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CARIBBEAN DEVELOPMENT BANK



**PROJECT COMPLETION VALIDATION REPORT
WITH MANAGEMENT RESPONSE (APPENDIX I)**

ROAD SAFETY PROJECT

BELIZE

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**OFFICE OF INDEPENDENT EVALUATION
FEBRUARY 2022**

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CARIBBEAN DEVELOPMENT BANK



**PROJECT COMPLETION VALIDATION REPORT
ROAD SAFETY PROJECT
BELIZE**

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|--|---------------------|
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**OFFICE OF INDEPENDENT EVALUATION
FEBRUARY 2022**

CURRENCY EQUIVALENT

Dollars (\$) throughout refer to United States dollars (USD) unless otherwise stated.

USD1.00 = BZD2.00

BZD1.00= USD0.50

ABBREVIATIONS

| | | |
|------|---|--|
| AR | - | Appraisal Report |
| BMCs | - | Borrowing Member Countries |
| CDB | - | Caribbean Development Bank |
| CSP | - | Country Strategy Paper |
| DOT | - | Department of Transport |
| EER | - | Economic Rate Return |
| GOBZ | - | Government of Belize |
| HS | - | Highly Satisfactory |
| IDC | - | Interest During Construction |
| KAP | - | Knowledge, Attitudes and Practices |
| KSI | - | Killed and Seriously Injured |
| M&E | - | Monitoring and Evaluation |
| MFED | - | Ministry of Finance and Economic Development |
| mn | - | million |
| MOH | - | Ministry of Health |
| MWT | - | Ministry of Works and Transport |
| NPV | - | Net Present Value |
| NRSC | - | National Road Safety Strategy |
| OIE | - | Office of Independent Evaluation |
| OSC | - | Operational Steering Committee |
| PAS | - | Performance Assessment System |
| PBL | - | Project Based Loans |
| PCR | - | Project Completion Report |
| PD | - | Police Department |
| PM | - | Project Manager |
| PPES | - | Project Performance Evaluation System |
| PSR | - | Project Supervision Report |
| RSU | - | Road Safety Unit |
| RTA | - | Road Traffic Accidents |
| RTI | - | Road Traffic Injuries |
| TA | - | Technical Assistance |
| TDD | - | Terminal Disbursement Date |
| USD | - | United States Dollars |

(ii)

MEASURES AND EQUIVALENTS

| | | |
|---------------------------------------|---|---------------------------------------|
| 1 metre (m) | = | 3.281 feet (ft.) |
| 1 kilometre (km) | = | 0.621 mile (mi) |
| 1 square metre (m ²) | = | 10.756 square feet (ft ²) |
| 1 square kilometre (km ²) | = | 0.386 square mile (mi ²) |
| 1 hectare (ha) | = | 2.47 acres (ac) |
| 1 tonne | = | 0.98 ton (tn) |
| 1 litre (l) | = | 0.22 imperial gallons (ig) |
| 1 cubic metre (m ³) | = | 264.172 gallons (gals) |
| 1 millimetre (mm) | = | 0.039 inch (in) |

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MANAGEMENT RESPONSE

EXECUTIVE SUMMARY

PROJECT SUMMARY

1. In May 2012, CDB approved a loan in the amount of seven million two hundred and forty-eight thousand United States dollars (USD7.248 mn) to the Government of Belize (GOBZ) to improve road safety. In October 2014, CDB approved an Additional Loan in the amount of USD4.584 mn to revise the project scope following a GOBZ request. The Additional Loan brought the total contribution of CDB to USD11.832 mn, with counterpart contribution of USD2.510 mn.

PROJECT OBJECTIVES

2. The project's overall objective was to reduce deaths and serious injuries associated with Road Traffic Accidents (RTA) on the Demonstration Corridor. The intended results of the project were: (a) Safety of road infrastructure along the Demonstration Corridor improved; (b) Road user awareness of safety improved; (c) Driver behaviour and adherence to traffic laws improved; (d) Post-crash care improved; and (e) Capacity to manage road safety improved.

PROJECT BACKGROUND

3. Most of Belize's main road network was in good structural condition. However, there were some significant safety deficiencies, particularly poor delineation and the lack of adequate shoulders and appropriate roadside furniture. Speeds on the network are a considerable problem, as illustrated by a speed survey conducted in November 2011, which indicated that more than 50% of vehicles exceeded the posted limit.

4. At the time of the appraisal, user knowledge of the risks associated with road use was generally poor in Belize. Road safety was not a formal part of the school curriculum. Dangerous behaviours, such as distracted driving and riding in pick-up truck pans, were ubiquitous and have contributed to a significant proportion of the fatalities.

5. Road Traffic Injuries (RTI) were the fourth leading cause of death in Belize. In 2006, Belize recorded 68 fatalities and 652 non-fatal RTI. In 2009, fatalities rose to 70, equivalent to approximately 21 deaths per 100,000 inhabitants, the highest fatality rate of Caribbean Development Bank's (CDB) Borrowing Member Countries (BMCs).

EVALUATION CRITERIA

6. The assessment focused on the relevance, effectiveness, efficiency, and sustainability of the project and CDB's and Borrowers' performance.

Relevance

7. The PCR rates Relevance as **Highly Satisfactory**. It indicates that the project was identified in the Country Strategy Paper (CSP), 2011-15 (BD 61/11). The Project Completion Report (PCR) states that the project is highly relevant as GOBZ's Medium Term Development Strategy and Horizon 2030 identified road safety as a high priority of GOBZ and a wide group of cross-sector stakeholders. In light of the previous, the Evaluator concurs with the PCR rating of **Highly Satisfactory**.

