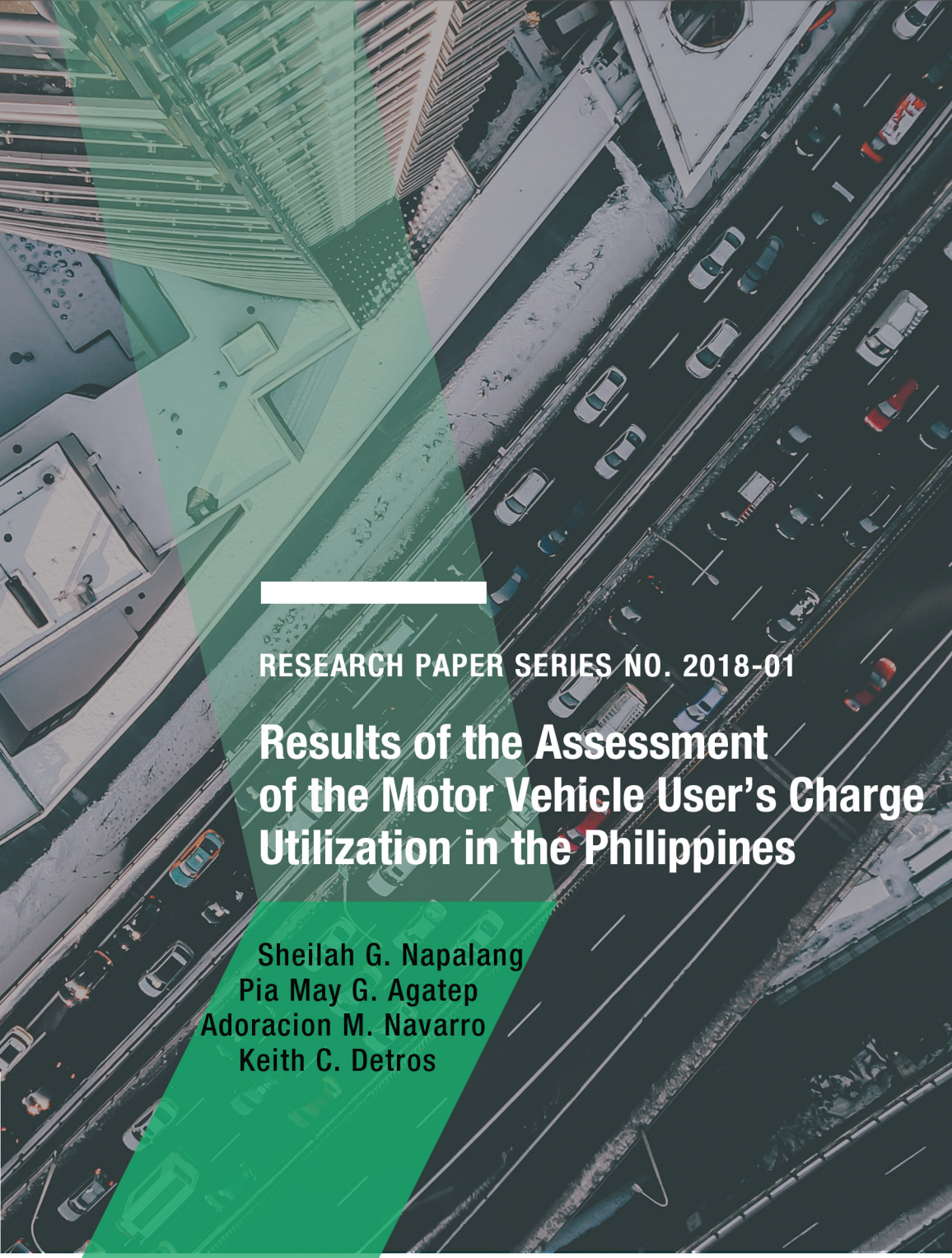


RESEARCH PAPER SERIES NO. 2018-01

Results of the Assessment of the Motor Vehicle User's Charge Utilization in the Philippines

Sheilah G. Napalang
Pia May G. Agatep
Adoracion M. Navarro
Keith C. Detros

PIDS
Philippine Institute for Development Studies
Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas

Research Paper Series No. 2018-01

Results of the Assessment of the Motor Vehicle User's Charge Utilization in the Philippines

Ma. Sheilah G. Napalang, Pia May G. Agatep, Adoracion M. Navarro, and Keith C. Detros

Philippine Institute for Development Studies
Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas

Published by
Philippine Institute for Development Studies

Please address all inquiries to:

Philippine Institute for Development Studies
18th Floor, Three Cyberpod Centris - North Tower
EDSA corner Quezon Avenue, 1100 Quezon City
Telephone: (63-2) 877-4000; 372-1291 to 92
Fax: (63-2) 877-4099
E-mail: publications@mail.pids.gov.ph
Website: http://www.pids.gov.ph

ISSN 1908-3297
ISSN 2508-0830 (electronic)
RP 06-18-600

Editorial and production team:
Sheila V. Siar, Carla P. San Diego, and Jane C. Alcantara

Table of Contents

List of tables and figures

Figure

List of Acronyms

ADB	–	Asian Development Bank
AEP	–	Annual Expenditure Program
AIP	–	Annual Investment Plan
AWP	–	annual work plan
AGDB	–	authorized government depository bank
BOC	–	Bureau of Construction
BOM	–	Bureau of Maintenance
BQS	–	Bureau of Quality and Safety
BTr	–	Bureau of the Treasury
CAR	–	Cordillera Administrative Region
CBEP	–	Community-Based Employment Program
CEO	–	City Engineering Office
COA	–	Commission on Audit
CSO	–	civil society organization
DBM	–	Department of Budget and Management
DENR	–	Department of Environment and Natural Resources
DEO	–	District Engineering Office
DILG	–	Department of the Interior and Local Government
DO	–	Department Order
DOF	–	Department of Finance
DOJ	–	Department of Justice
DOTC	–	Department of Transportation and Communications
DPWH	–	Department of Public Works and Highways
ESITU	–	Environmentally Sustainable Initiatives Transportation Unit
FHWA	–	Federal Highway Administration
GAA	–	General Appropriations Act
HDM-4	–	Highway Development Management-4
ILO	–	International Labour Organization
IRAP	–	International Road Assessment Program
IRR	–	implementing rules and regulations
JEV	–	Journal Entry Voucher
KDP	–	Kecamatan Development Programme
km	–	kilometer

kph	–	kilometer per hour
LBP	–	Land Bank of the Philippines
LDC	–	List of Deposited Collections
LGU	–	local government unit
LTO	–	Land Transportation Office
LTO-CO	–	Land Transportation Office-Central Office
LTO-DO	–	LTO-District Office
LTO-RO	–	LTO-Regional Office
MOA	–	Memorandum of Agreement
MVIC	–	Motor Vehicle Inspection Center
MVIS	–	Motor Vehicle Inspection System
MVRS	–	Motor Vehicle Registration System
MVUC	–	Motor Vehicle User's Charge
MWP	–	multiyear work plan
NCA	–	Notice of Cash Allotment
NCR	–	National Capital Region
ND	–	Notice of Disallowance
NRLP	–	National Road Lighting Program
NTP	–	Notice to Proceed
OPM	–	Operating Procedures Manual
OR	–	original receipt
PESO	–	Public Employment Service Office
PETC	–	Private Emission Testing Center
PhilGEPS	–	Philippine Government Electronic Procurement System
PIDS	–	Philippine Institute for Development Studies
PM	–	preventive maintenance
PMO	–	Project Management Office
PNPM	–	*Program Nasional Pemberdayaan Masyarakat*
PPP	–	public-private partnership
PS	–	Planning Service
QAU	–	Quality Assurance Units
RA	–	Republic Act
RAMM	–	Road Assessment Maintenance Management
RBS	–	Road Board Secretariat
RPO	–	Road Program Office

RO	–	Regional Office
RSM	–	Road Safety Manual
RSSRC	–	Road Sector Status Report Card
SARO	–	Special Allotment Release Order
SLRF	–	Special Local Road Fund
SP	–	*Sangguniang Panlungsod*
SRSaF	–	Special Road Safety Fund
SRSF	–	Special Road Support Fund
SVPCF	–	Special Vehicle Pollution Control Fund
TAR	–	Traffic Accident Report
TARAS	–	Traffic Accident Recording and Analysis System
TNZ	–	Transit New Zealand
LTNZ	–	Land Transport New Zealand
TWG	–	technical working group
UNDP	–	United Nations Development Programme
VPCC	–	Vehicle Pollution Control Committee
VPCFC	–	Vehicle Pollution Control Fund Committee

Abstract

Road funds like the Motor Vehicle User's Charge (MVUC) fund in the Philippines are earmarked funds that ensure a stable flow of resources, particularly for public road development projects. However, shortcomings from project identification to fund disbursement hamper effective implementation of the MVUC funding scheme. In assessing the different MVUC processes, this paper finds that transparency and efficiency in collection should be improved through automation and accurate recording. Project identification and investment programming must also adhere to the recommended procedures in the operating manual. As the study finds indications of fund underutilization, it suggests accelerating fund utilization through advance project development and investment programming. Looking at five MVUC-funded projects, it observes that only one of the five projects had an impact monitoring system. Nevertheless, findings from field visits and interviews with beneficiaries reveal that there are positive benefits from the MVUC mechanism. A closer look at successful cases in other countries also reveal good practices that are worth noting.

