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Haiti

Support for Haiti’s Transportation Sector V

**HA-L1098**

**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 |
| UCE | *Unité Centrale d’Exécution* (Central Execution Unit) |
| CIDA | Canadian International Development Agency |
| DR | Dominican Republic |
| 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, Transportation, Energy, and Communications |
| NPV | Net Present Value |
| PSTDH | Program to Support Transportation 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

1.1 The purpose of this document is to present the Monitoring and Evaluation Plan for the project “Support for Haiti’s Transport Sector V”. The overall objective of the project is to increase the competitiveness and connectivity in Haiti by reducing transportation costs and providing safer transport services, thus promoting the country’s regional and international integration. Specific objectives include the rehabilitation of a road segment on Route Nationale 1 (RN-1) between Camp Coq and Vaudreuil and multiple works of rehabilitation, improvement and maintenance in Haiti’s primary and secondary road networks.

1.2 The project fosters regional and international integration by improving one of Haiti’s main corridors: the RN-1, a 250 km corridor, extending from PAP to the second largest city, Cap-Haitian, in the North (home to Haiti’s second most important port). The corridor plays a key role in international trade facilitation and regional integration as it connects the two most important seaports and airports with the major cities and productive regions. The project is structured around the following main components: 1) Civil works and supervision, 2) Strengthening of Road Infrastructure Sector, and 3) Engineering, Socio-environmental Studies and administration.

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 overall objective is to contribute to improving connectivity between different regions of the country, by reducing vehicle operating costs and travel times, thus fostering regional and international integration and economic development. |

|  |  |  |  |
| --- | --- | --- | --- |
| **Outcome Indicators** | | | |
| Reduction in vehicles operating costs | Average travel time | International Roughness Index (IRI), in m/km) | Number of accidents |

|  |
| --- |
| **Output Indicators** |
| **Component 1: Civil Works and Supervision** |
| Roads Built or Upgraded (Rehabilitated) (km) |
| Primary and Secondary Roads Maintained (km) |
| Social & environmental mitigation and compensations (reports) |
| **Component 2: Strengthening of Road Infrastructure Sector** |
| Acquisition of maintenance equipment and supplies (process) |
| Maintenance system designed and implemented (un) |
| Maintenance unit personnel trained (un) |
| Personnel trained in road safety strategy (un) |
| Women trained in tasks related to infrastructure works (un). |
| **Component 3: Engineering, Socio-environmental Studies and administration** |
| Engineering designs and studies developed (un) |
| Pluriannual execution plan update (un) |
| Project evaluation reports issued by UCE (un) |
| Financial and socio-environmental audit reports (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: Support for Haiti’s Transportation Sector Project V (HA-L098)

- Output Indicators by Component

|  |  |  |  |
| --- | --- | --- | --- |
| **Indicators by Component** | **Definitions** | **Frequency of Measurement** | **Means of Verification** |
| **Component 1: Civil Works and Supervision** | | | |
| 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 UCE. |
| Primary and Secondary Road 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 UCE. |
| Socio-environmental mitigation and compensations (reports) | Reports prepared by a specialized professional documenting all socio-environmental impacts and mitigation measures on affected areas due to execution of proposed road works (sample project and others eligible in the Multiple works program) | Annually / Semiannually | Environmental and Social Management Reports in compliance with IDB’s directives and policies issued by specialized firms (reports). |
| **Component 2: Strengthening of Road Infrastructure Sector** | | | |
| Acquisition of maintenance equipment and supplies (process) | Processes launched for the acquisition of maintenance equipment and supplies at departmental directions. | Annually | Annual reports from maintenance unit and departmental directions |
| Maintenance system designed and implemented (un) | Design and installation of software able to manage maintenance activities | Annually | Reports from the UCE |
| Maintenance unit personnel trained (un) | Maintenance strategy and procedures training | Annually | Annual report from maintenance unit and departmental directions |
| Personnel trained in road safety strategy (un) | Road safety explanation, education, and training workshops | Annually | Reports from the UCE |
| Women trained in tasks related to infrastructure works (un). | Women trained in the use of heavy machinery | Annually | Reports from the UCE |
| **Component 3: Engineering, socio-environmental studies and administration** | | | |
| Engineering designs and studies developed (un). | All the studies necessary to start the procurement phase, including engineering, social and environment. | Semiannually | Reports from the UCE |
| Pluriannual Execution Plan Update (un) | Project execution planning | Annually | Reports from the UCE |
| Project evaluation reports issued by UCE (un). | Intermediate and final project evaluation report | Mid-term and final | Reports from the UCE |
| Financial and socio-environmental audit reports (un). | Financial and socio-environmental audits by well-known, independent firms | Annually | Auditing reports |

1. Instruments for Monitoring Indicators and Gathering Data

2.2 The MTPTC will be responsible for administering this program, and the UCE will be responsible for managing the operational relationship with the Bank. The UCE is part of the MTPTC’s organizational structure, under the MTPTC’s Head Office, and the UCE’s management structure consists of a general coordinator, a financial specialist, a financial consultant, an accountant, an administrator, a procurement specialist, and a team of engineers responsible for the technical monitoring of projects.