Effectiveness

8. The PCR gives a rating of **Highly Satisfactory** for Effectiveness. Some of the outcomes' performance measurements were increased during the appraisal of the Additional Loan since the data at that point demonstrated that the outcomes would have exceeded the original expectations. The PCR indicates that two outcomes were fully achieved: (a) star ratings increased from 5% to 100% three star; and (b) the number of fatalities has been reduced by 90%. The Evaluator rates this criterion as **Highly Satisfactory**.

Efficiency

9. The PCR assesses the cost efficiency of the project as **Highly Satisfactory**, referring to the Economic Rate of Return (ERR). The model assesses the implementation of road safety countermeasures across a network of roads in terms of deaths and serious injuries prevented and the associated economic savings. The ERR was estimated at 35% with a Net Present Value (NPV) of \$27.6 mn.

10. The PCR highlights that climate change considerations were included in the design of infrastructure in the Additional Loan. The PCR states that this resulted in some significant cost increases and the need for additional funds. Overall, project implementation suffered delays of about three years and was completed approximately 39 months after the original expected date.

11. By making reference to the quantitative assessment principles as stated in the Performance Assessment Systems Manual 2013, the Evaluator rates this criterion as **Highly Satisfactory**.

Sustainability

12. The PCR rates the sustainability of the project as **Satisfactory**. It states that the CDB approved a Second Road Safety Project (BD 119/18), extending the approach of the first project to a broader segment of the country. The project was able to mobilise support from the private sector. In the long term, the combination of the private sector and GOBZ financial aid is considered essential to ensure the sustainability of the intervention.

13. Continuous investments in awareness, enforcement, and education activities are required to inform new generations that will enter the road system in the future. The PCR suggests that traffic law enforcement needs to be monitored to ensure the benefits are uniform and continue over time. Based on the previous, the Evaluator rates the Sustainability criterion as **Satisfactory**.

Performance of the Borrower and Executing Agency

14. The PCR rates the performance of the Borrower/Implementing Agency as **Highly Satisfactory**, based on an assessment of the counterpart contribution to the project, commitment and ownership, the project management performance and their leadership role in the inter-agency coordination. The Evaluator rates the Borrower's performance as **Satisfactory** due to its failure to fully comply with the submission of the monitoring reports.

Performance of the Caribbean Development Bank

15. The PCR provides a self-assessment rating of CDB's performance as **Highly Satisfactory**. The rating is based on the international recognition that the project was able to attract for its multi-sectoral application of the Safe System Approach. The PCR also refers to the CDB's effective and timely supervision. Considering the previous, the Evaluator concurs with the **Highly Satisfactory** rating.

OVERALL ASSESSMENT

16. The PCR rates the overall performance of the project as **Highly Satisfactory**. The Evaluator also rates overall project performance as Highly Satisfactory. This rating is based on an arithmetic average of four core evaluation criteria: Relevance (Highly Satisfactory); Effectiveness (Highly Satisfactory); Efficiency (Highly Satisfactory); and Sustainability (Satisfactory).

17. Details of the ratings and justification for differences between those of the PCR and Evaluator are summarised below.

SUMMARY RATINGS OF CORE EVALUATION CRITERIA AND OVERALL ASSESSMENT OF THE PROJECT

| Criteria | PCR¹ | OIE Review | Reason, if any, for Disagreement/Comments |
|---|----------------------------|----------------------------|--|
| Relevance | Highly Satisfactory (4) | Highly Satisfactory (4) | |
| Effectiveness | Highly Satisfactory (4) | Highly Satisfactory (4) | |
| Efficiency | Highly Satisfactory (4) | Highly Satisfactory (4) | |
| Sustainability | Satisfactory (3) | Satisfactory (3) | |
| Composite (Aggregate) Performance Rating | Highly Satisfactory (4) | Highly Satisfactory (4) | |
| Borrower Performance | Highly Satisfactory (4) | Satisfactory (3) | Failure to fully comply with the submission of monitoring reports. |
| CDB Performance | Highly Satisfactory (4) | Highly Satisfactory (4) | |
| Quality of PCR | NA | Satisfactory (3) | |

Lessons

18. The PCR identified four lessons learned from the implementation of the project:
- (i) Wide stakeholder engagement entrenches ownership on multi-sectoral projects.
 - (ii) Empowering young people to take action on road safety was a low-cost investment that translated into significant results towards improving safety and awareness of risks amongst youth.

¹ PPES scores and ratings used in PCR and PSRs to be converted to PAS 2013 scores and ratings, using the equivalence matrix in the relevant PAS 2013 Manual (Public Sector Investment Lending and TA; PBL; CSP).

- (iii) The private sector is more likely to invest in road safety initiatives when results can be demonstrated.
- (iv) Monitoring and Evaluation of road safety across multiple agencies requires standardised and consistent criteria to enable results to be effectively communicated to stakeholders and to support the targeting of resources where results are not materialising.