Introduction

Background of the study

A well-maintained road system enables efficient movement of people and goods and better access to employment, education, and social services, which eventually contribute to economic development. In the Philippines, two studies conducted by the Asian Development Bank (1997) and the World Bank (1999) raised the issue of poor road conditions of the country's national thoroughfares to the policymakers' attention. In a report by Virata and Associates (2005), the poor quality of roads was attributed to the meager allocation for road maintenance in the national budget due to the competing needs of other central government agencies, which affected the level of funds given to the Department of Public Works and Highways (DPWH) for road preservation. Inadequate funding delayed critical road maintenance works, which, in turn, increased rehabilitation costs and lowered the level of service for road users (Virata and Associates 2005).

To address the issue of inadequate funding, the Motor Vehicle User's Charge (MVUC) was established through Republic Act (RA) 8794 (otherwise known as "An Act Imposing a Motor Vehicle User's Charge on Owners of All Types of Motor Vehicles and for Other Purposes"). Enacted on June 27, 2000, the MVUC Act aims to ensure sustainable financing of road maintenance and minimization of air pollution from mobile sources. Section 7 of the MVUC Act stipulates that "all monies collected shall be earmarked solely and used exclusively (1) for road maintenance and the improvement of road drainage, (2) for the installation of adequate and efficient lights and road safety devices, and (3) for air pollution control".

MVUC utilization is riddled with allegations of fund misuse and politicized allocation. For instance, the World Bank (2009) reported that, in 2005, MVUC funds that were used to fund labor-intensive roadside maintenance programs—e.g., sweeping, beautification, and planting—reached a share of 35 percent. This is quite high considering its original allocation (25%) in the MVUC budget.

In the same report, the World Bank also claimed there was a politicization of project resource allocation. For example, despite the availability of planning tools like the Highway Development Management 4 (HDM-4), a road investment model that evaluates economic viability of road projects and optimizes economic benefits to road users, project identification did not always follow the HDM-4. While such tool can be used to prioritize projects, project identification

did not always follow the HDM-4. In 2005, only 38 percent of the MVUC-funded preventive maintenance projects were drawn from the HDM-4 generated list. Moreover, many areas, particularly engineering districts, received fixed allocation regardless of road maintenance needs and realignments to accommodate so-called urgent and special projects (WB 2009).

The same issue was also mentioned in a technical assistance report for the Asian Development Bank (ADB), which stated that about 60 percent of MVUC funds were allocated based on political and equity considerations (Katahira and Engineers International et al. 2011).

In 2008, the House of Representatives, led by Cagayan de Oro Representative Rufus Rodriguez, moved to abolish the Road Board due to signs of corruption. Rep. Rodriguez alleged that his district had not received any allocation due to his opposition to the then-Arroyo administration while other congressmen enjoyed benefits and bonuses (Sisante 2008). In 2009, Senator Miriam Defensor-Santiago called for an investigation of the Road Board and the use of the MVUC after Typhoon *Ondoy* caused massive flooding in Metro Manila and nearby areas. Senator Santiago based her allegations of the fund misuse on Commission on Audit (COA) reports that detailed some irregularities in the use of the special funds (Santiago 2009).

Despite these controversies, there had been no comprehensive evaluation of the MVUC Act implementation aside from the 2005 study, Road Board Assistance on Road User Charges Law Implementation (Virata and Associates 2005). Thus, this study attempts to provide an up-to-date evaluation of the existing MVUC fund allocation and operations. It is also part of the various impact evaluation studies conducted by the Philippine Institute for Development Studies (PIDS) in support to the call of the Department of Budget and Management (DBM) for background studies on programs being reviewed under the agency's zero-based budgeting framework.

Objectives of the study

Generally, the study evaluates the effectiveness and efficiency of the MVUC collection and disbursement schemes. It seeks to identify the weaknesses and strengths of the current MVUC allocation procedures, as well as the effects of these strengths and weaknesses on project implementation. It also seeks to evaluate the impacts of MVUC-funded programs and projects—in

terms of adequate maintenance and road drainage, adequate and efficient safety devices, and reduced air pollution control—on whether or not the objectives of the MVUC scheme are achieved.

The study is composed of two main components, namely, (1) process evaluation and (2) impact evaluation, with the following specific objectives.

Process evaluation

1) Assess the effectiveness of the MVUC scheme by investigating whether or not the funds are used for their intended purposes
2) Determine conditions and safeguards that have to be put in place in the use of the MVUC funds
3) Determine strategies to embed transparency and accountability in the MVUC utilization process

Impact evaluation

1) Evaluate the impacts of the MVUC scheme by gathering evidence on the programs and projects under the four special funds established under the law
2) Recommend capacity-building strategies for the government to evaluate the impact evaluation of road transport projects

Case studies were conducted to check adherence to existing processes and to gather evidence of impacts. Specific MVUC-funded projects were studied to evaluate the extent to which particular project objectives have been met.

Transport projects are undertaken to lower costs. The most common direct benefits of transport projects that will redound to the communities include:

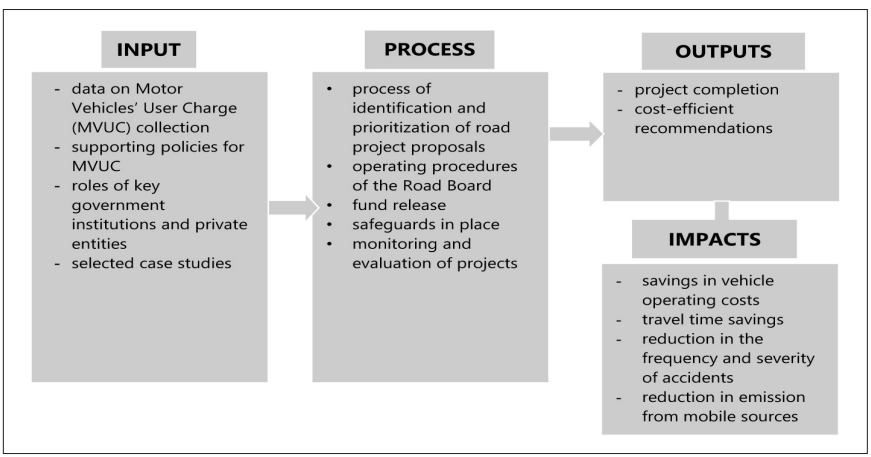
1) savings in vehicle operating costs;
2) travel time savings;
3) reduction in the frequency and severity of accidents; and
4) increase in comfort, convenience, reliability, and accessibility of service.

In general, the study adopted a modified input-process-output framework of inquiry (Figure 1). Input data included multiyear MVUC collections, pertinent policies and department orders of key institutions, and the roles of the various government and private stakeholders.

The input data obtained are described in this study to provide an understanding of the environment within which the processes (project identification, prioritization, implementation, and monitoring) operate. Other procedures, such as fund release and procurement, were also studied. The evaluation in this study documented the existing safeguards to ensure that the integrity and transparency of the processes are retained. Inquiry into the final product of the processes, as applied to the selected five case studies, is divided into two parts: examining the outputs, or the physical accomplishments of the selected MVUC-funded projects; and examining the impacts, which considers the projects' benefits to the immediate community and compares these benefits to the projects' declared objectives.

Process evaluation and assessment were based on official documents augmented by additional information from key informants. The projects' processes and impacts were presented through case studies. The main sources of information were the MVUC Act and its revised implementing rules and regulations (IRR), previous studies on the MVUC special funds, COA reports of the 2013 MVUC Operating Procedures Manual (OPM), and key informant interviews with the Road Board Secretariat (RBS), Department of Transportation and Communications (DOTC), Land Transportation Office (LTO), DBM, and DPWH central, regional, and district offices. Ocular inspection was also conducted on the locations of the selected case studies.