2.3 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 UCE 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 impact 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 financial audits of the program. An annual audit of the project’s financial statements will be conducted, as will annual ex-post reviews of the justifications for the use of funds advanced by the Bank to the UCE. The audit will be performed by an independent firm acceptable to the Bank, in accordance with the terms of reference agreed with the Bank. The report on the audited annual financial statements must be submitted within 120 days after the end of the fiscal year. The report on the final audited financial statements must be submitted within 120 days after the last disbursement. The ex-post review reports must be submitted within sixty days after the end of the first half of each fiscal year.

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

2.18 The UCE 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, is responsible for coordinating and ensuring that the monitoring plan is of the required technical quality and adheres 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 2018.

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 UCE and the Bank. The UCE 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** |
| UCE | 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: Support for Haiti’s Transportation Sector V – Monitoring Work Plan**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Support for Haiti’s Transportation Sector V**  **Monitoring - Work Plan** | | | | | | | | | | | | | | | | | | | | | |
| **Main Monitoring Activities/Outputs by Activity** | | Year 2016 | | | | Year 2017 | | | | Year 2018 | | | | Year 2019 | | | | Year 2020 | | | |
|  |  | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV |
| **I** | **Civil Works and Supervision Indicators** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | *Information Gathering* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Kilometers of the Camp Coq – Vaudreuil roadway that have been rehabilitated | X |  |  |  | X |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |
|  | Finalized maintenance plan |  |  |  |  |  |  |  |  | X |  |  |  | X |  |  |  | X |  |  |  |
|  | Kilometers of the Camp Coq – Vaudreuil roadway that are maintained |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  |  | x |  |  |  |
| **II** | **Strengthening of Road Infrastructure Sector Indicators** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | *Information Gathering* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | An implemented Gender Equality and Security Program pertaining to the Work | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **III** | **Management and Engineering Indicators** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | *Information Gathering* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Final Engineering Designs, approved and  available for a call for bids |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Engineering Designs other Roadways,  approved and available for a call for bids |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Completed work contracts, with approved   socio-environmental audit reports |  |  |  |  | X |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **IV** | **Information processing and analysis** | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |  |  |  |
| **VI** | **Progress Monitoring Report** |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |  |  |  |  |
| **VII** | **Final Monitoring Report on the Program** |  |  |  |  |  |  |  |  |  |  | X | X |  |  |  | X | X |  |  |  |

# Evaluation of the Project

1. Key Evaluation Questions

The specific evaluation questions are (i) What was the impact of the rehabilitation and the routine maintenance of the Camp Coq – Vaudreuil roadway, in relation to vehicle operating costs and travel times on the roadway; (ii) What was the impact of the rehabilitation and the routine maintenance of the Camp Coq – Vaudreuil roadway, in relation to the International Roughness Index (IRI) on the roadway.

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

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

3.2 Most of the desired impacts 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 impact evaluation, depending on the component.

3.3 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.

“Project evaluation” refers to verifying that the proposed objectives have been achieved. This is done by verifying that the selected output and impact 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.

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 Camp Coq – Vaudreuil Roadway Rehabilitation Project.

3.4 For the economic evaluation, a cost/benefit analysis was performed in relation to the contract for maintenance work on the Camp Coq – Vaudreuil roadway. The HDM-4 results indicate that, in the baseline situation, the return indicators show an Economic Net Present Value (ENPV) of US$3.1 million (with a discount rate of 12.0%) and an Internal Rate of Return (IRR) of 12.8%, since the benefit/cost ratio is 1.07 and the ENPV/investment ratio is 0.06. The IRR value is higher than the minimum acceptable rate of return of 12.0% and is satisfactory. The ENPV, the benefit/cost ratio, 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**

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.

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, CAMP COQ – VAUDREUIL Segment**

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Condition** | **Motorcycle** | **Car** | **Pickup** | **Bus** | **Two-Axle Truck** | **Three-Axle Truck** | **Articulated Truck** |
| Without works (2016) | 0.05 | 0.20 | 0.26 | 0.52 | 0.59 | 1.29 | 1.45 |
| With works (2019) | 0.05 | 0.18 | 0.23 | 0.41 | 0.45 | 0.98 | 1.09 |
| Source: Prepared by the authors. | | | | | | | |

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

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.

