



INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
RESTRUCTURING PAPER
ON A
PROPOSED PROJECT RESTRUCTURING
OF THE
ECUADOR MANTA PUBLIC SERVICES IMPROVEMENT PROJECT
APPROVED ON AUGUST 8, 2013
TO THE
MUNICIPALITY OF MANTA

WATER GLOBAL PRACTICE

LATIN AMERICA AND THE CARIBBEAN

April 18, 2018

Regional Vice President:	Jorge Familiar Calderon
Country Director:	Alberto Rodriguez
Senior Global Practice Director:	Jennifer J. Sara
Practice Manager/Manager:	Rita E. Cestti
Task Team Leaders:	Zael Sanz Uriarte
	Iris Marmanillo
	Mauricio Cuellar



ABBREVIATIONS AND ACRONYMS

EPAM	<i>Empresa Pública Municipal de Agua de Manta</i> , Manta Municipal Water Utility
ERP	Enterprise Resource Planning
IBRD	International Bank for Reconstruction and Development
Km	Kilometer
KPI	Key Performance Indicator
MWC	Meters of Water Column
PBC	Performance Based Contract
PDO	Project Development Objective
PIU	Project Implementation Unit
RP	Restructuring Paper
WSS	Water Supply and Sanitation



BASIC DATA

Product Information

Project ID P143996	Financing Instrument Investment Project Financing
Original EA Category Partial Assessment (B)	Current EA Category Partial Assessment (B)
Approval Date 08-Aug-2013	Current Closing Date 30-Jun-2018

Organizations

Borrower Municipality of Manta	Responsible Agency Municipality of Manta
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Project Development Objective (PDO)

Original PDO

The Project Development Objective (PDO) is to support the Municipality of Manta in increasing the quality and sustainability of public services for water, sanitation and urban mobility.

The objective will be achieved by (i) increasing availability of water supply and efficiency of water and sewerage services; (ii) improving urban mobility and accessibility through improvements to the street network, including sidewalks; and (iii) enhancing the capacity of the municipal government in planning and managing the provision of water and sanitation and urban transport services.

Summary Status of Financing

Ln/Cr/Tf	Approval	Signing	Effectiveness	Closing	Net Commitment	Disbursed	Undisbursed
IBRD-82890	08-Aug-2013	20-Nov-2013	18-Jul-2014	30-Jun-2018	100.00	54.14	45.86

Policy Waiver(s)

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

No



I. PROJECT STATUS AND RATIONALE FOR RESTRUCTURING

A. Introduction

1. **This Restructuring Paper (RP) seeks the Country Director's approval of a Second Order Restructuring of Loan 8289-EC for the Manta Public Services Improvement Project (P143996).** The proposed restructuring would comprise: (i) a one-year extension of the Project closing date from June 30, 2018 to June 30, 2019, to allow sufficient time for the completion of planned activities, and ultimately, full achievement of the Project Development Objective (PDO); (ii) changes in the disbursement estimates and implementation schedule, to reflect actual progress achieved and to accommodate them to the extended closing date; (iii) a reallocation of loan proceeds between disbursement categories to allow for the financing of incremental costs associated to additional wastewater management infrastructure to be developed under the project; street upgrading costs derived from changes in applicable legislation; as well as incremental project management costs associated with the extension of the project implementation timeframe; and (iv) changes in the results framework of the Project and the methodology for the economic analysis that was employed at Appraisal, to reflect variations in the scope of planned activities and to better capture results and positive impacts that were not captured in the original results framework and economic analysis.

B. Background and Rationale for Restructuring

2. **The US\$100 million Manta Public Services Improvement Project was approved by the Board on August 8, 2013 but was not declared effective until July 18, 2014.** This delay was mainly due to the change in local government authorities following the February 2014 elections, which entailed significant turnover of management and staff within the municipal units that played an important role in the Project, i.e., the Transit and Public Transportation Directorate, the Public Works Directorate and the Manta Municipal Water Utility (EPAM). Along with this change of municipal authorities came a shift in priorities and in the envisaged municipal development model, which resulted in the Borrower's decision to drop from the Project scope certain works that were ready to be launched, prioritizing other works for which designs had yet to be prepared. The above, coupled with delays in staffing, the weak capacity of the Project Implementation Unit (PIU) and its lack of previous experience managing World Bank financed projects, resulted in significant delays in Project implementation.

3. **Implementation performance has improved since end 2015 through a combination of strong leadership and substantial institutional strengthening of the PIU.** The appointment of a new PIU Project Coordinator in November 2015 resulted in notable improvements in project management, overall implementation and coordination at the local level, and an increased focus on results. These improvements were also a consequence of a series of training events and capacity building support provided by the World Bank, particularly on fiduciary aspects, many of which were agreed upon during the midterm review conducted in July 2016. Regular and close implementation support was likewise provided through an expanded task team which included a local engineering consultant to ensure regular visits to Manta. As a result, Project implementation and disbursement rates began to pick up in 2016, and have continued this positive trend despite the 7.8 magnitude earthquake that hit the city in April 2016.

