Document of the Interamerican Development Bank

Haiti

Transport And Departmental Connectivity

**HA-L1104**

**Monitoring and Evaluation Plan**

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Abbreviations

|  |  |
| --- | --- |
| AADT | Annual Average Daily Traffic |
| ADT | Average Daily Traffic |
| BCS | Bank’s Country Strategy |
| BRH | Bank of the Republic of Haiti |
| EA | Environmental Analysis |
| ESMP | Environmental and Social Management Plan |
| ESMR | Environmental and Social Management Report |
| EMS | Environmental Management System |
| FER | *Fond d’Entretien Routier* (Fund for Road Maintenance) |
| GDP | Gross Domestic Product |
| GoH | Government of Haiti |
| IDB | Inter-American Development Bank |
| IRI | International Roughness Index |
| IRR | Internal Rate of Return |
| MDTF | Multi-Donor Trust Fund |
| MTPTC | Ministry of Public Works, Transport and Communications |
| NPV | Net Present Value |
| PSTDH | Program to Support Transport Sector Development in Haiti |
| PAP | Port-au-Prince |
| PCR | Project Completion Report |
| PMR | Progress Monitoring Report |
| POD | Proposal for Operation Development |
| RN | *Route Nationale* (National Route) |
| RN (1)(2)..(X) | Route Nationale 1, 2 ……..X |
| RS | Road Safety |
| ToR | Terms of Reference |
| VOC | Vehicle Operating Cost |
|  |  |

# Introduction

* 1. The purpose of this document is to present the Monitoring and Evaluation Plan for the project “Transport and Departmental Connectivity”.
  2. The program’s objective is to continue improving the quality, accessibility, and safety conditions of Haiti’s transport infrastructure through an increase in paved road coverage and the rehabilitation and upgrading of infrastructure and departmental roads connecting production centers to local markets. The program will also promote efficiency improvements in the sector by incorporating the works into road maintenance management systems and by building capacity at the MTPTC.
  3. This operation project sample will finance interventions along the RN-5 corridor which the Haitian government has identified as a strategic route to provide connectivity between Port-au-Prince and the central region with Port-de-Paix and the northeast region.

1.3 Figure 1 shows the proposed monitoring and evaluation framework for the project, which is based on industry-recommended practices. The first level shows the various outputs that the project is intended to achieve; the achievement of these outputs will be subject to the monitoring plan described in Section II of this document. The middle level shows the outcome indicators; the evaluation plan for these indicators is described in Section III of this document. Finally, the last level contains the project objective; this objective will be achieved by meeting the targets listed for each indicator.

**Figure 1: Monitoring and Evaluation Framework**

|  |
| --- |
| **Overall objective** |
| The program’s objective is to continue improving the quality, accessibility, and safety conditions of Haiti’s transport infrastructure through an increase in paved road coverage and the rehabilitation and upgrading of infrastructure and departmental roads connecting production centers to local markets. The program will also promote efficiency improvements in the sector by incorporating the works into road maintenance management systems and by building capacity at the MTPTC. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Outcome Indicators** | | | | | | | | |
| Increased accessibility of primary road network | | | | Increased road quality | | Increased road safety | Promotion of efficiency improvements into the road sector | |
| Paved road density in the Artibonite Department | Paved road system total length | Average travel time | Annual traffic in road section | International Roughness Index | Vehicle operating cost | Number of road accidents | Average travel times of road maintained | Average vehicle operational costs of road maintained |

|  |
| --- |
| **Output Indicators** |
| **Component 1. Civil works on national road network** |
| National Roads Built or Upgraded (Rehabilitated) (km) |
| Control tower at Intl. Airport Toussaint Louverture built and equiped (un) |
| Roads Maintained (km) |
| Technical and socio-environmental audits (un) |
| **Component 2. Civil works on secondary and rural road network** |
| Secondary and Rural Roads Built or Upgraded (Rehabilitated) (km) |
| **Component 3. Strengthening of road infrastructure sector** |
| Road maintenance system designed and implemented (un) |
| Asset and Equipment Management System designed and implemented (Number of Government officials trained) |
| Road safety baseline assessment (un) |
| Road safety campaigns designed and implemented (un) |
| Gender studies (un) |
| **Component 4. Strengthening of road infrastructure sector** |
| Bridges built or rehabilitated (un) |
| Bridge maintenance system design and implemented (un) |