1. BASIC PROJECT DATA

| | |
|-------------------------------|---|
| Project Title | Road Safety Project |
| Country | Belize |
| Sector | Road Transportation |
| Loan No. | 21/SFR-OR-BZE |
| Beneficiary | 21/SFR-OR-BZE Add 1 |
| Implementing/Executing | Government of Belize (GOBZ) Agency Road Safety Unity, Ministry of Economic Development |

| <u>Disbursements (\$ mn)</u> | <u>CDB LOAN (USD '000)</u> | | |
|---|---------------------------------|------------------|--------------------------|
| | <u>OCR</u> | <u>SFR</u> | <u>Total</u> |
| Loan Amount | 9,365 | 2,467 | 11,823 |
| Disbursed | 9,309.509 | 2,461.317 | 11,707.827 |
| Cancelled | 46.490 | 5.682 | 52.172 |
| <u>Project Milestones</u> | <u>At Appraisal²</u> | <u>Actual</u> | <u>Variance (months)</u> |
| Board Approval | May 21, 2012 | May 21, 2012 | (0) |
| Loan Agreement signed | June 06, 2012 | January 30, 2013 | (7.24) |
| Loan Effectiveness ³ | September 15, 2012 | April 4, 2013 | (6.20) |
| <u>CDB Loan</u> | <u>At Appraisal</u> | <u>Actual</u> | <u>Variance (months)</u> |
| First Disbursement Date | September 30, 2012 | May 05, 2013 | (7.5) |
| Terminal Disbursement Date | December 31, 2015 | April 8, 2019 | (39.8) |
| TDD Extensions (number) | | 3 | |
| <u>Project Cost and Financing (\$ mn)</u> | <u>At Appraisal⁴</u> | <u>Actual</u> | <u>Variance (mn)</u> |
| CDB Loan | 7,248 | 11,832 | 4,584 |
| Counterpart | 1,596 | 2,510 | 914 |
| Total | 8,844 | 14,342 | 5,498 |
| <u>Implementation</u> | <u>At Appraisal</u> | <u>Actual</u> | <u>Variance (months)</u> |
| Start Date ⁵ | May 12, 2012 | May 12, 2012 | 0 |
| Completion Date | December 15, 2015 | April 04, 2019 | (39.20) |
| Implementation Period (years) | 3.7 | 6.11 | 3.4 |

² Dates refer to the First Loan.

³ Date Conditions to First Disbursement satisfied.

⁴ Figures refer to the First Loan.

⁵ Implementation begins with signing of Loan Agreement

2. PROJECT DESCRIPTION

Rationale (context at appraisal)

2.01 Most of Belize's main road network is in good structural condition. However, there are some significant safety deficiencies, particularly poor delineation and the lack of adequate shoulders and appropriate roadside furniture. Speeds on the network are a considerable problem, as illustrated by a speed survey conducted in November 2011, which indicated that more than 50% of vehicles exceeded the posted limit. A comprehensive safety assessment of the main road network was initiated in August 2011. This exercise determined the level of risk to each type of road user at 100 metres (m) intervals along with the network, which was then assigned safety ratings of between 0 to 5 stars, with five being the highest and three stars being considered as the minimum acceptable standard. This survey indicates that 70%, 85%, 91%, and 10% of the main road network is rated at between 0-2 stars for vehicle occupants, motorcycle users, bicycle users, and pedestrians, respectively.

2.02 At the time of the appraisal, user knowledge of the risks associated with road use was generally poor in Belize. Road safety was not a formal part of the school curriculum. Dangerous behaviours, such as distracted driving and riding in pick-up truck pans, were ubiquitous and have contributed to a significant proportion of the fatalities. Drunken driving statistics were not available, but it was, at least anecdotally, perceived as a widespread problem.

2.03 Road Traffic Injuries (RTI) were the fourth leading cause of death in Belize. In 2006, Belize recorded 68 fatalities and 652 non-fatal RTI 1. In 2009, fatalities rose to 70, equivalent to approximately 21 deaths per 100,000 inhabitants, the highest fatality rate of Caribbean Development Bank's (CDB) Borrowing Member Countries (BMCs), which averages about 16, and higher than most of its Central American neighbours. The highest death rates have historically been in the Belize and Cayo Districts, whose proportion of average annual casualties represented about 60% and 11%, respectively.

Expected Impact

2.04 The project was expected to contribute to the reduction of human, economic and financial losses due to RTI.

Objectives or Expected Outcomes

2.05 The project's overall objective was to reduce deaths and serious injuries associated with Road Traffic Accidents (RTA) on the Demonstration Corridor.

The objectives of the project were:

- (a) Safety of road infrastructure along the Demonstration Corridor improved
- (b) Road user awareness of safety improved
- (c) Driver behaviour and adherence to traffic laws improved
- (d) Post-crash care improved
- (e) Capacity to manage road safety improved.

Components and/or Outputs

Components

The project consisted of the following components:

- (a) *Road Safety Infrastructure*: this component supported improving road infrastructure safety along an 81 km corridor of Western Highway, between Belize City and Belmopan.
- (b) *Road User Education and Awareness*: this component supported increasing road user awareness and improving behaviours. The sub-components were:
 - (i) *Public Education and Awareness*: consultancy services were to be engaged to conduct baseline and post-project Knowledge, Attitudes and Practices (KAP) Surveys; to develop a comprehensive targeted communication strategy, and deliver four extensive biannual public awareness campaigns.
 - (ii) *Curriculum Development and Teacher Training*: consultancy services were to be engaged to develop road safety curriculum for Primary and Secondary Schools, produce relevant training materials and deliver training to 400 teachers and the curriculum to 6,000 pupils at ten schools within the Demonstration Corridor.
- (c) *Road Safety Enforcement*: this component was expected to support the improvement of traffic law enforcement on the Demonstration Corridor and in the municipalities of Belize City and Belmopan through the provision of tow highway patrol vehicles and enforcement equipment to the Department of Transport (DOT). Additionally, consultancy services were engaged to deliver a training programme in traffic law enforcement to 70 enforcement officers in DOT, the Police Department (PD), and the nine municipalities.
- (d) *Road Accident Emergency Services*: this component was expected to support the improvement of post-crash trauma care through the provision of two ambulances and First Responder training to 12 public sector employees.
- (e) *Capacity Building*: this component was expected to support the improvement of Government of Belize's (GOBZ) capacity to manage road safety. The sub-components were:
 - (i) *Road Safety Mentoring*: consultancy services were to be engaged to mentor, develop and consolidate the capacity of the various agencies to manage road safety and assist with the establishment of the National Road Safety Strategy (NRSC). The consultant was to assist GOBZ in the development of the Medium-term NRSC and the M&E Framework.
 - (ii) *Road Safety Training*: consultancy services were to be engaged to deliver a training course on various aspects of road safety, including road safety auditing to 300 staff members responsible for road safety in the Ministry of Finance and Economic Development (MFED), the Ministry of Works and Transport (MWT), Police Department (PD) and the nine municipalities.