Figure 1. Framework of inquiry



Source: Authors' compilation

MVUC in the Philippines

Road funds financed through taxes on road users, like the MVUC fund in the Philippines, are considered earmarked funds. In public finance literature, the pros and cons of earmarking are often juxtaposed with those of general fund financing (i.e., pooling tax revenues into a general fund and allocating the general fund across government programs and projects) and the discussions are far from over. Literature argues that earmarking is better able to protect spending priorities (a commitment solution in public choice theory) and curb corruption, and is more favorable in the eyes of the voting public because it directly links tax revenues to public spending. In contrast, the favorable view on general fund financing rests on the separation of the taxation decision from the expenditure allocation decision. This offers flexibility and avoids suboptimal allocation that may be inherent in earmarking (e.g., excess funds parked under earmarking will have a higher social return if placed in more urgent public projects). These advantages of earmarking are closely related to the political economy perspective in decisionmaking. Such perspective can be crucial in countries with weak institutions and/or very tight budget. These problems are common in developing countries and, thus, road funds as earmarked funds continue to be relevant to them. In the Philippines, the road fund is as described in the next section. A comparison with road funds in other countries can be found in Section 5.

MVUC in a nutshell

In the Philippines, the earmarked road fund is sourced from a subset of road users—the motor vehicle owners. As stipulated in RA 8794, the MVUC is imposed through the registration fees of vehicles and penalties for overloading collected by the LTO annually. The monies are deposited to four special accounts in the National Treasury:

1) Special Road Support Fund (SRSF)
2) Special Local Road Fund (SLRF)
3) Special Road Safety Fund (SRSaF)
4) Special Vehicle Pollution Control Fund (SVPCF)

In accordance with the law, SRSF, SLRF, and SRSaF are placed under the DPWH while SVPCF is under the DOTC. The allocation for and the purpose of each special fund are summarized in Table 1.

The law stipulates that 70 percent of the SRSF should be used for the maintenance and drainage of national primary roads while the remaining 30 percent should be used for the maintenance and drainage of national secondary roads. Furthermore, the operating expenses of the Road Board and its secretariat are charged to the SRSF.

A total of PHP 112.5 billion have been deposited to the MVUC fund from 2001—following the completion of the first version of the Operating Procedures Manual—to 2014 (Table 2). During the same period,

Table 1. Special funds under the Motor Vehicles User's Charge

Responsible Agency	Fund Name		Allocation (in %)	Purpose
DPWH	Fund 151	Special Road Support Fund	80	road maintenance and improvement of drainage of national primary and secondary roads
	Fund 152	Special Local Road Fund	5	maintenance of local roads, traffic management, and road safety devices
	Fund 153	Special Road Safety Road	7.5	installation of traffic signs, pavement markings, and safety devices
DOTC	Fund 151	Special Vehicle Pollution Control Fund	7.5	air pollution control

DPWH = Department of Public Works and Highways;
DOTC = Department of Transportation and Communications
Source: Road Board (2015)

PHP 105 billion were disbursed through the four special accounts, bringing the total fund balance to about PHP 7.5 billion by 2014.

Of the total releases between 2001 and 2014, PHP 87.13 billion (83% of total disbursement) were from the SRSF, PHP 4.14 billion were from the SLRF (3.9%), PHP 7.75 billion from SRSaF (7.4%), and PHP 6 billion from the SVPCF (5.7%) (Figure 2). The disbursement from the SRSF includes the operating expenses of the Road Board and its secretariat for the same time period, which totals about PHP 330.6 million (0.38% of the total SRSF disbursement). Details of the annual disbursement for each special fund will be discussed in the respective case studies.

Table 2. MVUC fund total collections and releases, 2001–2004 (in PHP)

Year	MVUC Collections (in PHP)	Releases (in PHP)
2001	3,171,682,068.85	0.00
2002	4,419,422,233.78	701,347,687.00
2003	5,455,562,970.16	4,068,516,000.00
2004	6,649,022,226.76	4,886,706,057.00
2005	7,207,309,000.06	6,869,331,120.00
2006	7,854,959,214.52	11,547,156,789.00
2007	8,443,724,502.95	10,541,325,541.00
2008	8,579,097,694.44	7,953,109,898.00
2009	9,031,116,338.79	6,267,383,944.00
2010	9,581,147,502.05	6,019,101,776.00
2011	10,100,381,687.60	8,836,159,908.00
2012	10,364,734,263.94	12,698,044,083.00
2013	10,856,204,914.51	8,216,715,685.00
2014	10,789,870,932.63	16,413,488,394.00
Grand total	112,504,235,551.04	105,018,386,882.00
Fund balance	7,485,848,669.04	

MVUC = Motor Vehicle User's Charge
Source: Road Board (2015)

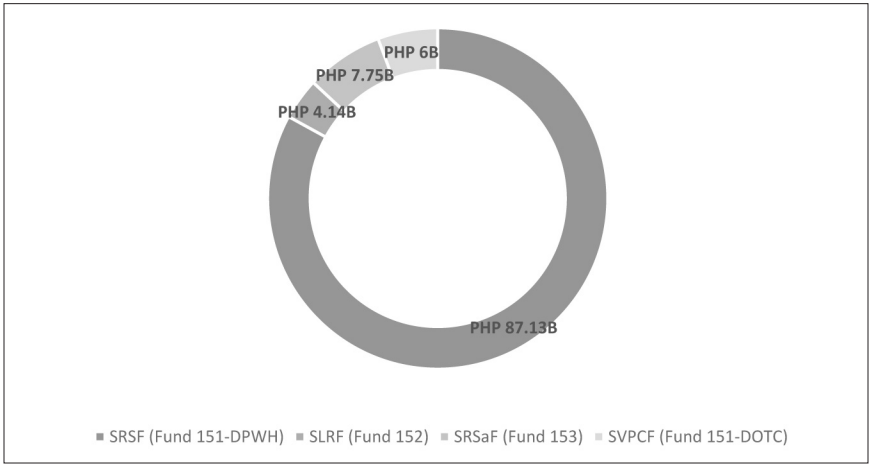
In terms of utilization per special fund (Figure 3), the SRSF has the highest utilization rate (ratio of total disbursement to total fund allocation) at 96.8 percent, followed by the SRSaF at 91.9 percent. The SLRF and SVPCF have utilization rates of 73.5 and 71.1 percent, respectively.

An analysis of available MVUC funds for Fund 151 (SRSF) and Fund 153 (SRSaF) from 2010 to 2015, vis-à-vis the DPWH Budget for Asset Preservation for the same duration, infers that the MVUC provides substantial additional funds for the maintenance of national roads (Figure 4) on the average. Additional funds reached a high share of 32 percent of the total maintenance fund in 2014. Cumulatively, the MVUC provided 39 percent of the total fund during the period 2010–2015 (Figure 5).

Implementation objectives

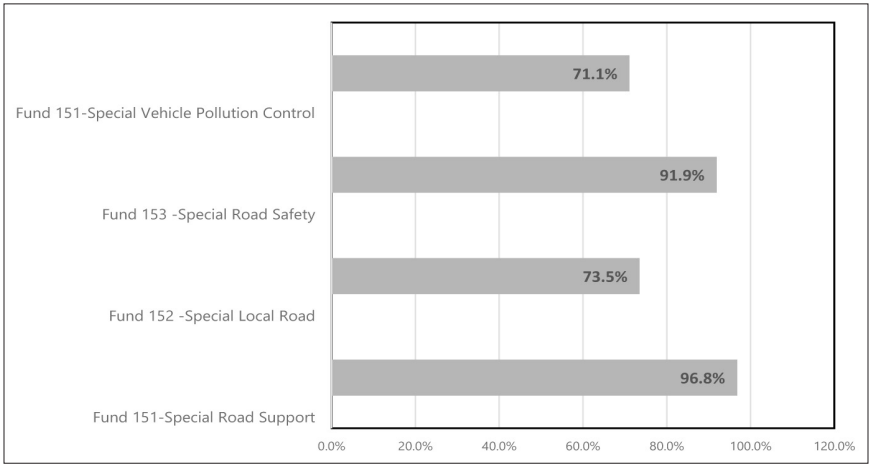
The IRR of the MVUC Act, issued jointly by the secretaries of the DPWH and the DOTC on August 16, 2000, specifies the following objectives:

Figure 2. MVUC disbursement by special fund (cumulative, 2001–2014)



