

## FINANCIAL ANALYSIS

- Table 1 summarizes the project components and the financial due diligence undertaken.

**Table 1: Financial Due Diligence Undertaken**

Components	Investment Cost (\$ million)	EA/IA	Fiscal analysis	Tariff Calculation to cover the Costs	Affordability analysis
Improved water supply system	52.11	MRG/MCDC	Yes	Yes	Yes
Improved wastewater and drainage management system	62.28	MRG/MCDC	Yes	Yes	No

MCDC = Mandalay City Development Committee, MRG = Mandalay Regional Government.

Notes: Investment cost includes contingencies, taxes and duties, and financing charges during implementation.

The third component is urban services management capacity development.

Source: Asian Development Bank.

- The Mandalay Regional Government (MRG) will be the executing agency and the Mandalay City Development Committee (MCDC), a government agency which was established in 1955 to undertake various city development activities including the construction and operation of the city's water and sanitation facilities, will be the implementing agency. The proceeds of the two loans (one Asian Development Fund loan from the Asian Development Bank [ADB] and one concessional loan from Agence Française de Développement) will be onlent via the Ministry of Finance (MOF) to the MCDC in dollars and on the same terms as the ADB loan. Based on the most recent discussions with the MOF, the MCDC is expected to take the forex risk and will need to significantly increase revenues to do so. Based on these considerations and consistent with ADB's Financial Management, Cost Estimates, Financial Analysis and Financial Performance Indicators, a fiscal analysis and evaluation of the MCDC was undertaken.<sup>1</sup>

- The MCDC's financial stability and ability to cover the additional costs of the project require urgent and significant fiscal reforms, including (i) increasing water tariff revenues and establishing a wastewater tariff, (ii) optimizing fiscal revenues, and (iii) rationalizing spending. MCDC's overall operating margin has remained positive although declining in recent years because of rapidly increasing operating expenses. The analysis also considered the recurring costs of the two subprojects and the potential for increased water and wastewater revenue generation through water tariff increases, a new wastewater tariff, and measures such as metering, and increasing other fiscal revenues (e.g., housing tax). Affordability analysis was also undertaken with regard to the proposed water and wastewater tariffs.

- Fiscal analysis.** The MCDC's fiscal performance was analyzed to assess its capacity to service all incremental recurrent costs related to the project (i.e., debt service on the ADB and AFD loans, and operation and maintenance [O&M] costs for the proper operation and management). Table 2 summarizes the MCDC's financial situation for the fiscal years FY2012–FY2014 and its FY2015 budget.<sup>2</sup> The MCDC's expenditures and revenues are classified as operating or capital investment for accounting purposes. During FY2012–FY2015, current revenues were 63% of total revenues and capital investment revenues were 37%, and operating

<sup>1</sup> ADB. 2014. Financial Management, Cost Estimates, Financial Analysis, and Financial Performance Indicators. *Operations Manual*. OM G2. Manila.

<sup>2</sup> Data from reports prepared by MCDC's Finance Department. MCDC's accounting classifies expenditures and revenues as operating and capital, by economic category and department, on a cash basis (actual proceeds received and invoices paid in the period, based on bank reconciliation) rather than accrual accounting.

expenses were 49% of total expenses and capital investment expenses 51%. The MCDC did not need any financial transfers from the union government during the period.

**Table 2: Total Revenue and Expenditure, FY2012–FY2014**

Kyats in Million	FY 2011–2012 Actual	FY 2012–2013 Actual	FY 2013–2014 Actual	FY 2014–2015 Revised Estimate	Average Annual Growth (2011–2014)	% Total Current Revenue (2013–2014)
Total	45 253	36 675	46 710	75 177	1%	100
Revenues						
Total	36 626	35 354	45 958	74 933	8%	98
Margin (Revenues less Expenditures)	8 627	1 321	753	244	-56%	2

FY = fiscal year.

Source: Asian Development Bank.

5. **Current revenues and expenditures.** The MCDC's current revenues (Table 3) have not increased as fast as operating expenses; tariffs and tax rates and shared taxes from the union government have remained low. The MCDC projects a balanced budget in FY2015, but the situation has been deteriorating rapidly due to significant increases in current expenses in FY2012-2014 because of (i) application of the national social policy for wages and salaries, (ii) increased electricity rates, and (iii) sharp increase in repairs and maintenance with more infrastructure and facilities. The budget has likely been balanced by keeping O&M below what would be required for proper O&M, and by underinvesting.