4. **The 2016 Earthquake did, however, negatively impact EPAM's financial, commercial and operational performance ratios, all of which comprise results indicators under the Project.** Moreover, in the wake of the earthquake, roughly 10,000 people abandoned their houses, translating from one day to the next, into a loss of 1,800 active customers for EPAM water and sanitation (WSS) services. Delinquency rates increased in tandem, as citizens had to cope with the



economic implications of the earthquake. Technical water losses also increased due to damages to the water distribution network resulting from the quake, and key water supply infrastructure, such as the *Ceibal* and *Caza Lagarto* raw water pumping stations suffered substantial damage, reducing drinking water production and service continuity. This affected certain utility performance ratios that are also used as results indicators for the Project, such as the working ratio and continuity index.

5. **A first restructuring was approved in June 2016 to allow for the financing of earthquake-related emergency response and reconstruction activities contributing to the PDO.** The first restructuring encompassed the creation of a new Project Component (Component 5) to finance critical activities related to the restoration of water supply services, including: (i) temporary bridge-financing of EPAM's operational expenses whose revenues were severely diminished in the aftermath of the earthquake; (ii) the rehabilitation of the main raw water pumping stations feeding Manta's distribution system that were damaged during the earthquake; (iii) critical repairs and isolation of the water distribution system in "ground zero"; and (iv) studies and technical assistance to EPAM to recuperate normal operations. A total of US\$5.3 million and US\$5 million were reallocated to the newly created Component 5 from Component 1 (WSS investments) and Component 2 (Road improvement), respectively. Although these measures helped EPAM to return to the path of performance improvement, targets set in the Project Results Framework for EPAM's financial, commercial and operational efficiency ratios had to be revised.

6. **The reallocation of funds to finance emergency response activities required the scale down of other planned activities,** particularly certain road improvement and water supply and sewer rehabilitation under Component 1 and extension investments under Component 2. The Borrower managed to leverage other financing sources -- mainly reconstruction funds managed by National Authorities -- to fund part of the originally envisaged investments, such as water and sewerage network rehabilitation works in ground zero, for which designs were prepared under the Project and are being executed and financed by other national authorities.

7. **Changes in the 2015 National Telecommunications Law increased the costs associated with street upgrading activities, which required the Borrower to scale down other activities under Component 2.** The original design of Component 2 envisaged the financing of: (i) 29 km of street resurfacing for road traffic; (ii) 6 km of new sidewalk construction in the center of the city; and (iii) 12 km of urban street upgrading. While the urban streets upgrading activities encompassed sidewalk widening, tree planting, street lighting and furniture, it did not account for the burying of electrical and telecommunication wiring, which became a requirement for all street and urban upgrading projects executed following the promulgation of the February 2015 Telecommunications Law. Manta embraced this obligation, as it contributed to the goal of improving the urban environment and rendering the city friendlier for pedestrians. However, the associated increase in costs for these works, (up to 30 percent of street upgrading unit costs per linear meter) required the Borrower to reduce the length of streets to be upgraded and repaved under the Project. It also delayed the launch of street upgrading works as the designs had to be adapted to comply with the new regulations.

8. **Due to the above, the economic weight of activities aimed at improving the urban environment and enhancing walkability increased compared to other Component 2 activities focused on improving road mobility.** The urban development model introduced by the local administration that assumed office in 2014 prioritized the paving of dirt roads in poor peri-urban neighborhoods and street upgrading activities to create a corridor linking the main touristic and commercial areas of the city¹ over street resurfacing activities in other arterials and collectors in the center. This, along with the need to liberate funds for emergency response and wire burying activities, increased the relative importance of urban environment and pedestrian mobility enhancements (both in economic and physical terms) over originally envisaged road mobility improvement activities under Component 2.

¹ The Barbasquillo Avenue – Flavio Reyes Avenue – Calle 13 St. corridor. While the urban upgrading of Flavio Reyes and Calle 13 was foreseen under the original scope of the project, Barbasquillo was not. Barbasquillo Avenue is where the high-end hotels of the city are located. Manta has been historically an economic touristic destination and the municipality is looking at attracting as well other tourist profiles.



9. **The above calls for a revision of the results indicators used to gauge urban and road improvement activities, which were originally focused on measuring improvements in road mobility.** The economic analysis of Component 2 activities also focused on quantifying gains related to enhanced road mobility, minimizing the benefits associated with urban environment and walkability improvements due to the lack of data at the time of appraisal for their assessment. The fact that the Municipality of Manta updated its municipal cadaster in January 2018, including the valuation of real estate properties of the city using market comparators, creates an opportunity to expand the methodology for the economic analysis that was employed at Appraisal beyond improvements in road traffic to take into account the economic impacts of urban environment improvement activities. The present RP, therefore, proposes that property valuation data from the soon to be released 2018 cadaster be used for this purpose.

C. Project Status

10. **Disbursements and progress in implementation reflect efforts from the PIU to overcome the steep learning curve, changes in the local administration and applicable regulations and challenges encountered as a result of the 2016 earthquake.** As of March 2018, US\$54.1 million (54 percent of loan proceeds) have been disbursed and 93 percent have been committed. Disbursements are expected to reach 73 percent by June 2018. Most of the remaining 27 percent correspond to commitments made under the Par Vial and Manta District contracts. All main procurement processes have been finalized, with only those related to the development of an urban mobility plan (consulting services budgeted at roughly US\$1.2 million), the procurement of a vacuum tank truck (goods, US\$0.47 million) and the construction of a building to house EPAM's laboratory (works, US\$0.35 million) remaining to be awarded. Two addenda related to additional works and costs affecting the two major ongoing construction contracts – Par Vial urban upgrading works and the Manta District WSS networks rehabilitation activities – are expected to make up for the remaining budget.