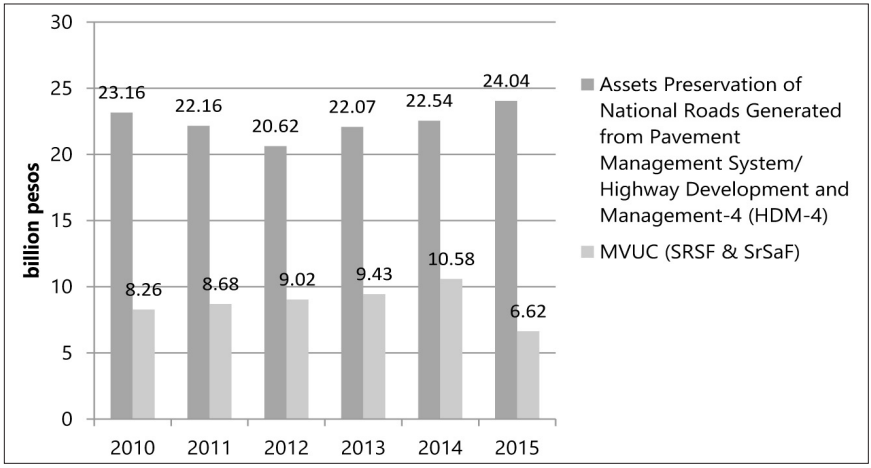
MVUC = Motor Vehicle User's Charge; SRSF = Special Road Support Fund; SLRF = Special Local Road Fund; SRSaF = Special Road Safety Fund; SVPCF = Special Vehicle Pollution Control Fund
Source: Road Board (2015)

Figure 3. Utilization rate per special fund (cumulative, 2001–2014)



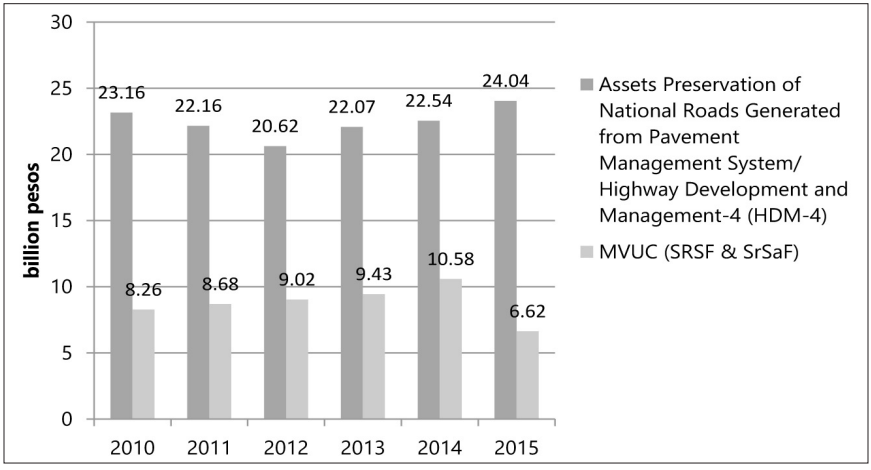
Source: Road Board (2015)

Figure 4. MVUC funds vis-à-vis DPWH Assets Preservation budget from GAA



MVUC = Motor Vehicle User's Charge; DPWH = Department of Public Works and Highways; GAA = General Appropriations Act; SRSF = Special Road Support Fund; SRSaF = Special Road Safety Fund
Note: Data from Road Board and DPWH
Source: Authors' rendition

Figure 5. Shares of MVUC and DPWH-GAA in the total maintenance fund



MVUC = Motor Vehicle User's Charge; DPWH = Department of Public Works and Highways; GAA = General Appropriations Act
Note: Data from Road Board and DPWH
Source: Authors' rendition

1) Provision of adequate maintenance of the national and provincial roads to ensure satisfactory service to road users, efficient road transport operations, and preservation of road assets
2) Identification of the physical and financial maintenance needs of the national road network, as optimized in a multiyear program within projected funding resource, with consideration of road safety requirements
3) Determination of optimal medium-term funding needs and allocations for the national and local road networks in relation to the economic and functional performance of the road networks, as a basis for evaluating the equity burden of road user charges
4) Prioritization of road maintenance needs as well as redressing and resolving maintenance backlogs, inclusive of road safety requirements
5) Provision of a system for contracting maintenance work through competitive bidding;
6) Conduct of regular monitoring of road networks and road works, inclusive of road safety requirements and local road maintenance, to ensure prompt objective assessment and feedback of system performance and quality
7) Formulation and implementation of a comprehensive program for the prevention, control, and management of air pollution from mobile sources consistent with the Philippine Clean Air Act of 1999 and its IRR
8) Establishment and implementation of the appropriate structural and procedural improvements to carry out these policies[1]

There have been three amendments to the IRR of RA 8794, as follows:

1) The heading of the first column of the tables in Schedule 1 of the IRR was changed from "2000" to "base rate" in September 2000.[2]

[1] Rule 1, Article 1, of the IRR issued in 2000

[2] DPWH Department Order No. 161, Series of 2000

2) The requirement for a work program was amended by requiring an expenditure program and the responsibilities of the RBS were enhanced in 2012.[3]
3) The gross vehicle weight of trucks in the antioverloading provisions of the IRR was amended in April 2013.[4]

Key agencies involved

This section outlines the responsibilities of the various key agencies involved in the collection, management, and disbursement of the MVUC fund. It will also highlight the identification, prioritization, and implementation of the projects financed by the various special funds, as prescribed by the law and its IRR and other subsequent pertinent department orders.

Road Board

To ensure the prudent and efficient management and utilization of the special funds, RA 8794 stipulated the creation of the Road Board to be composed of seven key members, namely:

1) the secretary of Public Works and Highways, as ex-officio chairperson;
2) the secretary of Finance, as ex-officio member;
3) the secretary of Budget and Management, as ex-officio member;
4) the secretary of Transportation and Communications, as ex-officio member; and
5) three other members from transport and motorist organizations that have been active and in existence during the past five years, appointed for a term of two years by the Philippine president upon the recommendation of the DPWH secretary and the DOTC secretary.

The Road Board convened for the first time on November 22, 2000 under the leadership of then DPWH Secretary Gregorio R. Vigilar. It performed its functions based on the IRR of the MVUC Act.

[3] As disclosed during the interview with RBS on March 25, 2015. The study team, however, was not given the specific Board Resolution date or number.

[4] Joint Resolution of DPWH and DOTC approved on April 5, 2013

To provide administrative guidance on all matters, the Road Board developed an OPM that has been revised through the years to its latest 2013 version. Consistent with the IRR of the MVUC act, the 2013 Revised OPM reflects the following functions of the Road Board:

Operation of special funds. To establish the necessary procedures, including appropriate controls, for collection of monies, deposit to the special trust accounts in the National Treasury, and disbursements from the MVUC account, and to develop the appropriate accounting, auditing, and reporting arrangements, in accordance with the accounting and auditing regulations of the government.

Management of special funds. To monitor the income and expenditure of the monies and approve withdrawals from the special funds, in accordance with Section 7 of the MVUC Act.

Approval of expenditure programs. To approve on an annual basis, prior to the beginning of the financial year, the Annual Expenditure Program (AEP) for the SRSF; SRSaF, identified through the Traffic Accident Recording and Analysis System (TARAS)[5] and road safety audits conducted by the DPWH without prejudice to road sections that the Board may, upon recommendation of the DPWH, consider for funding during the course of the year; and the SVPCF; as well as the proposed apportionment of the SLRF to provincial and city governments.

Approval of special budgets. To approve a special budget for each special fund based on the approved expenditure program and covering either an annual or multiyear period as may be applicable, and to submit such to the DBM for release of funds.

[5] TARAS is a graphic data entry and statistical query system providing access to information on traffic accidents on national roads throughout the Philippines. It is managed and implemented by the DPWH. It stores and analyzes traffic data collected for national roads and identifies hazardous locations or road sections with high frequency and severity of traffic accidents. The intent is to use the information in location prioritization through the Ranking List for road safety projects. However, according to the DPWH-Road Program Office resource person (in the Planning and Evaluation Division), the use of the TARAS has been discontinued upon the recommendation of the DPWH Road Safety Consultant. The reason given was that the data collected were incomplete and hence, do not provide the complete picture of the road safety situation in the country.

Review of work programs. To review and approve revisions of the annual work plans (AWPs) in accordance with updated estimates of income to the special funds and level of work accomplishment based on submitted work plan, and to establish an operating margin above which the implementing agencies (the DPWH and the DOTC) can modify or make variations in the individual work project or the total program, subject to the prior approval of the Board.

Introduction of complementary expenditure programs under other funding. To consider, in the approval of the AEPs, other work programs—to be implemented by the DPWH and the DOTC—financed through other sources, including:

1) continuing appropriations for road maintenance, road safety, local roads, and vehicle emissions control from Congress and
2) any grant from external funding agencies, donors, and private financing institutions.