- (iii) *Monitoring and Evaluation*: this sub-component was expected to support the establishment of clear targets for road safety and the development of the M&E framework. Equipment was to be provided to help MWT's collection of speed and traffic data. Support was also to be provided to assist in establishing consistent indicators and entrenching better data collection and sharing mechanisms between agencies. After completing the road safety infrastructure, consultancy services were to be engaged to re-survey and update the safety rating along the Demonstration Corridor.
- (f) *Project Management*: project management was to be provided by a project team within GOBZ line ministries led by a Road Safety Unit (RSU). Engineering consultancy services will be engaged to certify road safety infrastructure works and assist MWT with a roundabout design.

Outputs

The planned outputs were the following:

- (a) Safety of road infrastructure improved along 81 km of road by June 30, 2016.
- (b) KAP baseline surveys completed by March 1, 2015.
- (c) Communication Strategy developed by April 30, 2015.
- (d) Four biannual road safety campaigns delivered by June 30, 2017.
- (e) Curriculum developed, training materials delivered, and 400 teachers trained by June 30, 2016.
- (f) Curriculum delivered to 6,000 pupils by June 30, 2016.
- (g) Post-project KAP provided by June 2017.
- (h) Enforcement strategy developed by November 1, 2013.
- (i) Two Patrol vehicles and equipment delivered by June 2013.
- (j) Two Ambulances delivered by October 31, 2013.
- (k) First Responder training delivered to 12 public sector employees.
- (l) Project management vehicle and equipment delivered by April 2013.
- (m) Public and private sector employees trained in road safety management – 300 by June 2016.
- (n) Public sector employees trained in traffic law enforcement – 70 by June 2015.
- (o) Monitoring equipment delivered by April 2013.
- (p) M&E framework and performance indicators established by December 1, 2013.
- (q) Road Safety Targets and Vision developed by July 2013.
- (r) Annual Action Plans developed by October 31, 2014, 2015, 2016.
- (s) Results-based National Road Safety Strategy developed by November 1, 2013.
- (t) NRSC formalised by July 1, 2013.
- (u) Road Safety Assessment completed by September 30, 2016.
- (v) Project Management.
- (w) Design and Construction Supervision.

Provision of Inputs

2.06 In May 2012, CDB approved a Loan in the amount of USD7.248 million (mn) to GOBZ to assist in improving road safety. In October 2014, CDB approved an Additional Loan in the amount of USD4.584 mn to include adjustments to the project agreed upon at the Annual Review Meeting, namely additional guardrails, drainage and intersection improvements, and mobility and safety features for the infrastructure works. The Additional Loan brought the total contribution of CDB to USD11.832 mn. Counterpart contribution was USD2.510 mn (USD1.596 mn committed for the original loan and USD0.914 mn for the Additional Loan). Tabulated summary of the project cost and financing plan estimated at appraisal (refer to Table 1 below).

TABLE 1: SUMMARY OF PROJECT COSTS AND FINANCING
ESTIMATED AT APPRAISAL
(\$'000)

| | Planned | | | | | Actual | | | | | CDB % Difference |
|---|--------------|--------------|---------------|--------------|---------------|--------------|--------------|---------------|--------------|---------------|---------------------|
| | CDB | | | GOBZ | Total | CDB | | | GOBZ | Total | |
| | OCR | SFR | Total | | | OCR | SFR | Total | | | |
| 1. Road Safety Infrastructure | 7,810 | 102 | 7,912 | - | 7,912 | 7,689 | 926 | 8,615 | - | 8,615 | 9 |
| 2. Road User Education and Awareness | - | 440 | 440 | 500 | 940 | 265 | 120 | 385 | 500 | 885 | -12 |
| 3. Road Safety Enforcement | 132 | - | 132 | - | 132 | 124 | 20 | 144 | 100 | 244 | 9 |
| 4. Road Accident Emergency Services | - | 310 | 310 | - | 310 | 260 | 50 | 310 | 100 | 410 | 0 |
| 5. Capacity Building | - | 411 | 411 | 325 | 736 | 148 | 324 | 472 | 100 | 572 | 15 |
| 6. Project Management | - | 896 | 896 | 1500 | 2,396 | 329 | 905 | 1,234 | 1521 | 2755 | 38 |
| Sub-Total Base Cost | 7,942 | 2,158 | 10,100 | 2,325 | 12,425 | 8,815 | 2,345 | 11,160 | 2,321 | 13,481 | 10.50 |
| Physical Contingencies | 520 | 134 | 654 | 125 | | - | - | - | - | - | -100 |
| Price Contingencies | 172 | 53 | 225 | 61 | | - | - | - | - | - | -100 |
| Interest During Construction (IDC) & Commitment Fee | 731 | 122 | 853 | - | | 494 | 122 | 616 | - | 616 | -28 |
| Total Cost | 9365 | 2,467 | 14,344 | 2,510 | | 9,309 | 2,468 | 11,776 | 2,321 | 14,097 | -0.50 |

Implementation Arrangements

Executing Agency

2.07 The Ministry of Finance and Economic Development (Road Safety Unit) had overall responsibility for administering and managing all aspects of the project.