**Table 3: Sources of Current Revenues, FY2012–FY2014**

Source of Current Revenues	% of Current Revenues
User fees and indirect taxes: tolls collected at four toll gates at city limits (23% of current revenues), billboards tax revenues (8%), various licenses, etc.	51
Revenues on assets (rental charges on land and building)	25
Direct taxes (housing/property, lighting and dividend tax; income tax collected by union government from businesses in the city)	<10
Tariffs for services such as water supply and garbage collection	6

Source: Asian Development Bank.

6. **Capital investment revenues and expenditures.** Capital investment revenues including land sales and leases of land plots to households and to private investors for commercial or mixed development, have been relatively high. Expenditures reached MK58 billion for FY2012-2014, with land sales covering over 80%.

7. **Water supply and sanitation department.** The city's water supply and sanitation facilities are operated by the MCDC water supply and sanitation department (WSSD). Relatively low water tariffs plus other water service revenues only cover operating expenses and 25% of capital investment expenses. Operating results deteriorated sharply in FY2014 as electricity cost rose. Tariffs were raised in April 2015 (FY2016) with a 55% increase in the volumetric domestic tariff and different tariffs for commercial and industrial customers and for domestic and international users. However, MCDC's new tariff grid did not use the flat rate to compensate non metered users, and it confirmed exemptions for monastery and military users, unlike the tariff grid set up by the Yangon City Development Committee in 2013.

8. Since FY2010, the gap between the WSSD's revenues and expenses operations has been significant and increasing as capital investment expenditures have increased (Table 4). In FY2014, total expenses were 12% of those of the MCDC. This will increase as a result of the project, especially as MCDC will be shoulder forex risk based on recent discussions with the MOF. The MCDC will have to increase water tariffs, implement new wastewater tariffs, and generate other revenues to cover a significant portion of debt service.

**Table 4: FY2008–FY2014 Income Statements Water Supply and Sanitation Department**

<i>Kyats thousands</i>	FY 2008-2009 Actual	FY 2009-10 Actual	FY 2010-11 Actual	FY 2011-12 Actual	FY 2012-13 Actual	FY 2013-14 Actual	FY 2014-15 Revised Estimates	Average annual growth 2008-2014	% Total current revenue (2013-14)
<b>Total own revenue</b>	<b>1 122 766</b>	<b>1 089 654</b>	<b>1 118 493</b>	<b>1 239 249</b>	<b>1 260 069</b>	<b>1 347 851</b>	<b>1 325 297</b>	<b>4%</b>	<b>100%</b>
- Water tariff income (1)	919 010	899 205	906 675	951 037	937 356	969 932	930 000	1%	74%
- Water connection charge (2)	150 397	147 614	160 193	226 358	199 883	247 225	285 000	10%	16%
- Night-soil collection(3)	13 511	12 552	14 527	19 513	16 568	17 205	18 000	5%	1%
- Other water income (4)	39 848	30 283	37 098	42 341	106 262	113 489	92 297	23%	8%
<b>Total expenditure</b>	<b>966 872</b>	<b>1 364 985</b>	<b>3 238 915</b>	<b>3 652 461</b>	<b>3 248 645</b>	<b>6 368 355</b>	<b>2 816 773</b>	<b>46%</b>	<b>258%</b>
<b>Operating expenditure</b>	<b>592 872</b>	<b>629 650</b>	<b>730 240</b>	<b>889 798</b>	<b>1 093 038</b>	<b>1 706 064</b>	<b>2 816 773</b>	<b>24%</b>	<b>87%</b>
- Salaries	81 008	89 653	126 256	138 861	217 779	280 621	246 246	28%	17%
- Travel expenses	252	133	61	57	226	500	236	15%	0%
- Electricity				327 564	473 722	799 555	1 959 000		
- Material and labor (including daily workers)	435 447	432 285	480 373	301 113	212 900	258 119	195 791	-10%	17%
- Maintenance	76 165	107 305	123 550	114 703	185 917	352 446	365 500	36%	15%
- Other expenditure (Lab)	0	274	0	7 500	2 494	14 823	50 000		0%
<b>Capital investment expenditure</b>	<b>374 000</b>	<b>735 335</b>	<b>2 508 675</b>	<b>2 762 663</b>	<b>2 155 607</b>	<b>4 662 291</b>		<b>66%</b>	<b>171%</b>
- Construction of a reservoir	63 885	155 198	292 024	1 280 111	96 782	272 184		34%	8%
- Construction of sewage network	0	0	0	215 192	637 281	1 852 479			51%
- Machinery & equipment	310 115	580 137	2 216 651	956 493	414 325	941 000		25%	33%
- Other expenditure (Lab)				310 867	1 007 219	1 596 628			80%
Cost recovery (coverage ratio applied to operating expenditure)	<b>1.89</b>	<b>1.73</b>	<b>1.53</b>	<b>1.39</b>	<b>1.15</b>	<b>0.79</b>	<b>0.47</b>		
Full cost recovery (coverage ratio applied to total expenditure)	<b>1.16</b>	<b>0.80</b>	<b>0.35</b>	<b>0.34</b>	<b>0.39</b>	<b>0.21</b>	<b>0.47</b>		
Tariff proceeds/HH per month (in USD)	<b>1,1</b>	<b>1,1</b>	<b>1,1</b>	<b>1,2</b>	<b>1,2</b>	<b>1,2</b>	<b>1,2</b>		