Implementation of procedures for monitoring performance and managing program. To require the DPWH and the DOTC to provide and perform acceptable and systematic procedures for measuring conditions; maintaining a database; determining treatments, setting priorities, and developing cost estimates and quantified benefits on a life-cycle basis; and managing the implementation of programs according to planned costs and time.

Approval of bidding procedures. To approve competitive bidding procedures for execution of road maintenance and road safety projects.

Utilization of the special funds. To continually monitor the utilization and deployment of the four special funds, ensuring that the same are allocated and used effectively and efficiently in accordance with the approved programs.[6]

Promotion of MVUC-related activities and preparation of reports. To raise public awareness on the use of the special funds and the activities of

[6] For this purpose, the Board may require DPWH and DOTC to submit periodic reports at interval not longer than three months presenting physical and financial progress in relation to approved programs and projection of expenditures.

the Board better informing road users of their involvement to the program; to publish an Annual Report that shall include, among others, (1) a statement of the Board's activities during the year, (2) the annual financial statements and audit reports of the Board, including a separate accounting of each of the four special funds, and (3) an evaluation of the Board's performance in comparison with its statements of intent made at the beginning of the fiscal year not later than four months after the end of the fiscal year; to make the Annual Report publicly available and widely disseminated in a popular form; and to prepare or cause to be prepared such other reports as may provide for greater transparency and clarity in the operations of the Board.

Supervision of MVUC-related programs and activities. To exercise supervision and control over all substantive activities that are funded by and emanate from the use of the four special funds, including activities undertaken by DPWH and DOTC.

Road Board Secretariat

Section 6 of the IRR of RA 8794 stipulates the creation of the RBS to support the functions of the Board. Hence, following the creation of the Board, then DPWH Secretary Gregorio R. Vigilar issued Department Order (DO) 171 creating the Task Force for the establishment of the Road Board Secretariat in September 2000. However, although the RBS was created in January 2001, it was not fully operational until 2004. The delay was mainly due to the limited plantilla positions approved for the RBS. Thus, most of its initial personnel were 'borrowed' on detail status, particularly the engineers and accountant.[7]

The RBS is headed by an executive officer—appointed by the Board—who also acts as the Board secretary. The appointee is responsible for the day-to-day management of the special funds and the implementation of the Board's decisions. The RBS has the following tasks:

1) bookkeeping of proper accounts and records
2) preparation and submission of audit for each financial year, balance sheets, statements of income and expenditure, and statements of cash flow as prescribed by COA

[7] Key informant interview with former Undersecretary Teodoro Encarnacion, one of the two undersecretaries through which the RBS task force reported to the secretary, an arrangement mentioned in DO 171. The interview response was received through email on May 26, 2015.

3) preparation of the Annual Report
4) organizing meetings of the Board and its subcommittees

In 2012, through a board resolution signed by the secretaries of the DPWH and the DOTC, the responsibilities of the RBS[8] were expanded to include:[9]

1) undertaking research activities, policy studies and preparing special/technical reports needed by the Board;
2) implementing special projects upon the direction and supervision of the Board;
3) making or accepting grants or donations;
4) executing routine contracts, on behalf and/or under the direction of the Board; and
5) exercising such other functions as may be directed by the Board.

Currently, the RBS has a total of nine plantilla positions, including the executive director and division heads. Additional 15 entry-level positions have also been approved to support the functions of each division (12 had been filled up and 3 were being advertised at the time this research was being undertaken). All positions require civil service eligibility to ensure level of competency.

Figure 6 presents the interim organizational structure of the RBS.

Department of Public Works and Highways

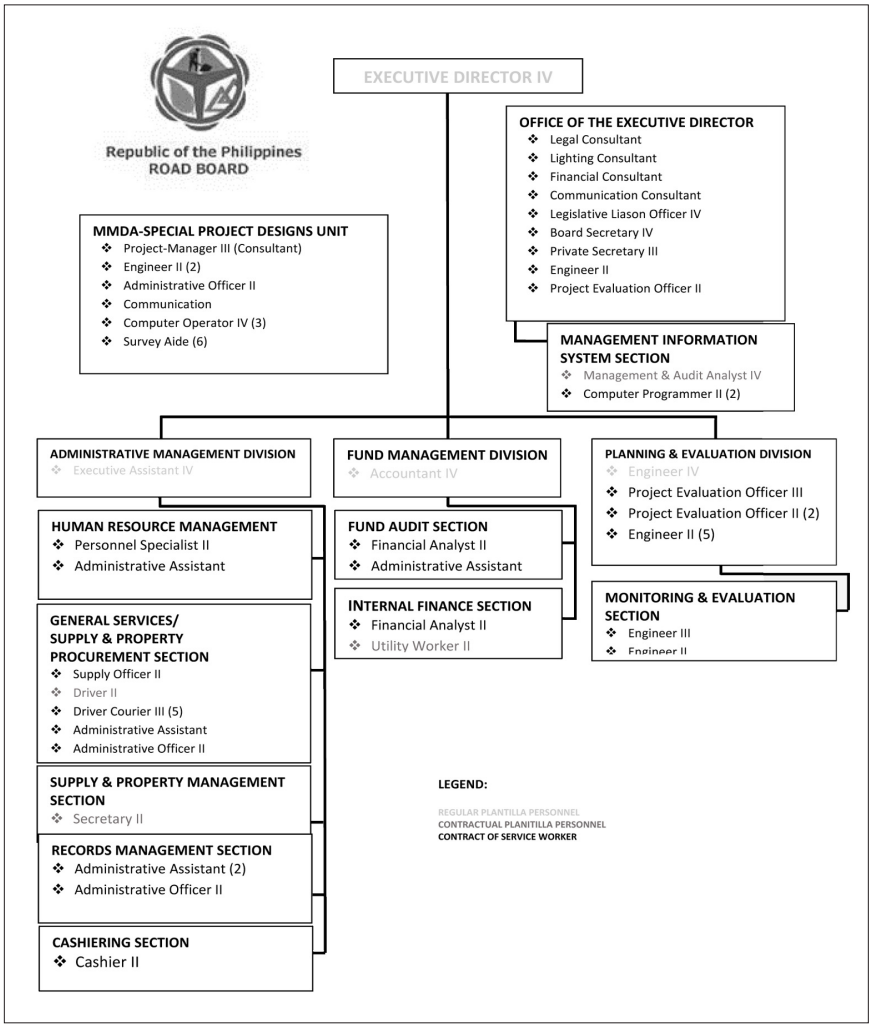
To ensure prudent, wise, effective, and efficient SRSF and SRSaF utilization, the DPWH performs the following functions:

1) preparation and submission to the Road Board of the AWP and rolling multiyear work plans (MWPs) through the Road Program Office (RPO)
2) reporting on the status of funds under the SLRF and availability for transfer to the various local governments, in coordination with the Department of the Interior and Local Government (DILG)
3) implementation of the approved road maintenance and road safety programs, duly monitored by the Bureau of Construction (BOC)
4. submission of annual reports to the Road Board

[8] Interview with Road Board Secretariat, March 25, 2015

[9] Section (e) of the Revised IRR, approved in 2012

Figure 6. Interim organizational structure of the Road Board Secretariat



Source: Road Board (2015)

Road Program Office

To assist the DPWH in the performance of its tasks and in accordance with Section 12 of the IRR of the MVUC Act, the DPWH established the RPO. The RPO's constitution, functions, and responsibilities, as stipulated by DO 005-2011, are as follows:

1) The director of Planning Service (PS) shall be the head of the RPO. As such, he/she shall coordinate and consolidate the

planning and programming activities of the PS and the planning and programming activities of the Bureau of Maintenance (BOM) for MVUC projects. He/she shall also ensure that the consolidated plans and programs are coordinated with the RBS. He/she is also tasked to review the plans and programs for MVUC resource allocation prior to submission to the DPWH secretary and subsequent transmission to RBS.

2) The RPO head shall be supported by a team from the PS and the BOM. The RBS shall also provide staff support to the RPO head as the need arises, subject to the approval of the Road Board.
3) The RPO head shall coordinate with all other units within and outside of the DPWH on matters related to MVUC-funded road maintenance and road safety activities.
4) The RPO head shall submit the planning and programming targets and outputs to the RBS. The RBS, in turn, shall submit and present the MVUC plans and programs to the Road Board for deliberation and approval.
5) The PS shall be responsible for the:
    - planning and programming of preventive maintenance (PM) projects—funded from the regular PM program under the General Appropriations Act (GAA);
    - preparation of the PM projects list generated from the Pavement Management System/HDM-4[10] Planning Application for resource allocation under the SRSF (the regional offices and district engineering offices shall validate the HDM-4 outputs before including such in the list of projects under the GAA and MVUC funds); and
    - preparation of the list of road safety projects prioritized from TARAS and Road Safety Audits that will be funded from the SRSF.
6) The BOM shall be responsible for the:
    - preparation of the Annual Routine Maintenance Program under the GAA and MVUC funds and

[10] The DPWH uses HDM-4 as its main tool for pavement management. HDM-4 is a road investment model that evaluates economic viability of road projects and optimizes economic benefits to road users. It seeks to find optimum strategies for planning and maintaining pavements in a serviceable condition over a given period of time.