Identification of Risks and Mitigation Measures

2.08 Significant risks identified at appraisal were related to project implementation and operation.

2.09 One of the most significant risks was ineffective enforcement, which could undermine the effectiveness of the project in changing attitudes and road user behaviours. The project sought to mitigate this risk by providing Technical Assistance (TA) to the Traffic Departments of the municipalities, the Police and the Transport Departments to improve understanding of best practices in the various aspects of traffic law enforcement. Additionally, the project provided the necessary equipment to facilitate enforcement strategies.

2.10 Another risk identified at appraisal was the lack of inter-agency coordination. In Belize, 15 agencies share responsibility for road safety. The lack of formalised inter-agency coordination mechanisms could undermine road safety strategies. The project sought to mitigate this risk by establishing the National Road Safety Committee (NRSC), leading in road safety management.

2.11 Lack of public support was also identified as one potential risk. The Appraisal Report (AR) defined this risk as one arising long-term, given the long-term nature of public awareness campaigns and behavioural change. Changing attitudes and road user behaviour require a long-term commitment. The Public Awareness Campaigns need to be supported beyond the end of the project to be effective.

2.12 It was recognised at the appraisal stage that the lack of counterpart funding resources could have undermined the effectiveness of the project. To mitigate this risk, GOBZ committed to funding the Road Safety Unit (RSU) and facilitating the private sector to mobilise additional resources supporting the public awareness and education programme.

3. EVALUATION OF DESIGN AND IMPLEMENTATION

Relevance of Design and Formulation

3.01 At appraisal, the need for improving road safety was identified in GOBZ's Medium Term Development Strategy, and Horizon 2030 – Long Term National Development Framework for Belize and was accorded a high priority by GOBZ and a wide group of cross-sector stakeholders.

3.02 The AR indicated that the project was expected to make a significant contribution to poverty reduction. In 2007, statistics reported that the economic impact of RTI in Belize amounted to \$31.97 mn (1.26% of GDP). The great majority of the cost was for fatal injuries, specifically on indirect cost attributed to premature death. Direct cost was estimated at \$491,549, of which 2.1% was spent on fatalities, 61.6% on the severely injured and 36.3% on slightly injured.

Project Outputs

3.03 At appraisal, the project was scheduled to have been implemented over three years and seven months, from May 02, 2012, to December 15, 2015. The CDB loan was expected to have been fully disbursed by December 31, 2015. The PCR indicates that the project has been implemented over six years and eleven months, from May 12, 2012, to April 04, 2019, and that the CDB loan was fully disbursed by April 8, 2019 (approximately 39 months behind schedule).

3.04 The PCR assesses the performance of the project in terms of achievements of outputs as **Highly Satisfactory**. The PCR indicates that all components achieved or exceeded the performance indicators established. Given the multi-sectoral nature of the project, the PCR states that each component contributed equally to the achievement of the overall project results.

3.05 The PCR states that Component 1, "Safety of road infrastructure along the corridor improved", benefitted from further resources of the Additional Loan to incorporate climate change considerations into the design of the infrastructure in Belmopan. After the Original Loan approval, GOBZ introduced the policy of incorporating climate change variability considerations into all road construction projects.

3.06 The PCR mentions that Component 2, "Demonstration Corridor road-user awareness of road safety improved", achieved or exceeded the performance metrics established at appraisal. The number of students and teachers reached by the road safety curriculum was much more significant than initially planned. Road safety campaigns were delivered with considerable delay due to staffing issues at the Government Press Office. However, when the Communication Consultant was appointed, the number of road safety campaigns delivered was higher than initially anticipated.

3.07 The PCR indicates that the achievements of Component 3, "Driver behaviour and adherence to traffic laws along the corridor improved", was not uniform across the Traffic Departments of the municipalities, the Police and Transport Departments. Therefore, the PCR suggests that additional support is required to demonstrate the effectiveness of the investment.

3.08 The PCR reports that Component 4, "Post-crash care on the Corridor improved", outperformed the targets initially planned. GOBZ and the Ministry of Health (MOH) used their resources to support primary and complex care training at traffic accident scenes.

3.09 Part of the targets set for Component 5, "GOBZ capacity to manage road safety improved", were exceeded. Participants from the public and private sectors were enthusiastic about the training and generated a high participation demand.

3.10 Project management has been considered adequate by the PCR, despite delays in project management and financial reporting have been highlighted.

3.11 Based on a review of the information available on CDB's Registry files and PSRs, the Evaluator concurs with the findings of the PCR in respect of the implementation of the project. Most of the expected outputs were completed or exceeded, albeit over a protracted period of four years, that is, 39 months beyond the scheduled completion date.