11. **However, an extension of the Project implementation timeframe would be required to finalize both the Par Vial urban upgrading and Manta WSS networks rehabilitation works needed to achieve the PDO.** The start of these two construction works was delayed due to: (i) difficulties encountered by one of the contractors to get the required advance payment guarantee, because of local financial market conditions; (ii) delays in the mobilization of contractors; (iii) unforeseen weather conditions; (iv) insufficient availability in the Ecuadorian market of certain piping material; and (iv) the need to coordinate with ongoing post-earthquake reconstruction activities implemented in the city by National authorities, to mitigate the impact of construction activities on the population. Although these two contracts are currently advancing at a satisfactory pace, a one-year extension of the closing date would be required to ensure completion of pending works, and respond to unforeseen events that might arise and sufficient time to measure impacts and achievement of the PDO. Following is a detailed description of the implementation status of each of the 5 Project components.

12. **Component 1: Investments in Water Supply and Sewerage (IBRD financing US\$38.7 million, 5.2 percent disbursed and documented, 100 percent committed).** Main activities under this component include: (i) the construction of Los Geranios sewer main (US\$0.6 million); (ii) the construction of the Santa Martha and Colorado drinking water reservoirs (US\$2.87 million); (iii) WSS network rehabilitation activities performed as part of the Barbasquillo, Flavio Reyes, Calle 13 and 24 Avenue street upgrading contracts (US\$3.24 million); (iv) the Manta District WSS networks' rehabilitation contract (US\$20.95 million); and (v) WSS rehabilitation activities performed as part of the Par Vial Urban Upgrading contract (US\$ 10.37 million). Activities (i), (ii) and (iii) listed above have been completed. Works under (iv) and (v) were awarded in the third quarter of 2017. and despite some delays in their startup these are progressing satisfactorily: financial execution rate of contracts stands at 5 percent (for Manta Districts) and 15 percent (for Par Vial) by January 2018 and works are expected to finalize in the third quarter of fiscal year 2019.

13. While this component was expected to finance the rehabilitation of the WSS network in the Tarqui District -- the 2016 Earthquake ground zero area -- the Borrower managed to leverage reconstruction funds from the National



Government for these works². As a result, the number of beneficiaries of Component 1 activities will need to be revised: (i) 15,000 and 15,500 households will benefit from water supply and sewerage networks' rehabilitation works performed under the project (instead of 15,000 and 19,100, targets currently contemplated in the results framework); and (ii) 1,500 households will be connected to the water supply and sewerage networks (instead of 2,900).

14. Funds originally associated to the Tarqui District WSS network rehabilitation activities, along with funds to be reallocated from Component 3 to Component 1 at Borrower's request, will be employed to rehabilitate the Umiña wastewater pumping station, located in the Manta District. Loan proceeds to be allocated to Component 1 as per the proposed restructuring will total US\$ 41.00 million

15. **Component 2: Investments in Road Improvement (IBRD financing US\$44.7 million; 58.3 percent disbursed and documented, 88.7 percent committed).** Main activities under this component include: (i) paving of 9.3 km. of dirt streets in the "15 de Septiembre" neighborhood (US\$3.43 million); (ii) the construction of 3 stairways (192 m.), 4.6 km paved streets and 5.3 km of sidewalks in other poor peri-urban areas of the city (US\$1.32 million; these works were prioritized by citizens in the area as part of the participatory municipal planning and budgeting process); (iii) street upgrading activities along Barbasquillo Avenue, Flavio Reyes Avenue, Calle 13 and 24th Avenue (US\$15.01 million); (iv) urban upgrading activities along Par Vial (US\$16.84 million); and (v) the repaving of streets in the ground zero area (US\$1.5 million). Activities listed under points (i), (ii) and (iii) above have been finalized. The Par Vial urban upgrading contract was awarded in the third quarter of 2017 and works are expected to be completed before the end of calendar year 2018. Ground zero repaving activities are expected to be procured as an addendum to the Par Vial contract. As explained above, Component 2 activities had to be scaled down due to the increase of costs associated to street upgrading activities: a total of 28 km of street will be intervened, instead of 41 km as originally envisaged.

16. **Component 3: Institutional Strengthening (IBRD financing US\$5.9 million; 2.2 percent disbursed and documented, 30.2 percent committed).** This component is financing the development of an Enterprise Resources Planning (ERP) system³ and a client database for EPAM, as well as the consulting services required for the structuring of a strategic alliance with a private operator aimed at improving EPAM's performance⁴. All these activities are nearing completion, with a strategic alliance agreement signed in November 2017 and the ERP system and the client database expected to be finalized and operational in June 2018. Through this component, the Borrower is also procuring laboratory equipment for EPAM, the construction of a building to host said laboratory and the development of an urban mobility plan for the City of Manta. The award recommendation for the procurement of laboratory equipment has already obtained World Bank's No Objection. However, procurement processes for both the construction of the laboratory building and the development of the urban mobility plan have suffered delays because they need to be relaunched⁵. Extending the project implementation timeframe by one year will also allow for the relaunching and completion of these processes prior to Project closure.