- preparation of the Roadside Maintenance Program under the GAA and MVUC funds.

7) The implementing units[11] shall be responsible for the submission of accomplishment reports to the BOC.
8) The BOC shall be responsible for the administration of the Project Monitoring System, which includes all MVUC-funded projects.
9) The Quality Assurance Units (QAU) shall be responsible for the implementation oversight through inclusion of the MVUC projects in their regular QAU assessments. The QAU reports shall be submitted to the RPO head.[12]

Department of Transportation and Communications

Pursuant to Sections 7 and 9 of RA 8794, the IRR provides for the functions, duties, and responsibilities of DOTC in collecting MVUC through the LTO and the disposition of the monies accruing to the SVPCF. In accordance with the authority of the DOTC secretary to undertake structural and procedural improvements ensuring prudent, wise, effective, and efficient utilization of the said fund, the IRR also established the Vehicle Pollution Control Fund Committee (VPCFC).

The VPCFC is responsible for the administration and management of the fund, providing directions to the projects or activities utilizing the fund and, in general, supervising, monitoring, and ensuring the proper implementation of the approved vehicle pollution control program.

The committee is headed by the DOTC secretary and assisted by a Technical Working Group (TWG)—headed by the DOTC director for Planning—and the DOTC Secretariat. Membership to the committee, the TWG, and the secretariat staff are all determined by the DOTC secretary. The DOTC secretary may also assign personnel, either on a temporary or permanent basis, from other DOTC offices and units. The TWG and the DOTC Secretariat are responsible for the submission of annual and multiyear programs of the department. The work programs should identify the specific programs, projects, and activities aimed at

[11] DPWH DO 24 series of 2007, as amended by DPWH DO 54, series of 2011, prescribes that the implementing unit for projects with costs up to PHP 50 million will be the district engineering offices and for those with costs above PHP 50 million, the regional offices.

[12] Note that the PS, BOM, implementing units (regional offices, district engineering offices), BOC, and QAU are all in the DPWH.

preventing, controlling, and managing air pollution from motor vehicles; determine the resources and funding requirements; and set the timetable for implementation—subject to approval and modification, if necessary, of the Road Board.

In the preparation of the work programs, the VPCFC shall coordinate with the Department of Environment and Natural Resources (DENR) to ensure that the program and its implementation are consistent with the Philippine Clean Air Act of 1999.

The committee is also tasked to conduct studies and surveys necessary to meet air pollution reduction objectives and to monitor, manage, and administer the SVPCF, in accordance with the Road Board guidelines. The first VPCFC was constituted in 2005 through DO 2005-16.

Land Transportation Office

The LTO is a line agency under the DOTC mandated to enforce the existing traffic rules and regulations of the country, including driver's licensing and vehicle registration. The agency is responsible in ensuring the proper collection and remittance of the MVUC levy. It is directly in charge of collecting the MVUC by including it in the annual vehicle registration fee and imposing penalties on violators of the rules on vehicle capacity overloading. It deposits all collections to the National Treasury, which in turn, places these into the four special trust accounts, in conformance with Section 7 of the MVUC Act. It also submits recommendation to the DOTC secretary on any change in the classification of motor vehicles. The LTO, through its district and regional offices, also functions as an implementing arm for projects under the SVPCF.

Department of the Interior and Local Government

By virtue of the Memorandum of Agreement (MOA) entered into by the DILG and the DPWH in 2005 for the administration of the SLRF, the DILG agreed to:

1) collaborate with the DPWH in administering/overseeing the implementation and utilization of the SLRF at the local government unit (LGU) level in accordance with the prescribed policies and standards under the MVUC law and its IRR;

2) provide the DPWH with data on LGU road length and vehicle registration as basis for apportionment of the SLRF to provinces and cities;
3) inform the provincial and city governments of their SLRF annual allocation for the preparation of their AWPs;
4) review, consolidate, and submit the LGUs' AWPs to the Road Board through the DPWH-RPO;
5) monitor the progress and utilization of the SLRF;
6) install and operate an Implementation Tracking System with the assistance of the DPWH;
7) institutionalize systems and mechanisms on road maintenance management in the LGUs; and
8) represent the LGUs in the Road Board.

Local government units

The LGUs are tasked to prepare and submit, through the DILG, their AWPs corresponding to the amounts allocated by the Road Board. Upon approval of the AWPs, the LGUs and the DPWH, through its appropriate Regional Office (RO), must enter into a MOA to delineate responsibilities in project implementation. The MOA is executed for every fund release to the LGU. The general terms of the MOA direct the LGUs to

1) Implement projects funded by the SLRF, in accordance with the approved Work Program and Maintenance Performance Standards and Procedures required of all LGUs and to submit to the DILG a quarterly progress report, copy furnished the DPWH-District Engineering Office (DEO);
2) establish, maintain, and operate a financial management system to record details of expenditures from the SLRF released to the LGUs and to submit quarterly financial reports;
3) prepare and submit to the DPWH an Annual Report not later than the 20th of February of each year;
4) conduct an annual inventory of existing local road networks for the updating of the database of provincial/city roads assets and the submission of the same to the DILG Central Office, which, in turn, is in charge of updating of the National Inventory of Local Roads; and
5) periodically inspect, verify, and measure the work accomplished through engineers assigned to monitor the SLRF projects.

The LGUs are required to open and maintain a separate Trust Account/Local Current Account to be known as the Road Fund Disbursement Account to be used exclusively for road maintenance, road safety devices, and traffic management. Fund releases from the SLRF to the beneficiary LGUs are deposited to this account.

Department of Budget and Management
The DBM is mandated to promote the sound, efficient, and effective management and utilization of government resources. In keeping with its mandate, it ensures that the expenditures from the MVUC fund is within the approved MVUC expenditure program (i.e., budget ceiling) for the year, allocated per special fund. The agency is responsible for the issuance of Special Allotment Release Order (SARO) and the Notice of Cash Allotment (NCA) for the approved projects under the four special trust accounts, which are submitted by the Road Board to the department.

Process Evaluation

Key processes
The following describes the key processes prescribed in RA 8794, its IRR and other subsequent department orders, and the OPM of the Road Board.

Collection and deposit of monies
The collection of monies and subsequent deposit to the Bureau of the Treasury (BTr) is primarily performed by LTO, in accordance with Presidential Decree No. 1234, Joint Memorandum Circular No. 1-81 of the Department of Finance (DOF) and COA, and DOF Order No. 52-96 dated May 22, 1996. The procedure for the collection and deposit of MVUC can be divided into the following major tasks:

1) The LTO District Offices (LTO-DOs) nationwide collect vehicle registration fees from vehicle owners under their jurisdictions as well as overloading penalties, when applicable.
2) Each LTO-DO deposits the collections to the Land Bank of the Philippines (LBP), the authorized government depository bank for MVUC, and prepares the List of Deposited Collections (LDC), with breakdown by fund code. It also submits to the

LTO Regional Office (LTO-RO) the Abstract of Collections, the Monthly Report of Collections, and the LDC, based on the duplicate copy of the original receipts (ORs).

3) The LBP issues a letter of confirmation and validated deposit to the LTO-DO. It likewise furnishes the BTr with the LDC and systems-generated report for the four special funds.
4) The LTO-RO consolidates the reports from the district offices and submits a financial report and MVUC certification to the LTO Central Office (LTO-CO). The LTO-RO likewise submits the Abstract of Collection, LDC, and deposit slips with ORs for audit and final custody to the respective COA regional offices.
5) The LTO-CO submits monthly MVUC certifications to the Road Board through the RBS, the DPWH/DOTC, and the BTr. The LTO-CO is required to submit the financial reports for the preceding month by the 20th of each month.
6) The BTr issues the Journal Entry Voucher (JEV) for MVUC certifications to the Road Board through the secretariat and the DPWH/DOTC.

The detailed process flow for the collection and deposit of MVUC monies is outlined in Figure 7.