Once the work to improve the Camp Coq – Vaudreuil 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, CAMP COQ – VAUDREUIL Segment**

**Average Travel Times (Minutes)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Condition** | **Motorcycle** | **Car** | **Pickup** | **Bus (1)** | **Two-Axle Truck** | **Three-Axle Truck** | **Articulated Truck** |
| Without works (2016) | 34 | 38 | 39 | 36 | 46 | 54 | 46 |
| With works (2019) | 24 | 26 | 26 | 26 | 32 | 34 | 32 |
| (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**

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 (2012)** | **Target (2017)** | **Means of Verification/Remarks** |
| International Roughness Index (IRI) on the Camp Coq – Vaudreuil route, in m/km (1) | Value of 7 | Value of 2.3 | 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.

**(iv) Outcome Indicator – Number of Accidents on the Camp Coq – Vaudreuil segment of RN-1**

3.5 Measuring the number of accidents is a direct observation process. This process will be carried out in a way that allows accidents to be classified by type, cause, number of victims, types of fatal and non-fatal accidents, location, etc. A baseline for road safety data in Haiti, at least for the year 2014, will be established through systematic gathering of statistical information about accidents along the entire RN-1 corridor.

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

3.6 “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.

1. Instruments

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

3.15 **Intermediate evaluation*.*** The UCE will submit an evaluation to the Bank 24 months from the effective date of the grant, or when 70% of the disbursements have been made (whichever occurs first). This evaluation will examine, at a minimum: i) the initial results of the project; ii) the processes and results of the bidding and the performance of consulting studies in regard to the works; and iii) the evaluation of the road works undertaken.

3.16 **Final report.** In addition, within 60 (sixty) days following the last disbursement, a final evaluation of the project will be prepared. This evaluation 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; (d) an ex-post cost/benefit evaluation, based on the model developed ex ante; (f) lessons learned; and (d) an evaluation of the implementation of the works, as it relates to social and environmental considerations. An outside party will be engaged to perform this evaluation, which will begin with the gathering of the necessary data, such as travel times, vehicle operating costs, etc. The resources to engage an outside party to perform this evaluation fall under the “evaluation” category in the table of project costs.

1. Coordination, Work Plan, and Budget for Evaluation

3.17 The UCE 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 impact of this project.

3.18 The Bank, acting through its Representation in Haiti and in conjunction with the UCE, 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 impact indicators are met.

3.19 In addition to the semiannual management reports that the UCE 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 UCE and the Bank, with a budget of US$90,000.

**Table 9: Support for Haiti’s Transportation Sector V – Evaluation Activities and Work Plan**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Main Evaluation Activities** | **2016** | | | | **2017** | | | | **2018** | | | | **2019** | | | | **2020** | | | | **Responsible** | **Cost (US$)** |
| **I** | **II** | **III** | **IV** | **I** | **II** | **III** | **IV** | **I** | **II** | **III** | **IV** | **I** | **II** | **III** | **IV** | **I** | **II** | **III** | **IV** |
| **Intermediate evaluation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hiring evaluation team |  |  |  |  |  |  | x |  |  |  |  |  |  |  |  |  |  |  |  |  | UCE: Hiring consultant and supervise consultancy  Consultant: Collect and analyze data, prepare report  UCE and IDB: Review evaluation report | UCE = 6,000 |
| Data Collection |  |  |  |  |  |  |  | x |  |  |  |  |  |  |  |  |  |  |  |  | Consultant = 10,000 |
| Data Analysis |  |  |  |  |  |  |  | x |  |  |  |  |  |  |  |  |  |  |  |  | IDB = 4,000 |
| Final report |  |  |  |  |  |  |  |  | x |  |  |  |  |  |  |  |  |  |  |  |  |
| **Final evaluation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hiring evaluation team |  |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  |  |  |  | UCE: Hiring consultant and supervise consultancy  Consultant: Collect and analyze data, prepare report  UCE and IDB: Review evaluation report | UCE = 16,000 |
| Data Collection |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  |  |  | Consultant = 30,000 |
| Data Analysis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  |  | IDB = 6,000 |
| Final report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  |  |
| **Project Completion Report** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data Collection |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  |  | IDB and UCE: Prepare and review PCR | UCE = 6,000 |
| Final report |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  | IDB = 12,000 |
| **Total** | | | | | | | | | | | | | | | | | | | | | | **US$ 90,000** |
| **Total Execution Unit** | | | | | | | | | | | | | | | | | | | | | | **US$ 28,000** |
| **Total Bank** | | | | | | | | | | | | | | | | | | | | | | **US$ 22,000** |