



RESTRUCTURING PAPER
ON A
PROPOSED PROJECT RESTRUCTURING
OF
QUITO METRO LINE ONE
APPROVED ON JULY 25, 2013
TO

MUNICIPALITY OF QUITO, MUNICIPIO DEL DISTRITO METROPOLITANO DE QUITO

TRANSPORT
LATIN AMERICA AND CARIBBEAN

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ABBREVIATIONS AND ACRONYMS

BRT	Bus Rapid Transit
CAF	<i>Corporación Andina de Fomento</i> (Andean Development Corporation)
CBA	Cost Benefit Analysis
CPF	Country Partnership Framework
EIB	European Investment Bank
EIRR	Economic Internal Rate of Return
EPMMQ	<i>Empresa Pública Metropolitana Metro de Quito</i> (Quito Metropolitan Public Metro Company)
GoE	Government of Ecuador
GRM	Grievance Redress Mechanism
HITS	Hierarchically Integrated Transit Systems
IADB	Inter-American Development Bank
MDMQ	<i>Municipio del Distrito Metropolitano de Quito</i> (Municipality of the Metropolitan District of Quito)
NPV	Net Present Value
O&M	Operation and Maintenance
PDO	Project Development Objective
PIU	Project Implementation Unit
PLMQ	<i>Primera Línea Metro de Quito</i> (Quito Metro Line One Project)
RAP	Resettlement Action Plan
SCD	Systematic Country Diagnosis
SITP	<i>Sistema Integrado de Transporte de Pasajeros</i> (Integrated Mass Transit System)
TA	Technical Assistance
ToC	Theory of Chance
WHO	World Health Organization



BASIC DATA

Product Information

Project ID P144489	Financing Instrument Investment Project Financing
Original EA Category Full Assessment (A)	Current EA Category Full Assessment (A)
Approval Date 25-Jul-2013	Current Closing Date 31-Dec-2020

Organizations

Borrower Municipality of Quito, Municipio del Distrito Metropolitano de Quito	Responsible Agency Empresa Publica Metropolitana de Metro de Quito
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Project Development Objective (PDO)

Original PDO

The proposed Project development objective (PDO) is to improve urban mobility in the city of Quito serving the growing demand for public transport. The Project will reduce travel times, decrease operational costs of the transport service, improve connectivity, security and comfort of the current system and reduce emissions of pollutants and greenhouse gases.

Summary Status of Financing (US\$, Millions)

Ln/Cr/Tf	Approval	Signing	Effectiveness	Closing	Net		
					Commitment	Disbursed	Undisbursed
IBRD-88890	22-Jun-2018	29-Nov-2018	28-Dec-2018	31-Dec-2020	230.00	199.30	30.70
IBRD-82850	25-Jul-2013	11-Nov-2013	25-Sep-2015	31-Dec-2020	205.00	201.79	3.21

Policy Waiver(s)

Does this restructuring trigger the need for any policy waiver(s)?

No



I. PROJECT STATUS AND RATIONALE FOR RESTRUCTURING

A. EXECUTIVE SUMMARY

1. **The Quito Metro Line One (PLMQ) Project (P144489) is financed by two loans totaling US\$435 million to the Municipality of the Metropolitan District of Quito (MDMQ).** The Board approved the PLMQ on July 25th, 2013 with the amount of US\$205 million of IBRD financing (IBRD-82850) (total estimated costs were US\$1504.94). The PLMQ became effective on September 25, 2015. On June 22nd, 2018, the Board approved a US\$230 million additional financing Loan (IBRD-88890) (total estimated costs were US\$2,014.80) and extension of the loan closing date by two years (until December 31, 2020). The PDO is to improve urban mobility in the city of Quito, serving the growing demand for public transport. The project will reduce travel time, decrease operational costs of the transport service, improve connectivity, security, and comfort of the current system, and reduce emissions of pollutants and greenhouse gases. The IBRD financing is for the main civil works contract (Component 2) and a US\$10 million component to support project implementation (Component 5) (see paragraph 6 for information on the other components).

2. **The proposed restructuring of the project** would include: (i) a 12-month extension of the loan closing date from December 31, 2020, to December 31, 2021, and (ii) changes to the Results and Monitoring framework and Economic Analysis to reflect the negative impact of COVID-19 on demand for the metro, the project outcome. This restructuring does not involve changes on safeguards, nor changes to the Project Development Objective (PDO). There are no audits outstanding. The last audit report for the year ended December 31, 2019, arrived on time on April 30, 2020 and this report was found acceptable to the Bank.

3. **The three main reasons for extending the closing date** include allowing for time to: (i) fully complete the execution of the ongoing civil works contract for the Quito Metro infrastructure and equipment (currently at 96 percent of physical execution); (ii) resolve two ongoing safeguards issues (see paragraphs 7 and 8); and (iii) provide the necessary support to define and implement the operation and maintenance (O&M) model for the PLMQ.