Project identification, prioritization, and approval

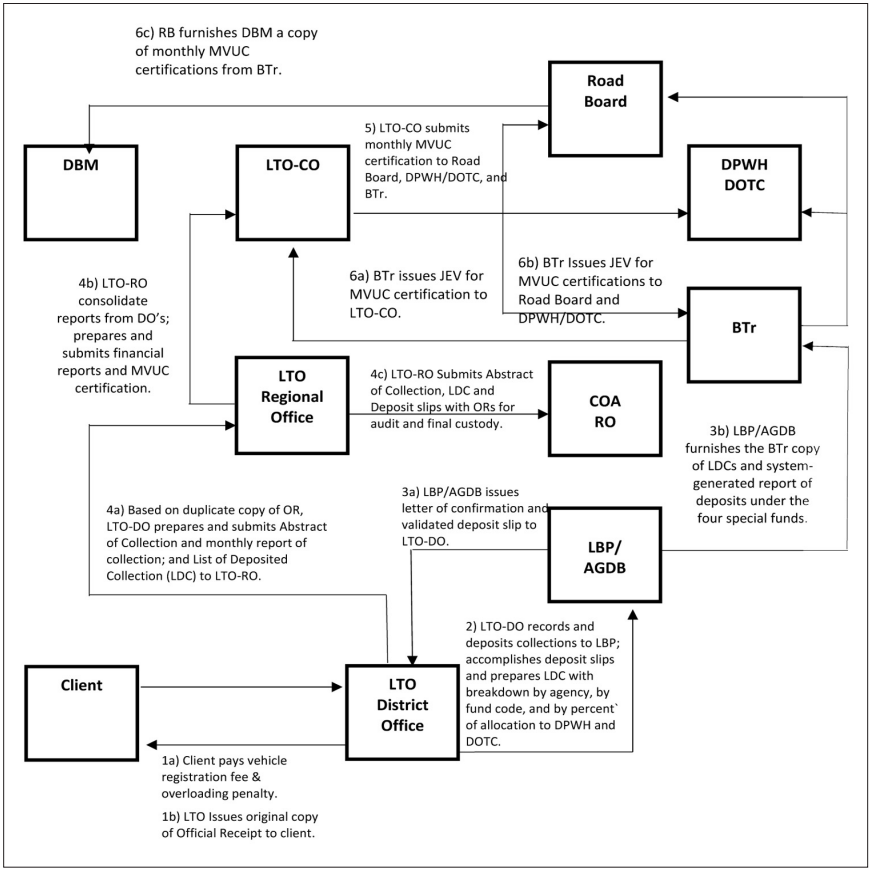
The four documentary requirements to initiate funding request under any of the four special funds, prescribed in the 2013 OPM of the Road Board, are:

1) program of works;
2) detailed project cost estimates;
3) detailed plan; and
4) photos of the proposed road project with station limits, or of the pollution control project.

Implementing agencies shall submit these to the proponent agencies. For SRSF and SRSaF, implementing units may be the district engineering offices or the regional offices while DPWH serves as the proponent agency. For the SLRF, the LGUs submit required documents to the DILG as its proponent agency. For the SVPCF, the LTO-ROs submit requirement to DOTC.

Once finalized, the proponent agency will endorse the annual list of projects to the Road Board for review. The 2013 OPM of the Road Board will decide the work category and output class of each activity. Designated output classes will determine which activities are eligible under each special fund. Work categories under Output Classes 1 and 2 (maintenance of national primary and secondary roads) are eligible for

Figure 7. Process flow for the collection and deposit of MVUC monies



MVUC = Motor Vehicle User's Charge; RB = Road Board; BTr = Bureau of the Treasury; DBM = Department of Budget and Management; LTO-CO = Land Transportation Office-Central Office; LTO-RO = Land Transportation-Regional Office; LTO-DO = Land Transportation Office-District Office; DPWH = Department of Public Works and Highways; DOTC = Department of Transportation and Communications; COA = Commission on Audit; LBP = Land Bank of the Philippines; AGDB = authorized government depository bank;
Source: Commission on Audit [COA] (2009)

SRSF funding, while those in Output Class 3 (maintenance of local roads) are eligible for SLRF funding (Table 3).

Meanwhile, work categories under Output Classes 4–6 are eligible for SRSaF funding (Table 4).

Work categories under Output Class 7 are eligible for SVPCF funding (Table 5).

All proposed projects are evaluated by the RBS. However, the evaluation procedures under each special fund differ. For project proposals under the SRSF and the SRSaF, the OPM prescribes that RBS coordinates with the DPWH-RPO to ensure that the proposed projects conform to the results of applying HDM-4 and TARAS and that there is no funding duplication, that is, the proposed projects have not been funded or are not being funded from other sources.

For project proposals under the SLRF, the OPM prescribes the following allocation formula for each city/municipality:

$$LGU\ allocation = Annual\ SLRF(0.30PI + 0.20VHI + 0.50R$$

where PI = performance index
VHI = vehicle population index
RLI = road length index

The performance index refers to the performance of the LGU and the index being used currently is derived from the Seal of Good Housekeeping program being implemented by the DILG.[13] The Seal of Good Housekeeping monitors and awards LGUs with good performance in internal housekeeping specifically in the areas of local legislation, development planning, resource generation, and resource allocation.

For the SVPCF, the IRR of the MVUC law directs the DOTC to coordinate closely with the DENR in the preparation of its AWP and AEP to ensure that the program and its implementation are consistent with the Philippine Clean Air Act of 1999. Under the OPM, DOTC will submit these to the Road Board, through its secretariat, prior to the financial year to which the programs will be implemented. Operationally, the target submission is every November. The DOTC secretary—or the delegated representative—should confirm the submitted AEP in writing with a clear implementation schedule. The submitted AEP should include a brief description of the proposed course or program, including the

[13] Interview with RBS on February 9, 2015

Table 3. Work categories for Output Classes 1–3

Output	Work Category Number and Name	Output Class 1: Maintenance of National Primary Roads	Output Class 2: Maintenance of National Secondary Roads	Output Class 3: Maintenance of Local Roads
Carriageway maintenance	10 Pavement management	√	√	√
	11 Regravelling	√	√	√
	12 Bridge and structure maintenance	√	√	√
Roadside maintenance	15 Shoulder maintenance	√	√	√
	16 Drainage maintenance	√	√	√
	17 Vegetation control	√	√	√
	18 Traffic services and maintenance	√	√	√
Preventive maintenance	20 Pavement resurfacing	√	√	√
	21 Concrete reblocking	√	√	√
	22 Seal widening	√	√	√
	23 Preventive works	√	√	√
Rehabilitation and improvement	25 Rehabilitation	√	√	√
	26 Drainage improvement	√	√	√
	27 Rehabilitation plus improvement	√	√	√
Emergency reinstatement	28 Emergency reinstatement	√	√	
Road management	30 Professional services	√	√	
	31 Administration	√	√	

Note: Emergency reinstatement pertains to immediate or temporary repairs to address the damages caused by sudden and unexpected events.
Source: Road Board (2013)

Table 4. Work categories for Output Classes 4–6

Output	Work Category Number and Name	Output Class 4: Safety Works on National Roads	Output Class 5: DPWH Safety Works on Local Roads	Output Class 6: LGU Safety Works on Local Roads
Safety devices	50 Safety devices installation	√	√	√
	51 Safety devices operation	√	√	
Safety projects	55 Safety projects	√	√	√
Road safety education and training	57 Road safety education and training	√	√	
Road safety management	59 Road safety management	√	√	

Source: Road Board (2013)

Table 5. Work Categories for Output Class 7

Output	Work Category Number and Name	Output Class 7: Motor Vehicle Pollution Control
Vehicle standards and enforcement	60 Development of vehicle standards and regulations	√
	61 Enforcement of vehicle standards and regulations	
Vehicle pollution control education and training	67 Vehicle pollution control education and training and public information	√
Vehicle pollution control management	69 Vehicle pollution control management	√
Alternative vehicle pollution control technology	70 Alternative vehicle pollution control technology	√

Source: Road Board (2013)

target audience and geographical spread, objectives and measures, total cost, proposed starting date, and duration of the course or program.

Funding release process

Upon approval of the projects, the Road Board will submit the approved budget to the DBM. The DBM then issues the SARO/NCA to the proponent agencies after verification of availability of funds based on the approved expenditure program (i.e., approved budget ceiling for the use of the special funds). The proponent agencies will then release the approved funds to the implementing units.

At the end of the obligated period, any unspent balance, unless the Board advises otherwise, should be cancelled and reverted to the relevant special trust account (COA 2009).