17. Certain activities originally envisaged under this component have been dropped, namely: (i) the development of an integrated water resources management plan for the river basins that provide water to the city of Manta (this activity was dropped because these plans are being developed by the national water authority, SENAGUA); and (ii) the development of an institutional strategic plan and a management improvement program for EPAM (which will be finally developed inhouse by EPAM with the support of the strategy ally). This RP proposes, at client request, to reallocate funds

² Liberated funds have been assigned to fund incremental costs associated to ongoing Component 1 contracts.

³ An ERP system is an informatized real-time system for the management of core business process

⁴ This strategic alliance was structured as a performance-based contract (PBC) per which part of the payments to the private partner are made against the achievement of contractually binding target values set for certain key-performance indicators (KPIs) used to track progress in areas such as non-revenue water reduction, service continuity and financial efficiency of the utility.

⁵ No bids were received for the construction of the laboratory due to the very strict qualification criteria adopted and the short contractual timeframe. The procurement process for the development of the urban mobility plan had to be relaunched because the envelope containing the economic proposal of one of the bidders was lost.



originally assigned for these activities, totaling US\$ 2 million, to fund incremental costs under Component 1, Component 2 and Component 4.

18. Reliable data on EPAM performance has been generated as a result of the development of the ERP, EPAM’s client data base and the baseline to set targets for the Key Performance Indicators (KPIs) that will be used to determine payments due to private operator under the strategic alliance agreement, which has been structured as a Performance-based contract (PBC). This calls for reviewing WSS-related Component 3 intermediate results indicators and target values to align their definition and targets to the ones used for PBC’s KPIs.

19. **Component 4: Project Management (IBRD financing US\$0.4 million, 100 percent disbursed and documented).** Funding allocated to this component would have to be increased by US\$0.3 million as to finance incremental project management costs associated with the proposed extended project implementation timeframe. This additional amount will be reallocated from Component 3.

20. **Component 5: Emergency response (IBRD financing US\$10.3 million, 32 percent disbursed, 86.4 percent committed).** Activities financed under this component include: (i) a temporary bridge-financing of operational expenses of EPAM (US\$2.5 million); (ii) the rehabilitation of the main raw water pumping stations feeding Manta’s distribution system (El Ceibal, Caza Lagarto and El Oro pumping stations, totaling US\$5.9 million); (iii) critical repairs and isolation of the water distribution system in “ground zero” (US\$0.35 million); and (iv) studies and technical assistance to EPAM to recuperate normal operations (US\$0.46 million). Activities (i), (iii) and (iv) have been finalized. The rehabilitation of El Ceibal, Caza Lagarto and el Oro pumping station is ongoing. Originally this component also considered the financing of a geotechnical study of the soils of the city, to inform post-earthquake planning and building bylaws. However, the National Government financed a study with a similar objective and this activity was dropped from the scope. At Borrower request, this RP proposes to reallocate liberated funds (US\$1.1 million) to finance incremental costs under Components 2 and 4.

II. DESCRIPTION OF PROPOSED CHANGES

A. Change in the Project Closing Date and Disbursement Estimates

21. **This RP seeks a one-year extension of the Project closing date, from June 30, 2018 to June 30, 2019, to allow sufficient time for the completion of planned activities, and ultimately, achievement of the PDO.** It also seeks approval to change disbursement estimates and the implementation schedule to reflect actual progress of activities on the ground and to accommodate to the extended implementation timeframe. The proposed revised disbursement projections are shown in the table below.

TABLE 1: REVISED DISBURSEMENT ESTIMATES

	Fiscal Year	Current	Proposed
Historic	2014	0.00	0.00
	2015	5,000,000.00	5,000,000.00
	2016	0.00	0.00
	2017	45,000,000.00	27,000,000.00
Projected	2018	50,000,000.00	40,000,000.00
	2019	0.00	28,000,000.00

B. Changes in Component Costs and Reallocation between Disbursement Categories



22. **This RP also proposes to reallocate funds from Categories 3 and 5 to fund incremental costs under Components 1, 2 and 4.** Funds liberated from Category 5 are those originally allocated to the development of a geotechnical study of soils in Manta, finally financed with emergency response resources from National Authorities. Funds liberated from Category 3 correspond to those allocated to the development of an integrated water resources management plan for the river basins that provide water to the city of Manta and the development of an institutional strategic plan and a management improvement program for EPAM. Incremental costs under Categories 1, 2 and 4 are due to the need to: (i) increase WSS network rehabilitation activities; (ii) comply with newly adopted regulations on electricity and telecommunication services; and (iii) finance incremental project management costs associated with the proposed extension of the Project closing date. The proposed revised allocation of loan proceeds among categories is reflected in Table 2.