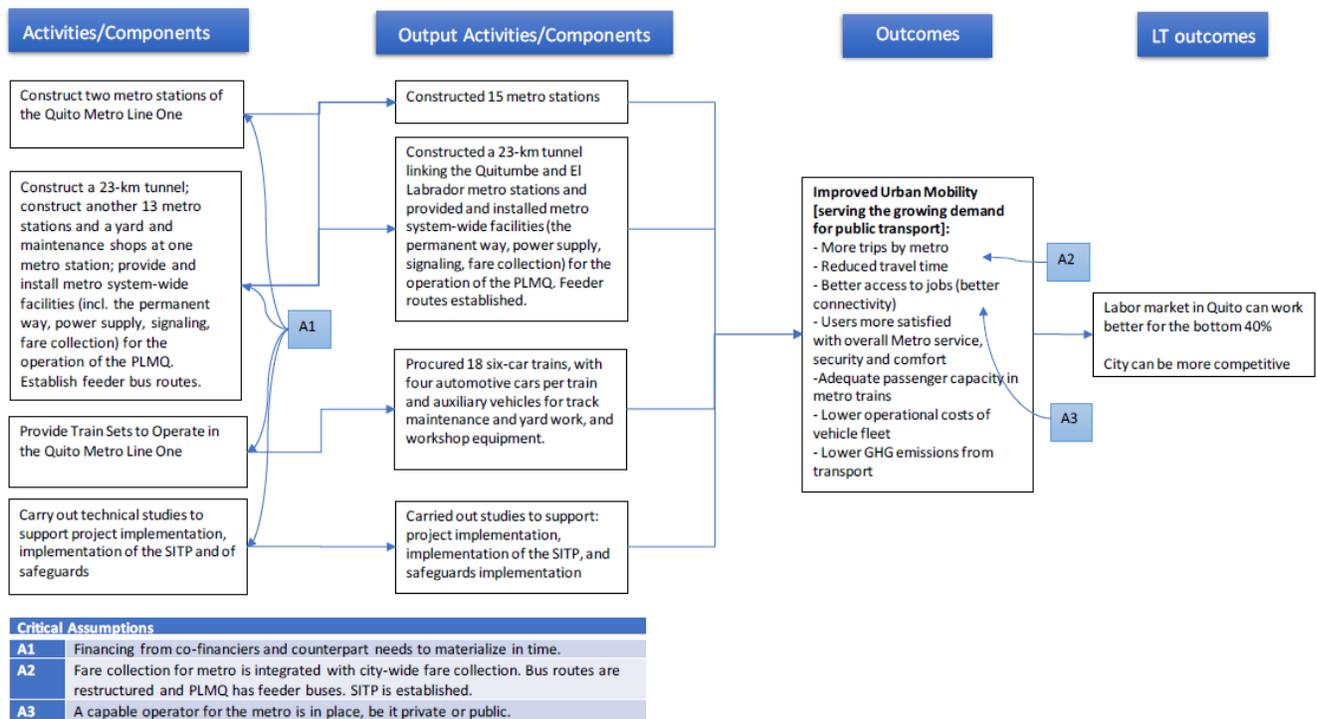
B. PROJECT EXECUTION AND GENERAL STATUS

4. **The Project Development Objective (PDO) remains highly relevant for the Country Partnership Framework (CPF) FY19-23.** Improving urban mobility supports the Ecuador 2018 Systematic Country Diagnostic (SCD) Pillars 3 (Expanding economic opportunities) and 4 (Use of physical and natural capital), and CPF Objectives 1 (Enhance efficiency of public spending) and 7 (Improve resilience to disaster risk and climate change), and has become even more relevant in the context of the COVID-19 pandemic because of its impact on MDMQ's fiscal capacity. The theory of change (ToC), including the assumptions, remains likewise relevant (see below).

5. **The PDO remains achievable but cannot be achieved by the current closing date as certain key activities to operationalize the PLMQ are delayed and require additional technical and financial support.** The remaining key activities include the completion of civil works, the provision and installation of key system-wide facilities and equipment, and establishment of feeder routes – as illustrated under Output Activities/Components in the ToC figure below and explained in more detail in the next paragraph. Delays in implementation arrangements towards the operation of the PLMQ and the negative impact of COVID-19 have jeopardized the achievement of the PDO by the current closing date. Specifically, COVID-19 has negatively affected components 2, 3 and 5 (as explained below). In addition, key critical assumptions of the ToC to support the PDO achievement – such as integrating the PLMQ fare collection with city-wide fare collection, and restructuring of the bus system to provide feeder buses for the PLMQ listed under A2 – have not yet materialized. Only A1- Financing in time has occurred. Assumptions A2- *Integrated fare collection system for SITP* and A3- *Operator in place* are experiencing some delay, which will not happen before the current closing date and require additional support (see the ToC figure below). Due to these factors, the PDO cannot be achieved by the current closing date.