Source: MCDC - Revenue department

(1) not included in the Water and Sanitation Department Budget, because of the tariff collection mechanism.

(2) Average water connection charge: 100,000 Ks/HH (depends on the length of the pipe), and the number of new HH connected every year is estimated up to 1000.

(3) Night-soil collection: pit-latrines emptying. Directly managed by WSD

(4) Income from fines levied on illegal connections (30,000 Ks/HH), costs of damage to meters and other rules violations.

Source: Asian Development Bank

9. **Water supply cost-recovery tariffs.** The current weighted average tariff is MK80 per cubic meter for households and other users (implemented in April 2015). Despite the projected benefits of reduced commercial and physical nonrevenue water, the tariffs required for cost recovery of O&M and debt service (loan interest and principal amortizations including the impact of forex movements) would be significantly higher. To ensure affordability of water tariffs, it is recommended that principal amortizations be covered by other revenues of the MCDC.

**Table 5: Water Supply Subproject Cost-Recovery Tariff Scenarios**  
(MK per cubic meter, 5-year average)

Cost-Recovery Scenario	2016–2020	2021–2025	2026–2030	2031–2035
Partial cost recovery (O&M+interest)	213	239	268	289
Full cost recovery (O&M+interest+principal)	213	305	390	435

O&M = operation and maintenance.

Source: Asian Development Bank.

10. **Wastewater and drainage operations cost-recovery tariffs.** Wastewater revenue is currently limited to the fees paid by households with septic tanks for night soil collection and only cover 10% of the operating budget of the WSSD's sanitation section. O&M costs were projected based on the volume of sewage treated and costs including chemicals, electricity based on the new electricity tariffs approved in March 2014, and maintenance costs for the new assets. It is expected that the MCDC will establish a wastewater tariff and add this to the water bill (e.g., equal to 10%–15% of the water bill by project completion, and then increasing to 25% in 2033 and 40% in 2035) to cover 50% of O&M plus interest, to ensure affordability of the combined water and wastewater bill. The MCDC will have to generate additional revenues, such as an additional surcharge to the housing tax for drainage, similar to the surcharges already collected for street lighting (2.25% of housing tax) and solid waste (3.00%).

**Table 6: Wastewater and Drainage Subproject Cost-Recovery Tariff Scenarios**  
(MK per cubic meter, 5-year average)

Cost-Recovery Scenario	2016–2020	2021–2025	2026–2030	2031–2035
Partial cost recovery (O&M+interest)	102	147	165	162
Full cost recovery (O&M+interest+principal)	102	189	237	235

O&M = operation and maintenance

Source: Asian Development Bank.

11. **Affordability of water and wastewater tariffs for households.** Preliminary affordability analysis shows that lowest-income households in Mandalay (lowest decile: MK85,656 as average monthly income) could be charged up to MK1,000 per month/household (flat rate) for 40 liters/capita/day (equivalent to 6 cubic meter average consumption per month per household), the lowest consumption and invoice contemplated in the new pricing. Under this assumption, the flat water rate plus the proposed wastewater fee (e.g., equal to 10%–15% of the water bill) would represent 1.32% of the monthly average household income, which is lower than the threshold of financial affordability, generally assumed to be 4.00%. This indicates there is some room for the MCDC to even increase the flat water rate. By comparison, the new water pricing approved in January 2013 by the Yangon City Development Committee features a flat rate for domestic users of MK3,000 per month (individual housing) and MK1,800 for compounds and residences.