# Monitoring

1. Output Indicators

2.1 The project monitoring indicators refer to the progress in achieving the specific outputs expected for each component, as indicated in Table 1 below. The details about each indicator’s expected progress are given in Annex II to the PDP – Project Results Framework, according to the timeline in the Annual Work.

The following table shows the output indicators, their definition, how frequently they are measured, and how they are verified:

Table 1: Transport and Departmental Connectivity (HA-L1104)

- Output Indicators by Component

|  |  |  |  |
| --- | --- | --- | --- |
| **Indicators by Component** | **Definitions** | **Frequency of Measurement** | **Means of Verification** |
| **Component 1: Civil works on national road network** | | | |
| National roads built or upgraded (rehabilitated) (km) | Rehabilitated: kilometers of deteriorated roadway that have been rehabilitated | Semiannually | Certificate of acceptance of work. Oversight Reports. Reports from the MTPTC. |
| Control tower at Intl. Airport Toussaint Louverture built and equipped (un) | Design, civil works and equipment for the airport | Semiannually | Certificate of acceptance of work. Oversight Reports. |
| Roads Maintained (km) | Maintained: kilometers of roadway maintained, according to criteria defined by the MTPTC prior to the start of the work and approved by the Bank | Semiannually | Certificate of acceptance of work. Oversight Reports. Reports from the MTPTC. |
| Technical and socio-environmental audits (un) | Technical: related to engineering. Socio-environmental: related accomplishment of Bank’s Safeguards | Semiannually | Consultant reports |
| **Component 2: Civil works on secondary and rural road network** | | | |
| Secondary and rural roads built or upgraded (rehabilitated) (km) | Rehabilitated: kilometers of deteriorated roadway that have been rehabilitated | Semiannually | Certificate of acceptance of work. Oversight Reports. Reports from the MTPTC. |
| **Component 3: Strengthening of road infrastructure sector** | | | |
| Road maintenance system designed and implemented (un) | Design and installation of software able to manage maintenance activities | Annually | Reports from the MTPTC |
| Asset and Equipment Management System designed and implemented | Maintenance strategy and procedures training | Semianual | Annual report from maintenance unit and departmental directions |
| Road safety baseline assessment (un) | Baseline for accidents registered under the Computer Based System installed at the DCPR (Direction de la circulation et de la police Routière) for Road Safety on National Roads | Annually | Reports from Road Safety Consultant |
| Road safety campaigns designed and implemented (un). | Road Safety Campaigns launched via Radio and DCPR to maintain road safety awareness. | Annually | Reports from Road Safety Consultant |
| Gender studies | Studies include: (i) a gender diagnostic to collect information about gender issues in the intervention areas, as well as current gender projects being carried out in Haiti; (ii) a qualitative report about Madan Saras; and (iii) a pilot program to collect data on Madan Saras travel patterns and needs | Annually | Consultant report |
| **Component 4: Bridge upgrade program** | | | |
| Bridges built or rehabilitated (un) | Bridges built or rehabilitated based on MTPTC’s list of 38 prioritized bridges to intervene | Annually | Certificate of acceptance of work. Oversight Reports. Reports from the MTPTC |
| Bridge maintenance system design and implemented (un) | Maintenance strategy and procedures training | Annually | Consultant reports |

1. Instruments for Monitoring Indicators and Gathering Data

2.2 The operation will be executed by the MTPTC with support of the Central Executing Unit (UCE), that supports the Ministry in the execution of transport projects financed mainly by the IDB, and the World Bank (WB). The UCE includes a management structure with a general coordinator, a financial specialist, accountants, and procurement specialist, and a project managers responsible for the projects financed.