THEORY OF CHANGE



6. **The project has disbursed US\$401.09 million or 92.2 percent of the IBRD loans.** The PIU reports that most of the remaining amount (US\$33.91 million) will be disbursed between Q3 and Q4 of FY21. Below is an update of the progress by component:

- (a) **Component 1. Construction of Two Metro Stations of the Quito Metro Line One (US\$124.0 million) is completed.** This component supported the construction of two pilot stations: La Magdalena and El Labrador. The stations were completed on April 30, 2015, with minor delays. It is solely financed by counterpart funds.
- (b) **Component 2. Infrastructure and Equipment Investment for the Quito Metro Line One (US\$1,650.2 million) faces one-year delay and a minor cost overrun.** This component includes the delivery of civil works (23-km tunnel, 13 stations, rail yard and maintenance shops), the provision and installation of the facilities and equipment required for the system's operation (permanent way, power supply, signaling, and fare collection systems), and establishment of feeder routes for the operation of the PLMQ. The World Bank, the Interamerican Development Bank (IADB), European Investment Bank (EIB) and the Development Bank for Latin America (CAF) jointly co-finance this component. The Government of Ecuador (GoE) and MDMQ also provide own funds for this component. Civil works for infrastructure investments are almost finalized, but installation of metro-wide facilities (power supply, signaling and telecom systems) shows an 82 percent physical progress. All in all, the contract reached a physical progress of 96 percent as of October 2020. On March 11th, 2020, the World Health Organization (WHO) declared COVID-19 (also known as coronavirus) a global pandemic. The same day, President Lenin Moreno decreed a national health emergency for Ecuador, which entailed the closing of public services, except for health, security, and risk services. The implementation of the civil works contract under this component was suspended from March 16th to July 10th, 2020, and its implementation schedule was revised with a new expected completion date from March 31st, 2020 to March 31st, 2021. In addition to the works suspension, this one-year delay also reflects slower implementation due to application of biosecurity protocol when the work was resumed in July 2020, and disruption of supply of imported inputs and availability of equipment. In addition to the delays, the PIU reported an expected overall cost overrun of US\$35M (around 2 percent of total civil works costs) over the initial project budget to finalize the project. This falls within the expected cost overruns due to unexpected risk that materialized during execution, such as the lack of dump sites after a landslide, or the fuel contamination in La Pradera station. Cost overruns will be covered with counterpart funding.



- (c) **Component 3. Provision of Train Sets to operate in the Quito Metro Line One (US\$183.6 million) is suspended, and pending arrangements for testing.** This component comprises the delivery of 18 six-car train sets, with a total of 108 rail cars. The MDMQ is financing this contract in its entirety. The implementation of this contract was also suspended on March 16th, 2020 and the PIU is negotiating a new implementation schedule. The PIU reports that 17 out of the 18 trains are already in Quito. The last train is expected to arrive in December 2020, subject to an agreement on a new schedule for contract implementation (including deliveries and testing). Final testing is pending and requires train drivers, which the PIU needs to train using Component 5 of the project.
- (d) **Component 4. Project Management (Original: US\$47 million) will continue until the project is completed:** This component comprises the provision of consulting services to strategically manage and supervise the execution of Component 2. The IADB and CAF co-finance this component, with counterpart funds provided by the GoE and the MDMQ.
- (e) **Component 5. Institutional Studies, Safeguards and Project Implementation Supporting Activities (US\$10 million) include critical activities to achieve the PDO, and its implementation is delayed.** This component comprises activities to support the implementation of the integrated public transport system (e.g., master mobility plan, individual consultants to support secretary of mobility on routes restructuring, feasibility of Metro extension to Ofelia), that will allow the project to achieve its full potential developmental impact. Activities to support the commencement of the operation (e.g., legal structuring, technical support in operator selection) are essential to mitigate risks of not achieving the PDO measured in terms of Passengers per day in PLMQ and customer satisfaction (key outcome indicators). Activities in Component 5 are jointly defined by the PIU, the Secretary of Mobility, and other technical departments. Out of the US\$ 10 million allocated component, only US\$428,220 have been disbursed for completed activities. The main reasons for delays are: (i) the change in the MDMQ General Administration and the Project Implementation Unit (PIU); (ii) lack of internal coordination between Municipal entities (including Metro Quito Company PIU, Secretary of Mobility and Secretary of Land Use); and, (iii) travel restrictions due to the COVID-19 lock-down situation causing delays in TA procurement and implementation. The Bank sent a Management Letter in January 2020 raising its concern about the impact of the lack of collaboration between the Municipal entities on project implementation. The Municipality had a very positive reaction to the letter, and during the mission in February 2020 the Bank team agreed with all parties on more streamlined internal processes between the Municipal entities. Consequently, the MDMQ General Administration approved an action plan for implementation to improve coordination. (see annex II for a list of activities under Component 5).
- (f) **Critical assumptions.** The project has experienced delays in structuring the contract for fare collection and metro operation. The implementation of Component 5 is essential to support these processes and prevent further project completion delays.

C. SAFEGUARD ISSUES

7. **Outstanding resettlement compensations.** The Municipality is conducting internal processes to compensate businesses affected by the project, and to make pending payments for six private properties subject to expropriation procedures. The Municipality is implementing the Resettlement Action Plan (RAP) to finalize the compensation process. The PIU expects to finalize the payment of compensations by October 2021.