TABLE 2: REALLOCATION BETWEEN DISBURSEMENT CATEGORIES

Category	Current Allocation	Proposed Allocation	Disbursement % Current	Disbursement % Proposed
1 – WSS investments	38.7	41.0	100 %	100 %
2 – Road Investments	44.7	45.2	100 %	100 %
3 – Institutional Strengthening	5.9	3.9	100 %	100 %
4 – Project Management	0.4	0.7	100 %	100 %
5 – Emergency Response	7.8	6.7	100 %	100 %
6 – Emergency: operating costs	2.5	2.5	80 %	80 %

C. Changes in the Results Framework

23. **This RP proposes changes to the results framework to ensure that outcome indicators allow to track progress towards all aspects of the PDO, reflect changes introduced in the scope of Project-financed activities and capture the impact of the earthquake in certain baseline and expected target values.** It is also clarified that for water supply and sanitation, “sustainability” is reflected through the “working ratio”, as it allows to measure progress towards EPAM’s financial sustainability; and for urban mobility, it will be reflected through the implementation and adoption of a road data management system, as it would evidence a more proactive approach of the Municipality of Manta in the field of road asset management and maintenance. Tables 3 and 4 below summarize the proposed changes to the PDO and intermediate results indicators, respectively.

TABLE 3: PROPOSED CHANGES TO THE PDO INDICATORS

PDO Indicators	
Indicator	Proposed Change and Rationale
Working ratio	Change in the target value and date. After the 2016 Earthquake, EPAM’s revenues decreased drastically, as a consequence of the reduction in the number of active clients (mainly in the ground zero area) and the increase



in the delinquency rates (as affected population had to cope with the economic consequences of the shock). On the other hand, operational costs increased, mainly due to the increase of corrective maintenance activities. The new target value for this indicator for the new proposed project closing date is 70 percent. This PDO indicator is aimed at measuring improvements of the financial sustainability of water supply and sanitation services

Continuity of water supply service

Change in the calculation methodology and target date. The value of the allowable minimum pressure in defined District Metering Areas was revised from 12.5 meters of water column (mwc) to 10 mwc, a pressure considered sufficient to ensure continuity of service supply. This pressure is the one considered for the continuity of the key performance indicator used to determine variable payments to the PBC contractor. The target date is revised to match the proposed revised project closing date. This PDO indicator is aimed at measuring improvements in the quality of water supply services.

Household sewerage connections that are benefiting from rehabilitation works undertaken by the project

Change in the target value and date and change of type of indicator. The target value is revised downwards as a consequence of the scaling up of Component 1 activities, required to fund Component 2 incremental costs. The new end target value is 15,500. This indicator was originally an intermediate results indicator, and is recategorized as a PDO indicator to allow measuring improvements in the quality of sanitation service.

Roads in good and fair condition as a share of total roads

Dropped. This indicator is dropped because: (i) there is uncertainty of the effects of the earthquake on the condition of the existing road network, and, therefore, on the baseline value of this indicator; (ii) it does not effectively measure mobility (development outcome), but rather road network condition (an intermediate outcome); and (iii) is duplicative of one of the Component 2 intermediate result indicators (Km of roads rehabilitated).

Average daily cyclist traffic along Par Vial

Dropped. To measure improvements in non-motorized (pedestrians and cyclists) traffic along “upgraded streets” (see definition below), it is recommendable to focus on improvements in pedestrian rather than cyclist mobility since the former have a greater participation in the mobility of the city. For this reason, this indicator has been replaced by the “walkability index” explained below.

Walkability of upgraded streets

New indicator. Although pedestrian mobility and accessibility is a key aspect of the PDO, there was no indicator under the original Results Framework to track the Project’s impact in this area. Walkability indices have been utilized in a number of contexts to assess cities’ friendliness to pedestrians. It is, therefore, proposed to adapt one such index, developed by Babinard et. al. (2017) for use in the sub-Saharan African context, as a PDO indicator for the present project. The indicator would summarize and arithmetically combine a number of different environmental factors related to walkability to a single index on a one-to-ten scale, based on weights agreed to by local experts during a workshop held in Manta in February 2018. Annex 1 includes a detailed description



of this indicator and an explanation on how baseline and target values were calculated. This PDO indicator is aimed at measuring improvements in the quality of urban mobility.

Number of people provided with paved access to their houses in lower-income neighborhoods

New indicator. The original result framework failed to capture the benefits that the project was bringing to people living in peri-urban areas with dirt roads that were provided with “weatherproof” paved access. This includes street paving, resurfacing and construction of access stairways, allowing for improved access to houses in lower-income neighborhoods. This PDO indicator is aimed at measuring improvements in the quality of urban mobility.

Travel time in public transport along Par Vial

New indicator. Although mobility and accessibility by public transport is a key aspect of the PDO, no indicator was included under the original Results Framework to track the Project’s impact in this area. The indicator that had been included in the original results framework – percent of roads in good and fair condition – does not measure mobility and accessibility *per se* (that is, the expected development outcome) but rather changes in the quality of the road network (at best, a tangentially relevant intermediate outcome). The proposed new indicator is intended to capture improvements in road mobility in the Par Vial, one of the main corridors of the city. The organization of Avenues 113 and 4 of November in a “Par Vial” lead to an improvement in the flows of vehicles by reducing interference, and with it, the improvement of travel times of public transport that uses these roads. Based on information provided by the operators of the public transport service that use these roads, travel time in public transport along Par Vial will be reduced to 10 minutes. This PDO indicator is aimed at measuring improvements in the quality of urban mobility.

Implementation and adoption of a road data management system

Change of the end target date and change of type of indicator. The extension of the target date is required to match the proposed project closing date extension. This indicator was originally an intermediate results indicator, and is recategorized as a PDO indicator to allow for measuring improvements in urban mobility sustainability, since the implementation and adoption of a road data management system would evidence a more proactive approach of the Municipality of Manta in the field of road asset management and maintenance.