2.3 The MTPTC with support of the UCE will be responsible for: (i) gathering information on the various output and outcome indicators included in the Results Framework and for monitoring the program’s progress against the agreed targets; (ii) planning, executing, monitoring, and overseeing all administrative, financial, and accounting procedures; (iii) planning, executing, monitoring, and overseeing procurement processes (including the development and review of technical specifications and terms of reference); (iv) monitoring and evaluating the rehabilitation work through specialized consulting firms engaged for this purpose; (v) implementing the social and environmental plan; (vi) monitoring, recording, and reporting program outcomes using the agreed indicators; (vii) preserving the institutional memory of the program; (viii) preparing, complying with, and reporting on the annual work plans required by the Bank in connection with the use of the resources provided; (ix) preparing reports on the program’s physical and financial progress, as required by the MTPTC and the Bank; and (x) making all necessary information and documents available to the external auditor.

2.4 The main tools to be used to plan the project are:

2.5 **Pluriannual Execution Plan (PEP).** The purpose of the PEP is to propose to the Bank with an annual plan for implementation of the project. The PEP includes all of the activities that will be carried out during a given project implementation period, by output, and it contains a timeline for physical and financial progress. The PEP will include, at minimum, the following information: i) the status of the implementation of the project, broken down by components and outputs; ii) the procurement plan for works, goods, and services, as well as the procurement plan for consulting services, including the budget and expected disbursements; iii) the progress in meeting the project targets and outcomes; iv) the progress in meeting the outcome indicators for each component of the project, according to the Results Matrix and the project implementation timeline; v) problems that have arisen; and vi) solutions that have been implemented.

2.6 **Procurement Plan (PP).** The PP is intended to publicize and provide the Bank with the details of all procurements and contracts that will take place during a given project implementation period. The PP includes procurements that will take place and contracts that will be executed in accordance with the “Policies for the Procurement of Goods and Works financed by the Inter-American Development Bank” (GN-2349-9) and the “Policies for the Selection and Contracting of Consultants financed by the Inter-American Development Bank” (GN-2350-9), as required by the Loan Agreement. The PP must be submitted together with the PEP for review by the Bank, and updated annually or whenever necessary throughout the implementation of the project. The Bank will review contracts on an ex-ante basis in accordance with these policies. In addition to these policies, the “Special Procurement Provisions to Address the Emergency caused by the January 12, 2010, earthquake in the Republic of Haiti” (OP-387-1) will also apply.

**C. Reporting**

2.7 The main project monitoring reports are the Semiannual Progress Report and the Progress Monitoring Reports (PMRs), which are described below**:**

2.8 **Semiannual Progress Report.** The MTPTC will submit to the Bank, in August and February of each year, a Semiannual Progress Report (these reports are a contractual condition of the Bank funding). The Semiannual Progress Reports will describe the program’s physical and financial progress and will summarize the oversight reports on works awarded to contractors, as well as the internal oversight reports on consulting contracts. These reports will form the basis for the PMR reports, which will report the monitoring of the Program and the progress against the performance indicators.

**2.9 Progress Monitoring Reports (PMRs).** The monitoring results will be available when the Progress Monitoring Reports (PMR) are approved, and through the respective access-to-information mechanisms. In special cases, or when necessary, summaries of PMR reports may be disseminated in order to meet specific needs involving the communication of monitoring information.