8. **Complaints about structural damages in the Solanda area.** Since mid-late 2017, there are 270 buildings with damages allegedly attributed by the owners to the construction works for the underground tunnels and tracks of the Project. In 2018, MDMQ commissioned a study to a local university (*Pontificia Universidad Católica de Ecuador*). The study identified the Project as one among several possible causes for the terrain subsidence causing the damages to the buildings and recommended that a more comprehensive study be done to reach firmer conclusions on the root causes for the damages. The procurement of that comprehensive study was unsuccessful due to non-compliance with formal requirements in the local regulation. After the municipal elections in March 2019, the new administration decided to activate the project's insurance to cover the damages. However the insurance company informed that there was no technical proof of attribution to the Metro Project. In the meantime, the Bank team has been monitoring the complaints, monitoring the actions from the municipality to ensure the safety of the affected people (regular technical inspections and two expropriations of buildings in risk of collapse) and properties, and supporting the Municipality in managing communications on the issue. The Bank clarified the technical study on Solanda is eligible to be financed with loan proceeds and supported the elaboration of ToR. Recently the Bank hired an insurance expert for the Municipality to support the negotiations with the insurance



company. Protests from people with damaged buildings in the Solanda area have intensified and they recently hired a legal firm to help them to get compensation from the Municipality and/or the Metro company.

D. DELAYS IN ARRANGEMENTS FOR METRO OPERATION AND MAINTENANCE

9. **There have been significant delays (up to two years) on the definition of the Operation and Maintenance (O&M) model for the PLMQ, which makes it unlikely that the Project will achieve commercial operation before 2022.** The Bank and the other co-financiers are not financing the contract for the operation of the metro. However, the banks have mobilized non-reimbursable resources to support the Municipality with the definition of the O&M model. In 2018 the former mayor of Quito requested to change the ongoing structuring to pursue a faster approach involving a direct selection of the operator. The Municipality did not complete the direct selection process by the time the municipal elections took place, leading to a change of government and full replacement of the PIU and of the Quito Metro Company's management team in July-August 2019. The new PIU team was initially reluctant to get support from the co-financing partners and proposed a new O&M model in November 2019. However given its limited capacity, it eventually agreed to get external support in September 2020. Procurement processes for said support are ongoing and are expected to be finalized by January 2021. The Municipality's lack of decision regarding the O&M model for the operation of the metro line, combined with a steep learning curve for the new team, and reluctance to accept external support virtually paralyzed the process of selecting an operator during the last two years. The following is the status of the three key aspects for structuring the O&M model:

- (a) Legal structure: After several unfruitful attempts to explore alternatives on the legal regime for the operation, the Quito Metro Company (EPMMQ) has confirmed willingness to follow the recommendations of previous studies implemented by the Bank and IADB. In this sense, Metro has now agreed to conduct a competitive selection of an external operator under the local legal figure of *Alianza Estratégica* (local legal figure that allows a public company to share responsibilities with an external entity), subject to the approval of the EPMMQ directory. Several officials in the Municipality, including the municipal attorney are reluctant to use *Alianza Estratégica* over a Public Private Partnership, which under local regulation is approved by the Municipal Council. The Municipal Attorney required an international firm to confirm the appropriateness of the *Alianza Estratégica*. After a year, the PIU has started the bidding process to select an international legal structurer for this process using loan proceeds. This firm will conduct a standard legal structuring, which includes an initial due diligence. The due diligence would serve to comply with the requirement from the Municipal Attorney.
- (b) Technical structure: On the technical side, over the last year the EPMMQ allocated a significant amount of its limited capacity to work on the integration with the other transportation modes while neglecting advances on the O&M structuring. Using loan proceeds, EPMMQ has advanced some elements of the structuring. However, they require more work and to be turned into technical definitions under a bidding process. EPMMQ has recently started the bidding process to select a firm that will provide much needed technical support on the structuring and procurement processes for the operator. The firm will also support the restructuring of EPMMQ, to help with the transition from managing an infrastructure megaproject, to operating a metro, and support capacity building for these purposes.
- (c) Financial structure: On the financial side, the Municipality confirmed they will guarantee the operator payments with own resources. The Metro fare has just been approved by the Municipal Council last November 27th, 2020. The Bank team advised to work with the municipality to create a structure that mitigates exposure to risks linked to operating revenue, municipal repayment capacity. The Bank team also advised that, given the uncertainties and the financial weakness of the publicly operated Metrobus Q, the structure of the project ring fences the operating revenue of the metro, and does not integrate it with the Metrobus Q BRT system. The firm supporting the technical structure will join efforts with an existing firm helping with the definition of the financial structure to achieve the finalization of the bidding package for the selection of the operator.

E. RATIONALE FOR EXTENDING THE CLOSING DATE

10. **The proposed extension of the project would allow to complete the execution of the civil works, and provide the technical and financial support required for the definition and implementation of the O&M business model.** The completion of the works is underway (96 percent physical progress), and no issues are expected to reach completion by March 2021. The commercial operation of the Metro is a *sine qua non* condition to achieve the PDO. The PIU has recently agreed to get external support to strengthen their



capacity and help in three key areas of the O&M: legal, technical, and financial (see paragraph 9). This support is funded with loan proceeds. The Metro is not expected to be operational before 2022.