12. **Fiscal projections.** Loan proceeds will be onlent to the MCDC and foreign exchange risk will be assumed by the MCDC. To ensure the MCDC's financial sustainability, the MCDC, MRG, and the union government will have to take measures to increase the MCDC's current revenues, for example through water and wastewater tariff increases and updating and/or increasing the rental value of properties, which will generate more housing and lighting tax revenues, and implementing tighter operating cost controls. The fiscal analysis undertaken assumes that to ensure the MCDC has sufficient funds to cover operating expenses and debt service, the MCDC, MRG, and the union government will jointly undertake to balance the MCDC's budget through increased financial support to the MCDC, such as through additional transfers from the MRG and/or the union government, as required. Based on these assumptions, the MCDC's general budget is properly balanced over the projection period, and its operating surplus reaches 15% of the current revenues in FY2023, 20% in FY2026, and 25% in FY2030 (Table 7). This would even allow the MCDC to take on additional debt in 2025.

13. **Proposed loan covenants to address concerns about financial sustainability.** The following have been discussed with the government:

- (i) **Tariff roadmap for water and wastewater.** A roadmap has to be established and implemented by the MCDC (covered by the MRG), targeting full cost recovery for water

supply (tariff revenues to cover O&M plus debt service), and partial cost recovery for wastewater (about 50% of O&M plus debt service).

- (ii) **Fiscal reforms at Mandalay City Development Committee.** This includes (a) updating the rental values to increase housing, lighting, and garbage taxes as soon as possible (see projections for expected amount of proceeds to collect), and (b) restraining spending growth including O&M for operations other than water and wastewater.
- (iii) **Corporatization of Mandalay City Development Committee's water supply and sanitation department.** The MCDC has committed to seriously consider corporatizing its water and wastewater department, with the support of the capacity development program under the project.

**Table 7: Municipal Financial Projections Balanced Budget, based on balancing transfers to the Mandalay City Development Committee from the Union Government**