2.10 In addition, the following program reports will be prepared:

2.11 **Project Completion Report (PCR).** Within 60 (sixty) days following the last disbursement, a report containing the final evaluation of the project will be prepared. This report will include, at minimum: (a) the financial implementation results by component; (b) the achievement of the targets set, according to the agreed outcome indicators; (c) the compliance with contractual commitments; (d) a breakdown of the cost of the works, by type of work; (d) an ex-post result evaluation, based on the model developed ex ante; (f) a discussion of lessons learned; and (d) an evaluation of the implementation of the works, as it relates to social and environmental considerations.

2.12 **Auditing Reports.** Program resources will be used to pay for the technical and socio-environmental audits of the program. Audit of the project’s status will be conducted with a frequency determined by the by the Bank based on the project’s needs. The audit will be performed by an independent firm acceptable to the Bank, in accordance with the terms of reference agreed with the Bank.

2.13 **Reports on Site Visits and Missions.** The Bank will conduct on-site inspection visits on a quarterly basis, in order to monitor the progress in achieving the various planned outputs. In addition, management missions will be conducted annually in order to analyze the progress of the project and address specific issues that have been identified.

1. Coordination, Work Plan, and Budget for Monitoring

2.14 The MTPTC with support of the UCE will track and monitor the program’s implementation and results, from the time when the program becomes eligible until it is completed, which is expected to be in 2020.

2.15 Full costs of the project monitoring activities will be covered with resources of the grant, including: i) functioning of the UCE, which is directly responsible for monitoring the project; ii) oversight contracts; iii) audits; iv) site visits and management missions; and v) engaging consultants to perform the monitoring.

2.16 The monitoring will consist of verifying whether activities are carried out as expected, and whether the specific objectives have been achieved in accordance with the Results Matrix. The monitoring will focus on, among other things, confirming the physical progress of the work—i.e., whether the work originally planned has been completed within the expected timeframes, and whether the work complies with the outputs and objectives originally proposed.

2.17 All the indicators will be verified directly based on the reports from the supervision firms, which will be submitted to the MTPTC on a monthly basis. In turn, the MTPTC will prepare and submit to the Bank Semiannual Progress Reports (¶2.8), which will include a summary of the oversight reports of works awarded to contractors, as well as the internal oversight reports on consulting contracts. The MTPTC will be responsible, firstly, for carrying out the Program monitoring activities in accordance with the framework, scope, and responsibilities described above.

2.18 The MTPTC will verify the progress and impact of the program activities. To this end, it will: (i) gather periodic information about physical progress (activities) and financial progress (funds available and invested); and (ii) maintain, in a current, accessible, and relevant form, information about the performance of project activities and about project resources.

The IDB, for its part, through the Project Leader and Team, will be responsible for coordinating and ensuring that the monitoring plan is of the required technical quality and according to the required timeframe. To this end, the IDB will hold periodic meetings with the parties responsible for implementing this plan and, if necessary, it will request special reports or presentations of results. The Program will be tracked continuously, from the time when it becomes eligible until it is completed, which is expected to be in 2022.

2.20 The financing for monitoring of the Program is ensured by the financing from the Bank.

2.21 Table 2 below summarizes the various project monitoring activities that are expected to be performed; it also summarizes the budget for engaging consulting services and for the work of the MTPTC and the Bank. The MTPTC and the Bank will work together to ensure that these activities are carried out in accordance with this budget.