11. **The proposed extension would also allow the Municipality to implement the RAP and finalize the compensation process, which is expected to be completed by October 2021.** On Solanda, the Municipality is negotiating with the insurance and has finally agreed to implement the comprehensive technical study to determine attribution. That technical study should be completed by September 2021.

12. **If needed and subject to progress on the agreed action plan, a second extension to match the total 18-month request will be considered by the Bank.** This restructuring covers a 12-month extension. A second extension of additional six-month e– up to the maximum of 18 months requested by the Municipality– will be consider only if it becomes necessary and warranted by the Project implementation progress. It will be subject to RVP approval and the Borrower’s positive engagement and progress towards the main project milestones, including compliance with the Action Plan (see Table 1 and Annex I for further details and key dates).

13. **There is a credible action plan under implementation to mitigate delays in the execution of Component 5, including the key activities to support the structuring and procurement of the O&M model and contract.** After several meetings between the PIU and the different Municipal institutions involved, there is now a clear path for full implementation of Component 5 (see Annex II). As of today, consultancies amounting to US\$4.2 million are under procurement, in implementation or already executed. All activities to be financed by the loan up to \$10 million have been identified and agreed upon, and an updated procurement plan has been approved by the Bank. This demonstrates improved institutional coordination between the Municipality entities. The PIU has been working in the definition of a *Process Flow*, that is expected to clarify the steps to be taken by each institution during the procurement process of consultancies and will be included in the Project Operational Manual. Several of the activities already defined in the procurement plan have implementation schedules that already surpass the loan closing date. If the project closing date is extended, an action plan to speed up implementation of this component has been identified, including:

- (a) A detailed definition of activities supported under Component 5 (see Annex II). Current status: Already agreed upon;
- (b) A clear definition of processes, roles, and responsibilities, including the conformation of a technical committee responsible for the implementation of each study. Current status: Already agreed upon and under implementation, pending formalization in the Project Operations Manual; and
- (c) The agreement to hire an individual consultant with the exclusive responsibility of providing technical support and coordination towards the implementation of Component 5 activities. Current status: Procurement process to select the consultant initiated.

F. RATIONALE FOR OTHER CHANGES

14. **The rationale to change the implementation schedule, the disbursement estimates, and the results framework is the need to accommodate delays in project implementation.** The project implementation schedule and disbursement estimates will be consistent with the implementation plan as reflected in Annex I and II. The end-of-target dates in the results framework will be postponed, which is consistent with the slower implementation of outputs (intermediate outcome indicators), and the delayed achievement of outcome targets. Achieving outcome targets require reaching a commercial operation, which is unlikely to happen before 2022.

15. **In addition, the team has updated the economic analysis (and the associated outcome indicators target) to simulate the potential impact COVID-19 pandemic on project demand, which does not affect economic viability.** The pandemic is having a dramatic impact on the economy, and transit service has been one of the hardest hit sectors by the crisis. In Ecuador there is a drastic fall in economic activity, that has reduced passenger demands to a fraction of their normal levels (up to 90 percent reduction reported in major cities). Transport demand is closely linked to economic activity. In addition, Ecuadorean authorities have enforced public transport vehicle occupancy restrictions such as operating at only 30-50 percent capacity further impacting passenger demand. Apart from short-term capacity restrictions, public transport systems are also vulnerable to long-term user regulatory and behavioral changes. These anticipated downside impacts on future demand of the Metro Line One upon opening have been incorporated in future projections in the CBA and has been discussed in further detail in the Economic Analysis section (see Paragraphs 21 and 22).



16. The proposed project restructuring responds to the Municipality’s request dated November 20th, 2020, which was endorsed by the GoE on November 27th 2020, and confirmed by the Mayor on December 16th, 2020.

II. DESCRIPTION OF PROPOSED CHANGES

A. RESULT FRAMEWORK

17. The restructuring would extend the end-of-target dates for all the indicators until the revised closing date and reduce the target for Metro’s daily ridership, the key project outcome. The target dates for the PDO-level indicators were updated to the new project closing date of December 31, 2021, whereas those for the intermediate indicators (such as completion of civil works and installations) were updated to 15th April 2021. The end target value of PDO Indicator 1 “Passengers per day in PLMQ” would be reduced from 369,000 to 295,999 or by about 25 percent. The projected deduction is conservative and considers the impact on demand coming from the vehicle occupancy restrictions and possible further reduction of demand due to changes in public perception. For these reasons, an additional 20 percent demand cut was applied for the opening year in the cost benefit analysis (CBA). The CBA was further updated to apply a modest growth rate to the opening year demand to compute the revised internal rate of return and net present value over the life of the project (see Paragraph 22) and to recompute the feasibility of the project. See Section IV.