TABLE 4: PROPOSED CHANGES TO INTERMEDIATE RESULT INDICATORS

Component 1 Intermediate Results Indicators

Indicator	Proposed Change and Rationale
New piped household water connections that are resulting from the project intervention	Change in the target value and date. The target value is revised downwards as a consequence of the scaling up of Component 1 activities, required to fund Component 2 incremental costs. The new end target value is 1,500.



Piped household water connections that are benefiting from rehabilitation works undertaken by the project

No change.

New household sewer connections constructed under the project

Change in the target value and date. The target value is revised downwards as a consequence of the scaling up of Component 1 activities, required to fund Component 2 incremental costs. The new end target value is 1,500

Household sewerage connections that are benefiting from rehabilitation works undertaken by the project

Change in the target value and date. The target value is revised downwards as a consequence of the scaling up of Component 1 activities, required to fund Component 2 incremental costs. The new end target value is 15,500

Water production macrometering

No change.

Component 2 Intermediate Results Indicators

Indicator

Proposed Change and Rationale

Roads rehabilitated, Non-rural

Dropped. To gain granularity this indicator has been disaggregated in two: km of streets roads repaved and roads regenerated.

Km streets paved and repaved

New indicator. This indicator refers to urban street paving and resurfacing of roads in poor conditions, allowing for improved access in lower-income neighborhoods, enhanced road mobility and for lower vehicle operating costs for motorized traffic (all vehicle types). The end target value is 15 Km.

Km of upgraded streets

New indicator. This indicator refers to urban streets upgrading, consisting sidewalk widening and adaptation to enhance mobility of disabled people, burying of telecommunications and electrical wiring, installation of street furniture, upgraded bus stops and tree planting. The end target value is 13 Km.

Average daily pedestrian traffic along Par Vial

Dropped. This indicator will be replaced by the PDO indicator on walkability.

Number of km of quality cycle infrastructure implemented

Change in the target value and date. The bike lane to be constructed along Flavio Reyes was finally not executed as per the request of local business (Flavio Reyes has an intense commercial activity). The new end target value is 11.2 Km.

Component 3 Intermediate Results Indicators

Indicator

Proposed Change and Rationale

Number of water connections activated under the Project

Change in the target value and date. As foreseen at appraisal, the end target of this indicator is updated based on the information gathered through the update of EPAM’s client data base. The new end target value is 2,000.



Number of water utilities that the project is supporting	No change.
Accounts receivable	Dropped. While the Project is supporting the improvement of commercial management activities through the actualization of the client data base and the improvement of the billing and other commercial process, it is not providing any support to the reduction of historic accounts receivable. A specific program to reduce accounts receivable have being included in the PBC signed by EPAM and Veolia and will be implemented in coming years. The RP proposes to switch to a different indicator meant to measure the impact on EPAM commercial performance that has a closer link with activities supported under component 3 of the project: billing collection efficiency.
EPAM’s Billing collection efficiency	New. Bills collected over bills issued in each year.
Commercial system in EPAM updated and operational	Change of the end target date. To match the proposed project closing date extension
Preparation of a multi-annual road maintenance strategy	Dropped. This activity was dropped from the scope of the Project to liberate funds required to develop an urban mobility plan.
Preparation of an urban mobility plan	New.
Preparation of an urban road safety plan	Dropped. This activity was dropped from the scope of the Project as it is being developed under a standalone technical assistance activity.
Implementation of a road data management system	Change of the end target date. To match the proposed project closing date extension

Component 5 Intermediate Results Indicators

Indicator	Proposed Change and Rationale
Emergency repair works, including the hydraulic isolation of Tarqui Zone carried out	No change.
Two replaced pumping systems for the Caza Lagarto and Ceibal water treatment plants operational	Change of the end target date. To match the proposed project closing date extension



III. SUMMARY OF CHANGES

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

IV. DETAILED CHANGE(S)

RESULTS FRAMEWORK

Project Development Objective Indicators



Working ratio				
Unit of Measure: Percentage				
Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	88.00	88.00	70.00	Revised
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
Continuity of water supply service				
Unit of Measure: Hours				
Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	14.00	17.00	24.00	Revised
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
Roads in good and fair condition as a share of total classified roads				
Unit of Measure: Percentage				
Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	50.00	50.00	62.00	Marked for Deletion
Date	31-Aug-2013	28-Apr-2017	30-Jun-2018	
Average daily cyclist traffic along Par Vial				
Unit of Measure: Number				
Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	400.00	400.00	505.00	Marked for Deletion
Date	31-Aug-2013	28-Apr-2017	30-Jun-2018	
Travel time in public transport along Par Vial				
Unit of Measure: Minutes				
Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	15.00	15.00	10.00	New
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
Walkability of upgraded streets				
Unit of Measure: Percentage				



Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	4.80		6.00	New
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
Number of people provided with paved access to their houses in lower-income neighborhoods Unit of Measure: Number Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	22100.00	22100.00	New
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
Household sewerage connections that are benefiting from rehabilitation works undertaken by the project Unit of Measure: Amount(USD) Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	700.00	15500.00	New
Date	06-Aug-2013	20-Apr-2018	28-Jun-2019	
Implementation and adoption of a road data management system Unit of Measure: Yes/No Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	No	No	Yes	New
Date	08-Aug-2013	09-Apr-2018	30-Jun-2019	