**Table 2: Summary of Monitoring Activities**

|  |  |  |  |
| --- | --- | --- | --- |
| **Entity** | **Responsibilities** | **Frequency** | **Cost** |
| MTPTC | Discuss and confirm progress reports and, when applicable, propose corrective actions for review by the Bank. Conduct inspection visits of each project. | Semiannually | 3 people x 8 days/year x 5 years x US$300 = US$36,000 |
| Prepare the Pluriannual Execution Plans (PEPs) and Procurement Plans (PPs) and submit them to the Bank. | Annually or as necessary | 2 people x 4 days/year x 5 years x US$300 = US$12,000 |
| Monitoring of the Program Results Matrix. | Semiannually | 1 person x 16 days x US$300 = US$4,800 |
| Social and environmental monitoring of the program. | Quarterly | 2 people x 8 days/year x 5 years x US$300= US$24,000 |
| Preparation of semiannual reports. | Semiannually | 2 people x 4 days/year x 5 years x US$300 = US$12,000 |
| Preparation of the PCR report. | Once | 1 person x 10 days x US$300 = US$3,000 |
| Prepare financial and legal information for the project, or any other kind of information required by the Bank about the Program. | Monthly | 1 person x 4 days/year x 5 years x US$300=US$6,000 |
| Create, maintain, and update the Program database, particularly in relation to the indicators. Provide appropriate monitoring of the Project and, in the event of project delays due to external factors affecting the Program, propose corrective measures. | Weekly | 1 person x 8 days/year x 5 years x US$250 = US$10,000 |
| Provide support for internal meetings related to the monitoring of the Program, and provide support for the Bank’s monitoring missions. | Potential | 1 person x 32 days x US$250=US$8,000 |
| Bank | Examine and approve the PEPs and the PPs. | Annually | 1 person x 8 days/year x 5 x US$600 =US$24,000 |
| Examine the Progress Reports, hold monitoring and monitoring meetings, and, if applicable, make recommendations. | Semiannually | 1 person x 8 days/year x 5 years x US$600 = US$24,000 |
| Examine and review requests for disbursements. | Bimonthly | 1 person x 32 days x US$600=US$19,200 |
| Examine and review audited financial statements. | Annually | 1 person x 32 days x US$600=US$19,200 |
| Contingencies. | Potential | US$7,800 |
| **TOTAL** | | | **US$210,000** |
| **TOTAL Execution Unit** | | | **US$115,800** |
| **TOTAL Bank Oversight** | | | **US$86,400** |

The planned monitoring activities are shown in table 3, which includes a list of the main activities, their associated outputs, and the timeframe for completion:

**Table 3: Transport and Departmental Connectivity – Monitoring Work Plan**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Transport and Departmental Connectivity – HA-L1104**  **Monitoring - Work Plan** | | | | | | | | | | | | | | | | | | | | | |
| **Main Monitoring Activities/Outputs by Activity** | | Year 2019 | | | | Year 2020 | | | | Year 2021 | | | | Year 2022 | | | | Year 2023 | | | |
|  |  | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV |
| **I** | **Civil works on national road network Indicators** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | *Information Gathering* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Kilometers of the RN5 that have been rehabilitated | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  |
|  | Engineering designs and studies developed | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  |
|  | Kilometers of Roads maintained | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  |
|  | Road safety baseline assessment | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  |
|  | Road safety campaigns | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  |
|  | Bridges built or rehabilitated | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  |
|  | Technical and socio-environmental audits | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  |
| **II** | **Civil works on secondary and rural road network Indicators** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | *Information Gathering* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Kilometers of the Secondary and Rural roads built or upgraded (rehabilitated) | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  |
| **III** | **Strengthening of Road Infrastructure Sector Indicators** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | *Information Gathering* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Maintenance system designed and implemented | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  |
|  | Training for the Maintenance Unit personnel | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  |
|  | Gender studies | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  |
| **IV** | **Monitoring and Evaluation and administration** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | *Information Gathering* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pluriannual execution plan update | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  |
|  | Project evaluation reports issued by MTPTC |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  | X |
| **VI** | **Information processing and analysis** | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |
| **VII** | **Progress Monitoring Report** |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  |  |  |  |
| **VIII** | **Final Monitoring Report on the Program** |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  | X | X |  |  |  |

# Evaluation of the Project

1. Key Evaluation Questions

3.1 The specific evaluation questions are (i) What was the result of the rehabilitation and the routine maintenance of the Gros Morne – Port de Paix roadway, in relation to vehicle operating costs and travel times on the roadway; (ii) What was the result of the rehabilitation and the routine maintenance of the Gros Morne – Port de Paix roadway, in relation to the International Roughness Index (IRI) on the roadway.