TABLE 2: Matrix of Project Outputs

| No. | Planned Outputs at Appraisal | Outputs Achieved | Evaluator's Rating |
|-----|---|---|--------------------|
| 1 | Safety of road infrastructure improved along 81 km of road by June 30, 2016 | Safety of road infrastructure improved along 81 km of road by March 31, 2018. | S |
| 2 | <p>KAP baseline surveys completed by March 1, 2015.</p> <p>Communication Strategy developed by April 30, 2015.</p> <p>Four biannual road safety campaigns delivered by June 30, 2017.</p> <p>Curriculum developed, training materials delivered, and 400 teachers (by sex) trained by June 30, 2016.</p> <p>Curriculum delivered to 6,000 pupils by June 30, 2016 (by sex).</p> <p>Post-project KAP delivered by June 2017.</p> | <p>KAP baseline surveys completed by March 1, 2015.</p> <p>Communication Strategy developed by April 30, 2015.</p> <p>Six road safety campaigns delivered by June 30, 2018.</p> <p>Curriculum developed, training materials delivered, and 1,388 teachers (365 males, 1,023 females) trained by August 31, 2017.</p> <p>Curriculum delivered to 23,760 pupils by August 31, 2017 (11,539 males, 12,221 females).</p> <p>Post-project KAP delivered by April 2018.</p> | HS |
| 3 | <p>Enforcement strategy developed by November 1, 2013.</p> <p>Patrol vehicles (2) and equipment delivered by June 2013.</p> | <p>Enforcement strategy developed by November 1, 2013.</p> <p>Patrol vehicles (2) and equipment delivered by June 2013.</p> | S |
| 4 | <p>Two Ambulances delivered by October 31, 2013.</p> <p>First Responder training delivered to 12 public sector employees.</p> | <p>Two Ambulances delivered by October 31, 2013.</p> <p>Medical First Responder training delivered to 40 MOH personnel (15 males, 25 females).</p> <p>Basic Life Support training delivered to 1,750 GOBZ employees and Belize Youth for Road Safety members. (1,306 males, 444 females).</p> <p>Emergency Medical Technician training delivered to 15 MOH personnel (7 males, 8 females).</p> | HS |
| 5 | <p>Project management vehicle and equipment delivered by April 2013.</p> <p>Public and private sector employees trained in road safety management – 300 by June 2016.</p> | <p>Project management vehicle and equipment delivered by April 2013.</p> <p>Public and private sector employees trained in road safety management – 632 by June 2016 (529 males, 103 females).</p> | HS |

| No. | Planned Outputs at Appraisal | Outputs Achieved | Evaluator's Rating |
|-----------------------|--|--|--------------------|
| | <p>Public sector employees trained in traffic law enforcement – 70 by June 2015.</p> <p>Monitoring equipment delivered by April 2013.</p> <p>M&E framework and performance indicators established by December 1, 2013.</p> <p>Road Safety Targets and Vision developed by July 2013.</p> <p>Annual Action Plans developed by October 31, 2014, 2015, 2016.</p> <p>Results-based National Road Safety Strategy developed by November 1, 2013.</p> <p>NRSC formalised by July 1, 2013.</p> <p>Road Safety Assessment completed by September 30, 2016</p> | <p>Public sector employees trained in traffic law enforcement – 280 by June 2015 (256 males, 24 females).</p> <p>Monitoring equipment delivered by April 2013.</p> <p>M&E framework and performance indicators established by December 1, 2013.</p> <p>Road Safety Targets and Vision developed by July 2013.</p> <p>Annual Action Plans developed by October 31, 2014, 2015, 2016.</p> <p>Results-based National Road Safety Strategy developed by November 1, 2013.</p> <p>NRSC formalised by July 1, 2013.</p> <p>Road Safety Assessment completed by April 19, 2018.</p> | |
| 6 | Project Management Design and Construction Supervision | Project Management Design and Construction Supervision | S |
| Average Rating | | | HS |

Project Cost, Disbursements, Borrower Contribution and Conformance to Schedule

Project Cost

3.12 The PCR provides a matrix of project costs and financing plan that shows a minor difference between the appraised and actual costs, equal to 0.5% (USD0.05). However, it indicates an increase of the cost of the Project Management Component equal to 38% (USD0.38 mn) on account of the extension of the Road Safety Unit team until the Second Road Safety Project. During that time, the Road Safety Unit Team was dedicated to continuing the Road User Education and Awareness activities and assisting with the second project's appraisal.

3.13 Without accounting for the variation in costs approved through the Additional Loan (Paper BD 44/12 Add. 1), the estimated cost of the project at appraisal was USD11.83 mn, and the actual cost was USD11.76. A summary of project costs/commitments and the financing plan is presented in Table 2.

Disbursements

3.14 At appraisal, the first disbursement was planned to be made by September 30, 2012, and the Loan was intended to be fully disbursed by December 31, 2015. According to the PCR, the first disbursement was made on May 5, 2013 (7.5 months late) and the last disbursement was made on April 8, 2019 (39.8 months later than planned). The Terminal Disbursement Date (TDD) was extended three times.

Borrower Contribution

3.15 GOBZ's contribution was lower than planned during the appraisal phase, \$2.32 mn rather than \$2.46 mn (-7.5%). The savings occurred mainly on the costs of the Capacity Building Component. According to the PCR, savings were possible due to the use of honorarium as a cost-effective approach to bring experts to deliver training workshops.

3.16 Additionally, during the appraisal phase, one of the main concerns on sustainability was caused by the fact that the majority of GOBZ's contributions were 'in-kind'. However, as suggested during the appraisal phase, GOBZ mobilised private sector financial and in-kind resources to support this project component.

Conformance to Schedule

3.17 At appraisal, the Loan was planned to be implemented, commencing in May 2012 and ending in December 2015. The PCR states that the project was started on the same date. However, it was completed 39 months later, in April 2019.

Conditions and Covenants, Procurement and Contractor Performance

Implementation Arrangements

3.18 The project was implemented by MFED's Road Safety Unit (RSU). An Operation Steering Committee was in charge as the main decision-making body to provide managerial oversight, advice, guidance and direction to the implementation of the project. A Project Manager (PM) was appointed by the GOBZ and was responsible for coordinating and monitoring all aspects of the implementation of the project. The PCR states that the project management team provided effective coordination and management of the project. However, Project Management and Financial reporting were not regularly provided despite regular follow up by CDB staff.

