acquisition and employment opportunities.

11. Project Performance Monitoring System

15. The consultant will undertake a structured problem analysis, prepare a problem tree, and derive a DMF in consultation with the government agencies and concerned project stakeholders. The DMF will aim to facilitate (i) conceptualization of the proposed project design; (ii) monitoring of the project implementation; and (iii) evaluation of project benefits and impacts, emphasizing enhanced participation of beneficiaries and stakeholders. The consultant will develop a project performance monitoring system disaggregated by sex that includes the content and format of the progress reports, and ensures that the beneficiaries also undertake their own monitoring and evaluation.

C. Team Composition and Qualification Requirements

16. The firm and its associate(s) should have experience in project preparation in (i) urban development sector particularly in water supply, wastewater management and sanitation, solid waste management, and urban transport; and (ii) Myanmar and other Greater Mekong Subregion (GMS) countries.

17. Table 1 summarizes consulting services inputs for the TA.

Table 1: Consulting Services Inputs

Expertise	Minimum Requirements	Inputs
International (Key Experts)		22.0
1. Municipal engineer / Team leader	15 years of professional experience in municipal / civil engineering	5.0
2. Water supply and wastewater management engineer / procurement specialist	10 years of professional experience in water supply / wastewater management / procurement	3.0
3. Solid waste management specialist	10 years of professional experience in solid waste management	2.0
4. Urban transport specialist	10 years of professional experience in urban transport	2.0
5. Financial specialist	10 years of professional experience in municipal finance / financial management / financial analysis	2.0
6. Economist	10 years of professional experience in economic analysis	2.0
7. Institutional development	10 years of professional experience in institutional analysis and development	1.5

8. Environment / climate change specialist	10 years of professional experience in environmental safeguard and climate change adaptation and mitigation	1.5
9. Social development and gender specialist	10 years of professional experience in social analysis / gender development	1.5
10. Social safeguard specialist (IR and IP)	10 years of professional experience in social safeguard (involuntary resettlement and indigenous peoples)	1.5
National (Key Experts)		26.0
1. Civil engineer / Deputy team leader	5 years of professional experience in civil engineering	6.0
2. Water supply engineer	5 years of professional experience in water supply	4.0
3. Sanitation engineer	5 years of professional experience in sanitation and wastewater management	4.0
4. Solid waste management specialist	5 years of professional experience in solid waste management	4.0
5. Urban transport specialist	5 years of professional experience in urban transport	4.0
6. Municipal finance specialist	5 years of professional experience in municipal finance / financial management / financial analysis	4.0
National (Non-Key Experts)		18.0
1. Urban planner	5 years of professional experience in urban planning	2.0
2. Economist	5 years of professional experience in economic analysis	3.0
3. Institutional development specialist	5 years of professional experience in institutional analysis and development	2.0
4. Environment specialist	5 years of professional experience in environmental safeguard	3.0
5. Social development and gender specialist	5 years of professional experience in social analysis / gender development	3.0
6. Social safeguard specialist (IR and IP)	5 years of professional experience in social safeguard (involuntary resettlement and indigenous peoples)	3.0
7. Procurement specialist	5 years of professional experience in procurement planning and management	2.0

D. Reporting Requirements and Time Schedule for Deliverables

18. The consultant will submit the following reports/deliverables:

- (i) an inception report summarizing detailed work program, personnel schedule, methodology, preliminary DMF, preliminary project components, and a draft table of content for the subsequent reports within 6 weeks after the commencement of the services;
- (ii) a strategic planning report summarizing the sector and subsector analysis and proposed criteria to identify priority components within 15 weeks after the commencement of the services;

- (iii) an interim report summarizing the refined project rationale, priority components, and assessment of design alternatives within 25 weeks after the commencement of the services;
- (iv) a draft final report including draft PAM, DMF, EIAs and/or IEEs, and RPs within 40 weeks after the commencement of the services. ADB and the government will provide their comments on the draft final report within 1 month from the date of receipt of the draft final report; and
- (v) a final report including PAM, DMF, EIAs and/or IEEs, and RPs within 4 weeks after the receipt of the comments from ADB and the government on the draft final report. The final report shall take into consideration the comments of ADB and the government. A 500-word (maximum) knowledge summary will be included in the front section of the final report.

19. Reports need to address all aspects of this TOR to the level of detail appropriate for the given stage of the TA. For each report, the consultant will submit two hard copies in English to ADB and eight hard copies in English to the government. In addition, the consultant will prepare CDs containing the final report and submit a CD to ADB and four CDs to the government. Three workshops will be organized to discuss the key TA findings participated by all stakeholders following the submission of the inception, interim, and draft final reports.

20. In addition to these reports, the consultant will submit ADB with all relevant data and information obtained during the TA implementation; and supporting documents, calculations, and drawings produced by the consultant including the Excel spreadsheet cost estimates and financial analysis models. The consultant will also submit a monthly summary of the consultant's inputs (soft copy) to ADB within one week after the end of each month.

E. Client's Input and Counterpart Personnel

21. The MCDC will provide an office for the consultant in Mandalay. The MCDC will provide (i) all relevant documents, data, statistics, reports, and maps; (ii) qualified counterpart staff, including their field per diem and field transportation; (iii) office accommodation and office furniture, including desks, chairs, and communication facilities; and (iv) logistic assistance for the workshops and seminars, including venue provision and identifying and sending invitations to participants.