1. **Key Outcome Indicators and their Methodology**

3.2 The methodology for calculating each of the project outcome indicators is presented below.

3.3 Most of the desired results of the implementation of the Program will occur after the implementation of each component is complete. At that point, each outcome indicator will be measured. This approach will provide a basis for performing a more appropriate result evaluation, depending on the component.

3.4 The indicators related to vehicle operating cost, travel times, and the road roughness index will be verified upon completion of the rehabilitation work and also upon completion of the maintenance work.

3.5 “Project evaluation” refers to verifying that the proposed objectives have been achieved. This is done by verifying that the selected output and result indicators have reached the expected levels. This verification will be performed after the activities are completed, and verifications will continue to be performed periodically in order to ensure that the expected levels are achieved.

3.6 The results obtained will enable the Bank’s Transport Division and the project implementer to better design future projects, and to adjust the strategy sector in Haiti (and will provide a basis for doing so in other countries in the region).

1. Ex-Ante Cost/Benefit Analysis of the Gros Morne – Port-de-Paix Roadway Rehabilitation Project.

3.7 For the economic evaluation, a cost/benefit analysis was performed in relation to the contract for maintenance work on the Gros Morne – Port de Paix roadway. The HDM-4 results indicate that, in the baseline situation, the return indicators show an Economic Net Present Value (ENPV) of US$11.5 million (with a discount rate of 12.0%) and an Internal Rate of Return (IRR) of 16.2%. The IRR value is higher than the minimum acceptable rate of return of 12.0% and is satisfactory. The ENPV, the IRR, and the ENPV/investment ratio are acceptable. Therefore, the Project is considered to have a positive economic return. The economic evaluation report also contains the sensitivity analysis, which confirms the project’s reasonable return.

1. Calculation Methodologies for Outcome Indicators

**(i) Outcome Indicator – Vehicle Operating Costs**

3.8 Both the vehicle operating cost (VOC), measured in USD/veh./km in constant 2014 prices, and the percentage reduction in the VOC are determined. The “with project” and “without project” scenarios are compared, with the savings for each type of vehicle weighted by the share of that type of vehicle as a percentage of the total traffic.

3.9 Because the HDM-4 model has been used for the economic evaluations of each segment, it is stipulated that the VOC (vehicle operating cost) sub-model of this HDM model is used, in order to simplify the calculations.

The following table shows the data, methodology, and sources of the calculation to determine the baseline and target vehicle operating costs:

**Table 4: Vehicle Operating Costs**

**PROJECT: ROUTE No. 1, GROS MORNE – PORT-DE-PAIX Segment**

**Average Operating Costs (US$/veh./km)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Condition** | | **Motorcycle** | **Car** | **Pickup** | **Tap-Tap** | **Bus** | **Two-Axle Truck (C2)** | **Three-Axle Truck (C3)** | **Articulated Truck (C5)** |
| Without works (2017) | | 0.080 | 0.329 | 0.434 | 0.450 | 0.692 | 0.965 | 2.085 | 2.378 |
| With works (2023) | | 0.057 | 0.184 | 0.232 | 0.209 | 0.320 | 0.478 | 1,012 | 1.135 |
|  | Source: Prepared by the authors. | | | | | | | | |

**(ii) Outcome Indicator - Travel Times**

3.10 The travel time in minutes or hours per vehicle is determined for the “without project” and “with project” scenarios, and the average travel time is also determined; each vehicle’s travel time is weighted by the share of that type of vehicle as a percentage of the total traffic.

3.11 Once the work to improve the Gros Morne – Port de Paix segment is complete, a traffic study will be performed in order to determine the volume and composition of the traffic, and to measure the roughness of all segments, prior to the completion of the Project, expected to be in 3 years. Then the model will be run again, with the traffic and roughness that are actually obtained.