B. EXTENSION OF LOAN CLOSING DATE

18. The proposed restructuring would provide a 12-month extension of the closing date of the loans BIRF 8285-EC (original) and 8889-EC (Additional Financing) for the PLMQ. It is possible that there may be a need for an additional six months extension to allow for accompanying the process to reach commercial operation. This would be determined towards the end of the current extension period based on needs and performance and subject to RVP approval. This is the second extension of the closing date. The additional financing approved in 2018 extended the closing date of the original loan from December 31, 2018 to December 31, 2020 (24 months). This restructuring proposes to extend both loans from December 31, 2020 to December 31, 2021, making the extension of the project total 36 months. It is necessary to extend both loans as the undisbursed loan proceeds needed to finalize the implementation of the project come from both loans (BIRF 82850-EC US\$3.21 million; BIRF 8889-EC US\$30.70 million), for the combined total of \$33.91 million.

C. DISBURSEMENT ESTIMATES

19. The disbursement estimates for both loans have been updated in consistency with the extended closing date and updated implementation schedule. Disbursement estimates for the remaining US\$3.21 million in loan BIRF 82850 mainly correspond to technical assistance activities under Component 5 to support the processes to achieve commercial operation over the remaining project implementation. BIRF 8889-EC include resources to finance both Component 5 and Component 2 (civil works) activities.

D. IMPLEMENTATION SCHEDULE

20. The restructuring proposes to extend and update the implementation schedule in consistency with the extended closing dates. To this end, the client has agreed on an action plan towards implementation that is acceptable to the Bank. The action plan below covers the schedule for implementation of critical activities to support the structuring of O&M as well as the integrated transport system in Quito. In addition, Annex II reflects the updated schedule for implementation of Component 5.

Table 1. Action Plan for implementation

Objective	Activity	Responsible	Completion Date
Improve institutional Coordination and	Manual for technical assistance activities implementation, fostering coordination among	PIU, MDMQ	September 2020 (ongoing)



implementation of Component 5	different areas in the municipality and avoid delays in procurement and implementation of Component 5		
Implementation of Component 5	Hire an individual consultant with exclusive dedication to provide technical support and coordination towards the implementation of Component 5	PIU, MDMQ (financed by Component 5)	December 2020
Support the Operation and Maintenance contract	Hire an international firm with experience supporting metro operations to strengthen EPMMQ capacity, restructure the company towards the operation, support the process to select an operator and the initial months of operation.	PIU, MDMQ (financed by Component 5)	January 2021
Support the Operation and Maintenance contract	Hire an international firm to support the legal structuring of the O&M contract	PIU, MDMQ (financed by Component 5)	January 2021
Launch of O&M tender	Bidding process to select operator is launched	PIU, MDMQ	February 2021
Award of O&M contract	O&M contract is awarded	PIU, MDMQ	August 2021
Solanda	Technical study on Solanda damages attribution is implemented	MDMQ (financed by Component 5)	September 2021
Compensations	Civil Works (Component 2) related compensations are paid	PIU, MDMQ	October 2021
Commercial operation	Commercial operation of the Quito Metro Line One has started	PIU, MDMQ	February 2022

E. ECONOMIC AND FINANCIAL ANALYSIS

21. **The Cost Benefit Analysis (CBA) for the Quito Metro Line 1 Project has been updated to incorporate the increased civil work costs and the passenger demand impacts of COVID-19.** Although its impact on economic analysis results is negligible, the team has added the cost overruns of US\$ 35 million to civil works in the model over an additional year of construction (now expected to be completed by the end of 2021). The team also updated the demand forecasts considering travel restrictions associated with the COVID-19 lockdowns and potential long-term shifts in commuter travel choices. A 20 percent reduction in demand was applied to the opening year (delayed to 2022) projections provided by the Metro. This loss was expected to recover gradually over a period of three years by the end of 2025 – although about 2.5 percent of the demand was assumed to be permanently lost due to long-term regulatory and behavioral changes in trip choices and characteristics. Furthermore in the current CBA update a 5.0 percent demand growth was assumed in the third year (2024) to reflect the implementation of a Hierarchically Integrated Transit Systems (HITS), which blend efficient technologies such as BRT and metros – again conservative compared to 12.7 percent assumed in the previous CBA update.

22. **The updated economic analysis confirms that the project remains economically viable.** Under conservative assumptions, the project updated Net Present Value (NPV) is US\$1,384 million (down from US\$ 2,150 million previously), with an Economic Internal Rate of Return (EIRR) of 8.02 percent (down from 9.72 percent previously) for a 35-year evaluation period (including 6 years of construction and 29 of operation). The results show that the NPV for the project remains positive at a 4.65 percent discount rate. In conclusion, the updated CBA and sensitivity analysis for the Quito Metro Line 1 Project shows that the project remains economically viable at a 4.65 percent discount rate, as its benefits are larger than its costs (positive NPV). The project will benefit a large and cross-section of the Quito metropolitan population and the Ecuadorean economy.