Intermediate Indicators

New piped household water connections that are resulting from the project intervention Unit of Measure: Number Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	0.00	1500.00	Revised
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	



Piped household water connections that are benefiting from rehabilitation works undertaken by the project Unit of Measure: Number Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	0.00	15000.00	Revised
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
New household sewer connections constructed under the project Unit of Measure: Number Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	0.00	1500.00	Revised
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
Household sewerage connections that are benefiting from rehabilitation works undertaken by the project Unit of Measure: Number Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	700.00	19100.00	Marked for Deletion
Date	31-Aug-2013	30-Nov-2017	30-Jun-2018	
Water production macro-metering Unit of Measure: Percentage Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	25.00	100.00	Revised
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
Number of water connections activated under the Project Unit of Measure: Number Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	0.00	2000.00	Revised
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
Number of water utilities that the project is supporting Unit of Measure: Number				



Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	1.00	1.00	Revised
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
Accounts receivable Unit of Measure: Months Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	13.00	13.00	7.00	Marked for Deletion
Date	31-Aug-2013	28-Apr-2017	30-Jun-2018	
Roads rehabilitated, Non-rural Unit of Measure: Kilometers Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	10.50	41.00	Marked for Deletion
Date	31-Aug-2013	28-Apr-2017	30-Jun-2018	
Average daily pedestrian traffic along Par Vial Unit of Measure: Number Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	2500.00	2500.00	3150.00	Marked for Deletion
Date	31-Aug-2013	28-Apr-2017	30-Jun-2018	
Number of km of quality cycle infrastructure implemented Unit of Measure: Kilometers Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	1.28	11.20	Revised
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
Preparation of a multi-annual road maintenance strategy Unit of Measure: Yes/No Indicator Type: Custom				



	Baseline	Actual (Current)	End Target	Action
Value	No	No	Yes	Marked for Deletion
Date	31-Aug-2013	28-Apr-2017	30-Jun-2018	
Preparation of an urban road safety plan Unit of Measure: Yes/No Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	No	No	Yes	Marked for Deletion
Date	31-Aug-2013	28-Apr-2017	30-Jun-2018	
Implementation of a road data management system Unit of Measure: Yes/No Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	No	No	Yes	Marked for Deletion
Date	31-Aug-2013	28-Apr-2017	30-Jun-2018	
Commercial system in EPAM updated and operational Unit of Measure: Yes/No Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	No	No	Yes	Revised
Date	01-May-2016	31-Dec-2017	30-Jun-2019	
Emergency repair works, including the hydraulic isolation of Tarqui Zone carried out Unit of Measure: Yes/No Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	No	Yes	Yes	No Change
Date	01-May-2016	28-Apr-2017	30-Nov-2016	
Two replaced pumping systems for the Caza Lagarto and Ceibal water treatment plants operational Unit of Measure: Yes/No Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action



Value	No	No	Yes	Revised
Date	01-May-2016	31-Dec-2017	30-Jun-2019	
Preparation of an Urban Mobility Plan				
Unit of Measure: Yes/No				
Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	No	No	Yes	New
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
Km streets paved and repaved				
Unit of Measure: Kilometers				
Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	6.86	15.00	New
Date	31-Aug-2013	31-Dec-2017	30-Jun-2019	
Km of upgraded streets				
Unit of Measure: Kilometers				
Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	0.00	5.42	13.00	New
Date	31-Aug-2013	31-Jan-2018	30-Jun-2019	
EPAM's Billing collection efficiency				
Unit of Measure: Percentage				
Indicator Type: Custom				
	Baseline	Actual (Current)	End Target	Action
Value	68.00	73.00	80.00	New
Date	31-Dec-2014	31-Dec-2017	30-Jun-2019	



COMPONENTS

Current Component Name	Current Cost (US\$M)	Action	Proposed Component Name	Proposed Cost (US\$M)
Component 1: Investments in Water Supply and Sewerage	38.70	Revised	Component 1: Investments in Water Supply and Sewerage	41.00
Component 2: Investments in Road Improvement	44.70	Revised	Component 2: Investments in Road Improvement	45.20
Component 3: Institutional Strengthening	7.60	Revised	Component 3: Institutional Strengthening	3.90
Component 4: Project Management	14.30	Revised	Component 4: Project Management	16.30
Component 5: Emergency Component	10.30	Revised	Component 5: Emergency Component	9.20
TOTAL	115.60			115.60

LOAN CLOSING DATE(S)

Ln/Cr/Tf	Status	Original Closing	Revised Closing(s)	Proposed Closing	Proposed Deadline for Withdrawal Applications
IBRD-82890	Effective	30-Jun-2018		30-Jun-2019	30-Oct-2019