The following tables show the data, methodology, and sources of the calculation to determine the baseline and target:

**Table 5: Average Travel Times**

**PROJECT: ROUTE No. 1, GROS MORNE – PORT DE PAIX Segment**

**Average Travel Times (Hours:Minutes)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Condition** | **Motorcycle** | **Car** | **Pickup** | **Bus (1)** | **Two-Axle Truck** | **Three-Axle Truck** | **Articulated Truck** |
| Without works (2017) | 1:50 | 1:50 | 1:50 | 1:53 | 1:52 | 1:51 | 1:57 |
| With works (2023) | 0:34 | 0:34 | 0:33 | 0:39 | 0:41 | 0:37 | 0:42 |
| (1): Does not include time for stops.  Source: Prepared by the authors. | | | | | | | |

As the table makes clear, the vehicle operating costs and travel times for the various categories of vehicles in each segment will decrease significantly.

**(iii) Outcome Indicator – International Roughness Index**

3.12 The average IRI value for the entire length of the roadway was calculated by taking each segment’s IRI in the baseline situation, weighted by that segment’s length as a portion of the total kilometers of the roadway in question. The IRI values for each segment are as follows:

**Table 6: International Roughness Index**

|  |  |  |  |
| --- | --- | --- | --- |
| **Outcome indicators** | **Baseline (2017)** | **Target (2023)** | **Means of Verification/Remarks** |
| International Roughness Index (IRI) on the Gros Morne – Port de Paix route, in m/km (1) | Value of 20 | Value of 2 | Roughness measurements to be taken using specialized equipment (profilometer) |

Roughness would decrease from a value of 10 m/km to a value of 3,5 m/km. Once the program is finished, a new average IRI value will be calculated for the road works completed, and a weighted average will be determined based on the length as a portion of the total kilometers of each roadway in question. This will provide an outcome indicator that can be compared to the baseline level.

1. Methodology for Ex-Post Economic Evaluation of Road Infrastructure Projects

3.13 “Before” and “after” methodologies, along with ex-post cost/benefit analysis, will be used to measure the Program’s outcome indicators. The evaluation is based primarily on use of the *Highway Development and Management Model* (HDM-4).

The ex-post cost/benefit analysis of each of the works financed by the program will use the same model as the ex-ante cost/benefit analysis that was performed as part of the eligibility and feasibility studies of the works. In order to perform the ex-post evaluation, the new amount of traffic on the segment that has been completed and placed into service, as well as the IRI of that segment, must first be calculated. Both the actual investment of the operation and maintenance costs will be included in the ex-post analysis.

1. Instruments

3.14 **Project results report.** After 18 months, counted from the actual date of the first disbursement for the project.

3.15 **Evaluation.** After 18 months from the date the grant becomes effective or after 20% of the commitment of grant resources, whichever comes first, the Bank will conduct and evaluation to include: (i) the initial results of the execution of the program; (ii) processes and results of the procurement processes for the civil works and consultancies; and (iii) evaluation of the progress of civil works.

* 1. Within 60 days after the last disbursement of the grant, a final evaluation will be carried out, including: (i) results of the financial execution by component;   
     (ii) accomplishment of the attained goals according to the CRF; (iii) compliance with contractual arrangements; (iv) detail of the cost of works; (v) lessons learned;   
     (vi) evaluation of the socio-environmental aspects; and (vii) an ex post Cost Benefit Analysis. This methodology will be used to evaluate the program’s effectiveness by replicating the methodology used to evaluate the project’s economic feasibility ex ante. The analysis will study and evaluate the achieved benefits for which improvements are anticipated as identified in the results framework.

1. Coordination, Work Plan, and Budget for Evaluation

3.17 The MTPTC will gather, store, and maintain all of the information, indicators, and parameters, including the semiannual reports, annual work plans, program implementation plans, procurement plans, and intermediate and final reviews, which are necessary to: i) assist the Bank in preparing the Project Completion Report (PCR); and ii) assist the Bank’s Office of Evaluation and Oversight (OVE) in evaluating the result of this project.