III. SUMMARY OF CHANGES

	Changed	Not Changed
Results Framework	✓	
Loan Closing Date(s)	✓	
Disbursement Estimates	✓	
Implementation Schedule	✓	
Economic and Financial Analysis	✓	
Implementing Agency		✓
DDO Status		✓
Project's Development Objectives		✓
PBCs		✓
Components and Cost		✓
Cancellations Proposed		✓
Reallocation between Disbursement Categories		✓
Disbursements Arrangements		✓
Overall Risk Rating		✓
Safeguard Policies Triggered		✓
EA category		✓
Legal Covenants		✓
Institutional Arrangements		✓
Financial Management		✓
Procurement		✓
Other Change(s)		✓
Technical Analysis		✓
Social Analysis		✓
Environmental Analysis		✓



IV. DETAILED CHANGE(S)

LOAN CLOSING DATE(S)

Ln/Cr/Tf	Status	Original Closing	Revised Closing(s)	Proposed Closing	Proposed Deadline for Withdrawal Applications
IBRD-82850	Effective	31-Dec-2018	31-Dec-2020	31-Dec-2021	30-Apr-2022
IBRD-88890	Effective	31-Dec-2020		31-Dec-2021	30-Apr-2022

DISBURSEMENT ESTIMATES

Change in Disbursement Estimates
Yes

Year	Current	Proposed
2014	0.00	0.00
2015	0.00	0.00
2016	113,875,561.00	113,875,561.00
2017	33,066,204.26	86,274,439.00
2018	53,208,234.76	125,937,086.02
2019	225,937,086.02	60,000,000.00
2020	8,912,914.00	15,000,000.00
2021	0.00	33,912,913.98
2022	0.00	0.00



Results framework

COUNTRY: Ecuador
Quito Metro Line One

Project Development Objectives(s)

The proposed Project development objective (PDO) is to improve urban mobility in the city of Quito serving the growing demand for public transport. The Project will reduce travel times, decrease operational costs of the transport service, improve connectivity, security and comfort of the current system and reduce emissions of pollutants and greenhouse gases.

Project Development Objective Indicators by Objectives/ Outcomes

Indicator Name	PBC	Baseline	End Target
Improved urban mobility in the city of Quito			
Passengers per day in PLMQ (Number)		0.00	295,999.00
Travel time for public transportation users (Minutes)		38.50	23.10
Operating costs of Quito's vehicle fleet (Amount(USD))		0.00	-59,400,000.00
GHG emissions from transport in DMQ (Metric tons/year)		0.00	-58,170.00
Adequate passenger capacity provided by PLMQ (Yes/No)		No	Yes
Percentage of users satisfied with overall metro service, its security and comfort (differentiated by gender and income) (Percentage)		0.00	65.00
Percentage of female users satisfied with overall metro service, its security and comfort (Percentage)		0.00	65.00
Percentage of low-income users satisfied with overall metro service, its security and comfort (Percentage)		0.00	65.00
Percentage of jobs accessible in 60 minutes of travel time (Percentage)		45.30	50.80



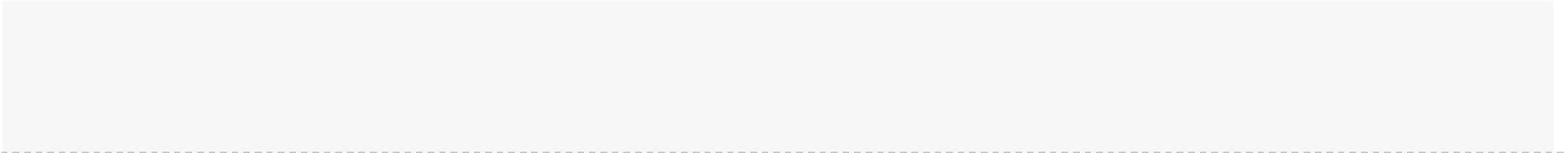
Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	End Target
3. Provision of Train Sets to Operate in the Quito Metro Line One			
Percentage of rolling stock completed (Percentage)		0.00	100.00
2. Infrastructure and Equipment Investment for the Quito Metro Line One			
Percentage of physical work progress in civil works other than stations (Percentage)		0.00	100.00
Percentage of physical work progress in stations and universal access (Percentage)		0.00	100.00
Percentage of physical work progress in rail yard (Percentage)		0.00	100.00
Percentage of progress in installation of power supply, auxiliary, signaling and telecom systems (Percentage)		0.00	100.00
Percentage of fare-collection system installed (Percentage)		0.00	100.00
Percentage of progress in installation of permanent way (Percentage)		0.00	100.00
5: Institutional Studies, Safeguards and Project Implementation Supporting Activities			
Percentage of metro feeder routes in operation (Percentage)		0.00	15.00
Percentage of bus fleet under unified fare-collection system (Percentage)		0.00	25.00
Implementation of a reporting mechanism for cases of violence against women and girls in the PLMQ (Yes/No)		No	Yes
Percentage of technical and professional staff, directly employed by the operator of PLMQ, that is female (Percentage)		0.00	20.00



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Quito Metro Line One (P144489)





ANNEX I. IMPLEMENTATION TIMELINE AND KEY MILESTONES FOR PROJECT IMPLEMENTATION

Activity	2020	2021												2022					
	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June
End of civil works and reception of works																			
Work inspection																			
Project management																			
Legal structuring contracting		★																	
Hiring of technical support, restructuring EPMMQ and operation		★																	
Project structuring (O&M) and support until formalization																			
EPMMQ restructuring technical support and entry into operation																			
Launch of O&M tender			★																
Award of the O&M contract									★										
Start of operation (testing phase)																			
Start of commercial operation																			
End of contract trains																			
Expropriations																			
Resettlements																			
Compensations (Payments)																			
Complaints and claims																			
Merchant of El Ejido																			
Enhancement of San Francisco archaeological assets																			
Implementation Solanda technical study																			
Fare Collection system implementation																			
Definition and approval of the metro rate																			