REALLOCATION BETWEEN DISBURSEMENT CATEGORIES

Current Allocation	Actuals + Committed	Proposed Allocation	Financing % (Type Total)	
			Current	Proposed
IBRD-82890-001 Currency: USD				
iLap Category Sequence No: 1	Current Expenditure Category: GO, CW, NCS, CS - Part 1			
38,700,000.00	2,009,688.73	41,000,000.00	100.00	100.00
iLap Category Sequence No: 2	Current Expenditure Category: GO, CW, NCS, CS - Part 2			
44,700,000.00	26,034,742.77	45,200,000.00	100.00	100.00



iLap Category Sequence No: 3	Current Expenditure Category: GO, CW, NCS, CS, TR - Part 3			
5,900,000.00	127,188.11	3,900,000.00	100.00	100.00
iLap Category Sequence No: 4	Current Expenditure Category: GO, CS, NCS, CW, TR - Part 4			
400,000.00	419,450.13	700,000.00	100.00	100.00
iLap Category Sequence No: 5	Current Expenditure Category: GO, CS, NCS, CW - Part 5			
7,800,000.00	785,161.84	6,700,000.00	100.00	100.00
iLap Category Sequence No: 6	Current Expenditure Category: Operating Costs - Part 5			
2,500,000.00	2,485,088.58	2,500,000.00	80.00	80.00
Total	100,000,000.00	31,861,320.16	100,000,000.00	

DISBURSEMENT ESTIMATES

Change in Disbursement Estimates

Yes

Year	Current	Proposed
2014	0.00	0.00
2015	5,000,000.00	5,000,000.00
2016	0.00	0.00
2017	45,000,000.00	27,000,000.00
2018	50,000,000.00	40,000,000.00
2019	0.00	28,000,000.00



ANNEX 1 CALCULATION OF WALKABILITY INDEX.

1. The Walkability Index proposed for use as a PDO indicator is based on the walkability assessment methodology proposed by Babinard, et. al (2017). They use the following criteria in identifying their methodology:

- Importance for pedestrian mobility: The index should rely on a compact set of indicators that have the largest impact on walkability;
- Difficulty of obtaining data: In order to scale the survey at the city level, the index must rely on data that are easily captured;
- Data reliability: The index should rely on data captured accurately; and
- Data subjectivity: Results should be consistent across multiple surveyors.

2. Index of "walkability" on a 1-to-10 scale, derived by measuring 20 internationally recognized street characteristics that enhance proclivity to walk. The parameters adopted for the construction of the index, adapted from Babinard et. al (2017) are shown in the following table, with their respective weightings:

Contributing Characteristics		Weight
Links	Predominant use of the ground floor	7 %
	Sidewalk width (sidewalk coverage more than 2 m wide)	9 %
	Does sidewalk have ramps to smooth slope changes?	6 %
	Presence of doors and windows in the façade	4 %
	Sidewalk lighting	8 %
	Condition of the sidewalk (sidewalks > 2 m)	8 %
	Shade on the sidewalk	4 %
	Presence of street vendors	2 %
	Sellers blocking the sidewalk?	2 %
	Sidewalk invaded by vehicles?	6 %
	Number of crossings half a block away with traffic control	2 %
	Number of shelters half a block away with traffic control	2 %
	Number of entrance to the buildings	4 %
	Number of obstacles to pedestrian sidewalk locations	6 %
	Presence of open drains	2 %
Nodes	Number of lanes that converge at the intersection	8 %
	Number of approaches that have traffic flow control signals	8 %
	Number of intersection crossing with refuge	3 %
	Presence of access ramps to the sidewalks	6 %
	Presence of special sidewalk for the blind	6 %

3. The weights in the right-hand column were developed by consensus among invited local transport experts, during a workshop.

4. For each evaluated link or node (that is, street segment or intersection), information on the baseline condition has been compiled for each of the characteristics included in the table above, using either Google Earth / Google Street View or direct observation, and recorded as a 1 to 4 or 1 to 5 scale (with the exception of predominant use of ground floor, which is assessed on a scale of 6 categorical variables deemed to be ordinal in their correlation with walkability depending on the characteristic) on the basis of pre-defined decision rules. A complete table of these decision-rules is included at the end of this Annex. Pedestrian flows (either measured or estimated at the peak hour of the day) are used as a global weight factor for each link and node in construction of the total index.



Parameter	Category
Predominant use of ground floor	
• Light industry	1
• Office	2
• Residential	3
• Automotive	4
• Commercial	5
Sidewalk width (Sidewalk coverage more> 2 m wide)	
• <10 percent	1
• 10 - 40 percent	2
• 40 -70 percent	3
• 70 -100 percent	4
Does the sidewalk have ramps to smooth slope changes?	
• Many places with slope change without ramp	1
• Some places with slope change without ramp	2
• Few places with slope change without ramp	3
• No slope changes without ramp	4
Presence of doors and windows in the facade	
• 60 - 70%	1
• 70 - 80%	2
• 80 - 90%	3
• > 90%	4
Sidewalk lighting	
• Without lighting	1
• Poor lighting	2
• Regular lighting	3
• Good lighting	4
Condition of the sidewalk (sidewalks> 2 m)	
• No sidewalk	1
• Low condition	2
• Moderate condition	3
• Good condition	4
Shade on the sidewalk	
• Without shade	1
• Shade poor	2
• Moderate shade	3
• Good shade	4
Presence of street vendors	
• High	1
• Moderate	2
• Low	3
• Without sellers	4
Sellers blocking the sidewalk?	
• High presence of vendors blocking the sidewalk (<2m wide free)	1
• Moderate presence of vendors blocking the sidewalk (<2m free width)	2
• Sellers on the sidewalk but keep 2m free	3
• No sellers	4
Sidewalk invaded by vehicles	
• Very blocked	1
• Moderately blocked	2
• Slightly blocked	3
• Without blocking	4