3.18 The Bank, acting through its Representation in Haiti and in conjunction with the MTPTC, will be responsible for general oversight of the implementation of the project. The oversight will focus on achievement of the various milestones established in the Annual Work Plan, in order to ensure that the identified result indicators are met.

3.19 In addition to the semiannual management reports that the MTPTC will submit over the course of the implementation of the project, an intermediate evaluation will also be performed in 2015, followed by a final evaluation in 2017. These evaluations will be performed by independent consultants. The evaluations will provide a means of verifying the eligibility of the investments, the degree of compliance with the work plans, the degree to which the expenditures were in line with the budget, and the degree to which physical and impact targets were met.

3.20 Based on these management reports, as well as analysis meetings with the parties implementing the project, the Project Team and the Representation in Haiti will be responsible for preparing the Performance Monitoring Reports (PMRs) and any other document that the Bank may establish for its project cycle.

3.21 The final evaluation of the Program will be included in the Expanded Project Completion Report (XPCR), which will examine the degree to which the objectives of the Program were met, after all of the Program’s components have been implemented. The XPCR will also note lessons learned, to be taken into account when designing and implementing future transportation projects in Haiti and in the region.

3.22 The evaluation activities will be distributed between the MTPTC and the Bank, with a budget of US$90,000.

**Table 9: Transport and Departmental Connectivity – Evaluation Activities and Work Plan**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Main Evaluation Activities** | **2019** | | | | **2029** | | | | **2021** | | | | **2022** | | | | **2023** | | | | **Responsible** | **Cost (US$)\*** |
| **I** | **II** | **III** | **IV** | **I** | **II** | **III** | **IV** | **I** | **II** | **III** | **IV** | **I** | **II** | **III** | **IV** | **I** | **II** | **III** | **IV** |
| **Intermediate evaluation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hiring evaluation team |  |  |  |  |  |  | x |  |  |  |  |  |  |  |  |  |  |  |  |  | MTPTC: Hiring consultant and supervise consultancy  Consultant: Collect and analyze data, prepare report  MTPTC and IDB: Review evaluation report | MTPTC = 6,000 |
| Data Collection |  |  |  |  |  |  |  | x |  |  |  |  |  |  |  |  |  |  |  |  | Consultant = 10,000 |
| Data Analysis |  |  |  |  |  |  |  | x |  |  |  |  |  |  |  |  |  |  |  |  | IDB = 4,000 |
| Final report |  |  |  |  |  |  |  |  | x |  |  |  |  |  |  |  |  |  |  |  |  |
| **Final evaluation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hiring evaluation team |  |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  |  |  |  | MTPTC: Hiring consultant and supervise consultancy  Consultant: Collect and analyze data, prepare report  MTPTC and IDB: Review evaluation report | MTPTC = 16,000 |
| Data Collection |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  |  |  | Consultant = 30,000 |
| Data Analysis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  |  | IDB = 6,000 |
| Final report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  |  |
| **Project Completion Report** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data Collection |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  |  | IDB and MTPTC: Prepare and review PCR | MTPTC = 6,000 |
| Final report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  | IDB = 12,000 |
| **Total** | | | | | | | | | | | | | | | | | | | | | | **US$ 90,000** |
| **Total Execution Unit** | | | | | | | | | | | | | | | | | | | | | | **US$ 28,000** |
| **Total Bank** | | | | | | | | | | | | | | | | | | | | | | **US$ 22,000** |

\*Note: Full costs of the project monitoring activities will be covered with resources of the grant, including: i) functioning of the UCE, which is directly responsible for monitoring the project; ii) oversight contracts; iii) audits; iv) site visits and management missions; and v) engaging consultants to perform the monitoring