ANNEX II. LIST OF ACTIVITIES TO BE FINANCED UNDER COMPONENT 5 (TECHNICAL ASSISTANCE)

Activity	Estimated amount	2020	2021											2022						
		DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
EC-EPM METRO QUITO-16547-CS-CDS Update of the demand model for the First Line of the Quito Metro of the DMQ"	\$200,000																			
EC-EPM METRO QUITO-47665-CS-INDV Annual Declaration of Hazardous Waste	\$30,000																			
EC-EPM METRO QUITO-16703-CS-CDS Hiring of a consultant to advise on Fidic Contract	\$30,000																			
EC-EPM METRO QUITO-134941-CS-CDS / Consultancy for the Selection of the Operator of the First Line of the Quito Metro	\$200,000																			
EC-EPM METRO QUITO-107955-CS-INDV / Technical assistance for the implementation of Component V in the area of Environmental Management, which responds to the need for the immediate implementation of measures requested by multilateral organizations	\$34,000																			
EC-EPM METRO QUITO-47319-CS-QCBS / Consultancy for the Study of Updating the Environmental Management Plan for the Operation and Maintenance Phase of the PLMQ	\$300,000																			
EC-EPM METRO QUITO-112684-CS-QCBS / Mobility Master Plan	\$1,300,000																			
EC-EPM METRO QUITO-16700-CS-QCBS / Study of urban development related to the Metro de Quito Public Transport System	\$550,000																			
EC-EPM METRO QUITO-192320-CS-QCBS / Consulting to establish the methodology for selecting the provider of O&M services and technology transfer of the PLMQ	\$180,000																			
Legal structuring phase 2	\$180,000																			
EC-EPM METRO QUITO-203538-CS-QCBS / Technical structuring of the operation and maintenance of the First Line of the Quito Metro	\$2,122,600																			
Diagnosis and recommendations to remedy and mitigate damage to homes affected by differential settlement in the Solanda area	TBC																			
Contingent expropriations and resettlements	\$1,150,000																			
EC-EPM METRO QUITO-142865-CS-INDV / Individual consultancy to assist the Metropolitan Directorate of Policies and Mobility Planning of the Ministry of Mobility in geographic information systems oriented to public transport	\$32,000																			
EC-EPM METRO QUITO-142868-CS-INDV / Individual consulting for technical support for the implementation of the TA component in the Metropolitan Directorate of Mobility Policies and Planning of the Ministry of Mobility. Urban transport specialist (modeler)	\$21,000																			
EC-EPM METRO QUITO-142877-CS-QCBS Public of the Metropolitan District of Quito (Unique Transportation Authority)	\$285,500																			
EC-EPM METRO QUITO-142888-CS-INDV / Update to the tariff integration model (Phase II). Determination of the income distribution formula to different operators of the DMQ's Integrated Public Transportation System for passengers	\$223,215																			
Signature for technical support in the process of implementation of the SITP-DMQ and final adjustments to the management model	\$85,000																			
Definition of the communication strategy to operators and users about the implementation of the Integrated Transportation System and the Integrated Transportation Tariff of the Metropolitan District of Quito	\$85,000																			
EC-EPM METRO QUITO-134776-CS-CDS / Basic engineering design and definition of basic budget for the construction of the extension of the First Line of the Quito Metro (El Labrador - La Ofelia section)	\$1,296,039																			
EC-EPM METRO QUITO-47038-CS-QCBS / Development of the strategy for the promotion of Metro Culture	\$85,000																			
EC-EPM METRO QUITO-144956-CS-QCBS / Study on non-fare revenue business model of the Quito Metro	\$327,000																			
EC-EP METRO QUITO-144958-CS-QCBS / Comprehensive evaluation study and proposal for institutional restructuring of the Metropolitan Public Company of Passenger Transport Quito	\$661,887																			
EC-EPM METRO QUITO-202137-CS-INDV / Individual consultancy for support in the processes, analysis and evaluation of the financial viability of the project that allows decision-making and definition of the contracting and implementation process of the Intelligent Transportation system	\$7,000																			
EC-EPM METRO QUITO-202139-CS-INDV I Technical assistance for the implementation of Intelligent Transport Systems in the Metropolitan Public Passenger Transport Company	\$28,000																			
Metro users satisfaction surveys	\$20,000																			
EC-EPM METRO QUITO-203880-CS-CDS / Training and enabling certification for the driving of the train model MQ-117 in the depot and main tracks for the pre-operation phase to officials of the First Line of the Quito Metro	\$150,000																			
EC-EPM METRO QUITO-202141-CS-INDV / Technical assistance to support the implementation of contracted consultancies and to be contracted for the implementation of the integrated public transport system	\$50,000																			