Conditions and Covenants

3.19 The compliance of the Borrower/Executing Agency with conditions of the Loan Agreement was achieved in April 2013 rather than September 2012 as scheduled at appraisal. The PCR did not report the shift in time. However, it can be attributed to delays in the appointment of the PM.

Contractor/Consultant Performance

3.20 According to the PCR, the Consultants and Contractors performed well on the project, mainly due to the highly participatory approach.

Monitoring and Evaluation Design, Implementation and Utilisation

3.21 The AR specifies the list of reports to be prepared during project implementation (Appendix 5.6 of the BD 44/12), including monthly progress reports, quarterly reports on investments costs, quarterly and annual reports on monitoring indicators. The PCR reports that the Project Management Unit did not provide project reporting promptly despite regular follow-up by CDB staff.

4. EVALUATION OF PERFORMANCE (PCR ASSESSMENT AND VALIDATION)

4.01 The following are the ratings of the PCR and PSRs over the project implementation period and the Evaluator's ratings based on the data reviewed.

Relevance

4.02 The PCR rates Strategic and Poverty Relevance as **Highly Satisfactory**. It indicates that the project was identified in the Country Strategy Paper (CSP), 2011-2015 (BD 61/11), which expected sector outcome was "Economic losses due to poor road safety reduced".

4.03 The PCR states that the project is highly relevant as GOBZ's Medium Term Development Strategy and Horizon 2030 identified road safety as a high priority of GOBZ and a wide group of cross-sector stakeholders. The PCR further indicates the high incidence of RTI on social and productivity loss. The report points out that, by improving road safety, the cumulative benefits of the project are expected to contribute to the development of Belize's social and human capital base and to reducing poverty. In light of the previous, the Evaluator concurs with the PCR rating of **Highly Satisfactory**.

Effectiveness

4.04 The PCR gives a rating of **Highly Satisfactory** for Effectiveness. The outcomes indicators (Table 2) were fully achieved or exceeded. The outcome indicators "Killed and Seriously Injured (KSI)" was increased during the appraisal of the Additional Loan since the data at that point demonstrated that the outcomes would have exceeded the original expectations.

4.05 At appraisal, it was expected that by the end of the project in June 2016, there would have been an increase in road infrastructure safety ratings for all users along the Demonstration Corridor improved from 1 or 2 stars to at least 3 stars. The PCR indicates that this target was fully achieved, and star ratings increased from 5% 3-star to 100%.

4.06 The other outcome cited in the AR was a reduction in KSI by 35%. The PCR indicates that the number of fatalities has been reduced by 90%. Data on serious injuries indicators was not collected. The PCR points out that due to the small statistical sample, the rate will need to be monitored over several years. However, the trend suggests that it is highly probable that the outcome will be exceeded.

4.07 Per the PCR self-assessment, the Evaluator awards a rating of **Highly Satisfactory (HS)** for effectiveness.

TABLE 2: Matrix of Project Outcomes

| No. | Planned outcomes at appraisal | Outcomes Achieved as per PCR | Rating by Evaluator |
|-----------------------|---|---|---------------------|
| 1 | Safety ratings of road infrastructure for all users along the Demonstration Corridor improved from 1 or 2 stars to at least 3 stars by June 30, 2016. | Safety ratings of road infrastructure for all users along the Demonstration Corridor improved from 1 or 2 stars to at least 3 stars by March 31, 2018. (Star ratings increased from 5% 3-star to 100%). | HS |
| 2 | Killed and Seriously Injured (KSI) reduced by 35% by June 30, 2016. ⁶ | Fatalities reduced by 90% by December 31, 2018. ⁷ | HS |
| Overall Rating | | | HS |

Efficiency

4.08 The PCR assesses the cost efficiency of the project as **Highly Satisfactory**. It refers to the Economic Rate Return (ERR) estimation of the project benefits. The model assesses the benefit of implementing road safety countermeasures across a network of roads regarding deaths and serious injuries prevented and the associated economic savings. To enable this assessment, an estimate was made of the number of deaths and serious injuries that occurred without the project. For the Demonstration Corridor, the model predicted 10.7 fatalities per year. The statistics from the Belize Police Departments Joint Intelligence Coordination Centre show that deaths on the Demonstration Corridor during project implementation were seven deaths per year on average. This indicates that the ERR was estimated at 35% with a Net Present Value (NPV) of \$27.6 mn. The PCR states that the additional costs had little impact on overall cost efficiency.⁸

4.09 The PCR highlights the role of the Additional Loan in facilitating the financing of some investments that enhanced project outputs and outcomes, including incorporating climate change considerations, which were not included in the design of the infrastructure. The PCR states that this resulted in some significant cost increases and the need for an additional loan.

4.10 In the PCR, it is indicated that the National Road Safety Committee effectively enhanced the coordination of multiple stakeholders. The Operational Steering Committee (OSC) was influential in coordinating GOBZ's inter-agency efforts to deliver the various outputs.

4.11 Overall, project implementation suffered delays of about three years and was completed approximately 39 months after the original expected date.

4.12 By making reference to the quantitative assessment as suggested by the PAS Manual 2013 the Evaluator rates this criterion as **Highly Satisfactory**.

⁶ During the appraisal of the Additional Loan, the KSI indicator was increased from 20% to 35% since data suggested that the outcome would have been exceeded the original appraisal expectations.

⁷ Statistics on serious injuries were not collected.