**MANDALAY CITY DEVELOPMENT COMMITTEE - GENERAL BUDGET INCLUDING BALANCING TRANSFERS**

MK million (nominal value)	Actual	Est.	Projections										
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
<b>CURRENT REVENUES</b>	<b>28,359</b>	<b>34,372</b>	<b>36,367</b>	<b>40,734</b>	<b>43,140</b>	<b>47,084</b>	<b>51,788</b>	<b>54,988</b>	<b>58,192</b>	<b>65,471</b>	<b>70,426</b>	<b>74,697</b>	<b>81,884</b>
<b>LOCAL DIRECT TAXES</b>	<b>1,630</b>	<b>1,803</b>	<b>1,814</b>	<b>4,116</b>	<b>4,292</b>	<b>5,843</b>	<b>7,991</b>	<b>8,455</b>	<b>8,741</b>	<b>11,760</b>	<b>12,184</b>	<b>12,637</b>	<b>15,749</b>
- Housing tax (Property tax)	991	990	1,025	2,184	2,277	3,100	4,240	4,486	4,638	6,240	6,465	6,705	8,357
- Lighting tax	294	290	304	924	964	1,312	1,794	1,898	1,962	2,640	2,735	2,837	3,536
- Solid waste tax	345	523	485	1,008	1,051	1,431	1,957	2,071	2,141	2,880	2,984	3,095	3,857
<b>LOCAL INDIRECT TAXES</b>	<b>14,149</b>	<b>19,020</b>	<b>20,247</b>	<b>21,566</b>	<b>22,983</b>	<b>24,508</b>	<b>26,149</b>	<b>27,917</b>	<b>29,824</b>	<b>31,880</b>	<b>34,101</b>	<b>36,500</b>	<b>39,094</b>
- Toll gates & ferry boat taxes	6,810	12,000	12,836	13,731	14,688	15,711	16,806	17,977	19,230	20,570	22,003	23,536	25,176
- Advertising & billboard taxes	2,357	1,575	1,779	2,010	2,271	2,566	2,899	3,276	3,701	4,181	4,724	5,337	6,030
- Land & building rent	4,983	5,445	5,632	5,825	6,024	6,231	6,444	6,665	6,893	7,129	7,374	7,626	7,888
<b>SHARED TAXES</b>	<b>661</b>	<b>750</b>	<b>803</b>	<b>859</b>	<b>919</b>	<b>983</b>	<b>1,052</b>	<b>1,126</b>	<b>1,204</b>	<b>1,289</b>	<b>1,379</b>	<b>1,475</b>	<b>1,579</b>
<b>BALANCING TRANSFERS</b>			<b>1</b>	<b>15</b>	<b>59</b>	<b>119</b>	<b>183</b>	<b>257</b>	<b>328</b>	<b>1,542</b>	<b>2,813</b>	<b>3,137</b>	<b>3,467</b>
<b>OTHERS (excluding WS/WW)</b>	<b>11,919</b>	<b>12,799</b>	<b>13,503</b>	<b>14,178</b>	<b>14,887</b>	<b>15,631</b>	<b>16,413</b>	<b>17,233</b>	<b>18,095</b>	<b>19,000</b>	<b>19,950</b>	<b>20,947</b>	<b>21,994</b>
<b>OPERATING EXPENDITURES</b>	<b>26,004</b>	<b>35,189</b>	<b>38,612</b>	<b>37,365</b>	<b>40,520</b>	<b>44,004</b>	<b>47,851</b>	<b>50,304</b>	<b>52,889</b>	<b>55,613</b>	<b>58,486</b>	<b>61,516</b>	<b>64,714</b>
<b>SALARY AND WAGES</b>	<b>4,788</b>	<b>6,329</b>	<b>6,889</b>	<b>7,499</b>	<b>8,164</b>	<b>8,890</b>	<b>9,681</b>	<b>10,165</b>	<b>10,674</b>	<b>11,207</b>	<b>11,768</b>	<b>12,356</b>	<b>12,974</b>
<b>LABOR &amp; SERVICE CHARGES</b>	<b>2,164</b>	<b>3,393</b>	<b>3,903</b>	<b>4,488</b>	<b>5,161</b>	<b>5,935</b>	<b>6,826</b>	<b>7,227</b>	<b>7,658</b>	<b>8,121</b>	<b>8,620</b>	<b>9,157</b>	<b>9,736</b>
<b>REPAIRS &amp; MAINTENANCE</b>	<b>12,933</b>	<b>19,044</b>	<b>20,948</b>	<b>18,024</b>	<b>19,326</b>	<b>20,759</b>	<b>22,335</b>	<b>23,452</b>	<b>24,624</b>	<b>25,856</b>	<b>27,148</b>	<b>28,506</b>	<b>29,931</b>
- Building	320	480	528	581	639	703	773	812	852	895	940	987	1,036
- Roads	7,240	10,041	11,045	12,150	13,365	14,701	16,172	16,980	17,829	18,721	19,657	20,639	21,671
- Vehicles	240	242	267	293	323	355	390	410	430	452	475	498	523
- Others	5,133	8,280	9,108	5,000	5,000	5,000	5,000	5,250	5,513	5,788	6,078	6,381	6,700
<b>OTHERS (excl. WS/WW/SW)</b>	<b>6,119</b>	<b>6,423</b>	<b>6,873</b>	<b>7,354</b>	<b>7,869</b>	<b>8,419</b>	<b>9,009</b>	<b>9,459</b>	<b>9,932</b>	<b>10,429</b>	<b>10,950</b>	<b>11,498</b>	<b>12,072</b>
<b>OPERATING SURPLUS</b>	<b>2,356</b>	<b>-818</b>	<b>-2,245</b>	<b>3,369</b>	<b>2,619</b>	<b>3,080</b>	<b>3,937</b>	<b>4,684</b>	<b>5,303</b>	<b>9,858</b>	<b>11,940</b>	<b>13,181</b>	<b>17,170</b>
<b>% Operating Surplus / Current Revenues</b>			<b>-6%</b>	<b>8%</b>	<b>6%</b>	<b>7%</b>	<b>8%</b>	<b>9%</b>	<b>9%</b>	<b>15%</b>	<b>17%</b>	<b>18%</b>	<b>21%</b>