⁸ The estimation of incremental benefits considers the International Road Assessment Programme (iRAP) model that assesses the benefit of implementing a range of infrastructure safety countermeasures across a network of roads, in terms of deaths and serious injuries prevented and the associated economic savings. To enable this assessment, an estimate was made of the number of deaths and serious injuries that currently occur on each 100-m section of the network, without the Project, over the forecast period.

Sustainability

4.13 The PCR rates the sustainability of the project as **Satisfactory**. It states that the CDB approved a Second Road Safety Project (BD 119/18), extending the approach of the first project to a broader segment of the country. The project was able to mobilise support from the private sector. In the long term, the combination of the private sector and GOBZ financial aid is considered essential to ensure the sustainability of the intervention.

4.14 The PCR indicates that in Belize, a high percentage of young males will continue to enter Belize's road system in the future. This requires continuous investments in awareness, enforcement and education activities.

4.15 The PCR states that GOBZ needs to provide support in maintaining the equipment supplied under the project (i.e., the Highway Patrol Vehicles).

4.16 The PCR suggests that traffic law enforcement needs to be monitored to ensure the benefits are uniform and continue over time.

4.17 Based on the previous, the Evaluator rates the Sustainability criterion as **Satisfactory**, which concurs with the PCR.

Borrower Performance

4.18 The PCR rates the performance of the Borrower/Implementing Agency as **Highly Satisfactory**, based on an assessment of the counterpart contribution to the project, commitment and ownership, the project management performance and their leadership role in the inter-agency coordination. The PCR stresses that the Borrower commitment was very high, as demonstrated by their willingness to take an additional loan.

4.19 The Evaluator rates the Borrower's performance as **Satisfactory** due to its failure to fully comply with the submission of the monitoring reports. This concern is raised in the PCR.

CDB Performance

4.20 The PCR provides a self-assessment rating of CDB's performance as **Highly Satisfactory**. The justification for the rating is that the project design has been recognised internationally for its multi-sectoral application of the Safe System Approach to reducing road traffic fatalities and injuries. The project was cited as best practice to risk assessment by the World Road Association, and it was awarded the Prince Michael International Road Safety Award. The PCR also refers to the CDB's effective and timely supervision. In light of the previous, the Evaluator concurs with the **Highly Satisfactory** rating.

5. OVERALL PERFORMANCE

5.01 The PCR rates the overall performance of the project as **Highly Satisfactory**. The Evaluator rates overall project performance as **Highly Satisfactory**. This rating is based on an arithmetic average of the total scores from separate assessments of the four core evaluation criteria: Relevance (Highly Satisfactory); Effectiveness (Highly Satisfactory); Efficiency (Highly Satisfactory); and Sustainability (Satisfactory).

5.02 Details of the ratings and justification for differences between those of the PCR and Evaluator are in Table 3.

TABLE 3: SUMMARY RATINGS:

| Criteria | PCR⁹ | OIE Review | Reason, if any, for Disagreement/Comments |
|---|------------------------|---------------------|--|
| Relevance | Highly Satisfactory | Highly Satisfactory | |
| Effectiveness | Highly Satisfactory | Highly Satisfactory | |
| Efficiency | Highly Satisfactory | Highly Satisfactory | |
| Sustainability | Satisfactory | Satisfactory | |
| Composite (Aggregate) Performance Rating | | | |
| Borrower Performance | Highly Satisfactory | Satisfactory | Failure to fully comply with the submission of monitoring reports. |
| CDB Performance | Highly Satisfactory | Highly Satisfactory | |
| Quality of PCR | NA | Satisfactory | |

6. LESSONS

6.01 The PCR identified four lessons learned from the implementation of the project:

- (a) Wide stakeholder engagement entrenches ownership on multi-sectoral projects.
- (b) Empowering young people to take action on road safety was a low-cost investment that translated into significant results towards improving safety and awareness of risks amongst youth.
- (c) The private sector is more likely to invest in road safety initiatives when results can be demonstrated.
- (d) M&E of road safety across multiple agencies requires standardised and consistent criteria to enable results to be effectively communicated to stakeholders and to support the targeting of resources where results are not materialising.

6.02 The Evaluator considers the lessons cited in the PCR to be essential and does not disagree with what has been proposed.

7. COMMENTS ON PCR QUALITY

7.01 The Evaluator rates the quality of the PCR as Satisfactory. The PCR provides valuable information on project design and implementation, and several important lessons learned from the project are also identified.

⁹ PPES scores and ratings used in PCR and PSRs to be converted to PAS 2013 scores and ratings, using the equivalence matrix in the relevant PAS 2013 Manual (Public Sector Investment Lending and TA; PBL; CSP).

8. DATA SOURCES FOR VALIDATION

8.01 The primary data sources for this validation exercise were CDB's First Appraisal Report (BD 44/12) and the Addendum (BD44/12 Add.1); CDB's PCR; 2012-2019 Project Supervision Reports and CDB's Registry files in respect of the project.

9. RECOMMENDATIONS FOR OIE FOLLOW-UP

9.01 No follow-up for OIE is required.

PUBLIC DISCLOSURE AUTHORISED

APPENDIX 1

CARIBBEAN DEVELOPMENT BANK



**PROJECT COMPLETION VALIDATION REPORT
ROAD SAFETY PROJECT
BELIZE**

FEBRUARY 2022

MANAGEMENT RESPONSE

The Draft Project Completion Validation Report (PCVR) was reviewed by Staff of the Economic Infrastructure Division (EID) and comments provided to the Office of Independent Evaluation in November and December 2021. A final version of the PVCR was sent to EID on February 22, 2022. We welcome the PCVR as it is the first specific road safety investment project by the Bank and accept the findings and conclusions contained therein.