Monitoring of projects

Section 5 of the IRR directs the Road Board "to require DPWH and DOTC to provide and perform acceptable and systematic procedures for measuring conditions and managing the implementation of programs in conformity with planned costs and time". Further, the format of reports required—quarterly achievement, annual, and other special reports—by the Road Board is published in Chapter 6 of the Road Board's OPM. The OPM also states that quarterly achievement reports must be submitted to the RBS at the end of March, June, and September, and no later than the 20th of the month following the quarter being reported.

Figure 8 presents the MVUC project cycle, from proposal stage to implementation and monitoring stages, as summarized by the Road Board.

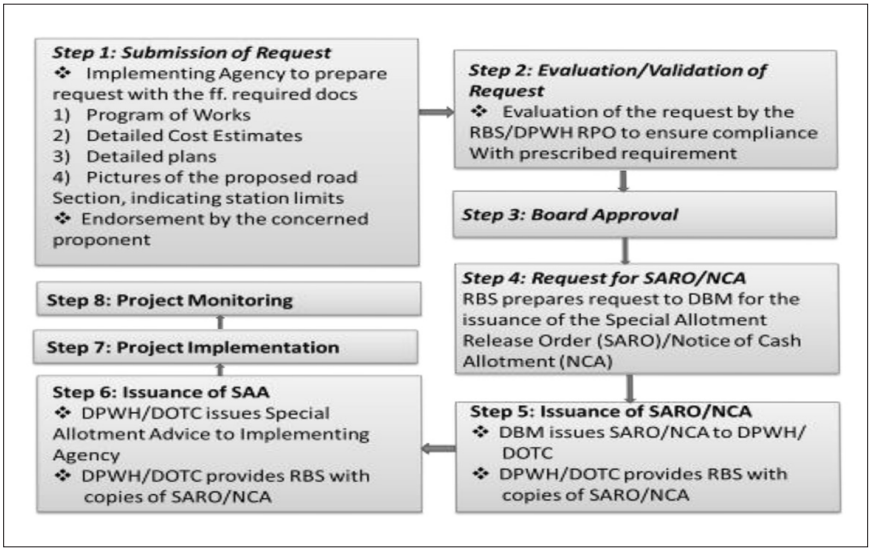
Key findings from the process evaluation

This section presents the key findings of the evaluation done on the implementation procedures described in Section 2. It also presents the identified *de facto* practices and implementation challenges based on the COA reports and interviews with the RBS, past and current members of the VPCFC, and key personnel of the DPWH-RPO and other DPWH units, the LTO, the BTr, and the DBM.

Collection and deposit of monies

In 2008, COA reported that "the total MVUC collections and deposits could not be accurately established due to errors in recording, among

Figure 8. MVUC project cycle



MVUC = Motor Vehicle User's Guide; RBS = Road Board Secretariat; DPWH-RPO = Department of Public Works and Highways-Road Program Office; SARO = Special Allotment Release Order; NCA = Notice of Cash Allotment; DBM = Department of Budget and Management; DOTC = Department of Transportation and Communications
Source: Road Board (2015)

others, which resulted in unreconciled differences between LTO and BTr records," with the aggregate unreconciled difference amounting to PHP 1.288 billion as of December 31, 2008. When the 2009–2014 data were checked, it was revealed that the cumulative discrepancy has increased to PHP 4.032 billion at the end of 2014 (Table 6).

In the course of this study, several sources of the discrepancies were identified through discussions with key personnel from pertinent agencies. These include:

1) MVUC monies deposited in General Fund. The LTO started collection registration fees in January 2001 shortly after the enactment of the law. However, the special funds were created only in 2002. Hence, the collection prior to the establishment of the MVUC funds were deposited to the General Fund (Fund 101). No adjustment has been made for the 2001 MVUC deposit.[14]

[14] Meeting with LTO and RBS on November 16, 2015

2) Manual encoding of LDC.[15] Another source of the discrepancy identified is the manual encoding of the LDC by the BTr which is prone to human error. According to the LTO, its Abstract of Collection is automatically generated. The registration fee/penalty is automatically displayed once a license plate is encoded. Moreover, the monthly summaries from the LTO are collected and checked by the RBS and checked for consistency against the validated deposit slips from LBP. Thus, the LTO and BTr agreed that the problem lies in the encoding of data on deposits.
3) Encoding of incorrect agency/transaction code. Another identified source of error in the encoding of MVUC collection is the use of incorrect transaction/agency code by the LTO collection officers.
4) Absence of LDC for LTO advance deposits.[16] A main issue that was identified was the nonissuance of the LDC for LTO advance deposits—the practice of making advance deposit of the weekly collections every Friday at 3:00 p.m., although payments are still processed until 5:00–6:00 p.m. on Fridays. This is to ensure that no large amount of money is kept at the district offices over the weekend. Inasmuch as the rest of the Friday collections will still be deposited the following Monday, the LTO does not submit a LDC, only an Abstract of Deposits with the DPWH Agency Code but without the breakdown of deposits by special fund. As a result, the BTr allocates the advance deposit to DPWH Fund 151, 152, and 153. It then places the rest of the deposits to the General Fund (Fund 101).

In 2015, the BTr has issued several JEVs[17] to adjust MVUC collections, including:

[15] Meeting with personnel of the BTr, LTO, and RBS representative, December 1, 2015

[16] Meeting with personnel of the BTr, LTO, and RBS representative, December 1, 2015

[17] A JEV is an integral part of the audit trail and carries (1) a serial number, (2) transaction date, (3) transaction amount, (4) ledger account(s) affected, (5) reference(s) to documentary evidence (e.g., invoices or receipts) supporting the entry, (6) brief description of the transaction, and (7) signature(s) or initials of one or more authorized signatories. A journal is, in effect, a collection of financial data culled from journal vouchers. (Source: http://www.businessdictionary.com/definition/journal-voucher.html#ixzz3uy8SDMXh)

Table 6. MVUC collection and deposit

Year	LTO Deposits (in PHP)*	BTr Record of Statement of Deposits (in PHP)**	Percent Difference
2001	3,426,312,376	3,171,682,069	-7.43
2002	4,672,346,472	4,419,422,234	-5.41
2003	5,455,565,035	5,455,562,970	0.00
2004	6,649,038,227	6,649,022,227	0.00
2005	7,207,319,724	7,207,309,000	0.00
2006	8,261,165,615	7,854,959,215	-4.92
2007	8,537,353,490	8,443,724,503	-1.10
2008	8,859,758,531	8,579,097,694	-3.17
2009	9,184,490,405	9,031,116,339	-1.67
2010	9,845,653,527	9,581,147,502	-2.69
2011	10,328,137,605	10,100,381,688	-2.21
2012	10,715,046,305	10,364,734,264	-3.27
2013	11,242,062,869	10,762,575,928	-4.27
2014	12,204,344,784	10,935,289,206	-10.40
Total	116,588,594,963	112,556,024,838	-3.46

Notes: * Based on certification issued by LTO-RO consolidated by LTO Central Office
** Based on updated certifications issued by the Bureau of Treasury
MVUC = Motor Vehicle User's Charge; LTO-RO = Land Transportation Office-Regional Office
Source: Road Board (2015)

1) JEV No. 15-10-07772 dated October 01, 2015: Collections for the year 2006 received on 2007–2013;
2) JEV No. 15-10-07774 dated October 01, 2015 to correct the following:
   a. MVUC share for DPWH Office of the Secretary was credited to DOTC.
   b. MVUC share for DOTC was credited to DPWH Office of the Secretary.
   c. MVUC share for DPWH Office of the Secretary was credited to other agencies.
3) JEV No. 15-06-04808 dated June 17, 2015: MVUC collections of DPWH Office of the Secretary (B5702) were recorded under DPWH-RO III (B9789), DPWH-RO V, DPWH-RO XI (B9876), etc.;

4) JEV No. 15-07-05328 dated July 03, 2015: Discrepancy in generated MVUC summary for the months of January and February 2015, for the date July 3, 2015 against April 7, 2015; and
5) JEV No. 115-05-04164 dated May 29, 2015: Erroneous transaction code such as 604 for regular collections and 609 for penalty collections.

Project identification and prioritization

Projects under DPWH supervision. According to the IRR of the MVUC Act, DPWH-RPOs shall generate a list of priority road projects using the results of HDM-4 analysis, as prescribed in the OPM. This list shall be validated by the concerned RO and DO. However, the 2009 COA Sectoral Performance Audit Report pointed out that there have been instances when DPWH ROs submitted their proposals directly to the Road Board, instead of endorsing it to the DPWH Central Office. Further, the 2011 COA Report noted that the "lack of effective procedures by the Planning and Evaluation Division of the RBS in evaluating 1,011 projects amounting to PHP 7.99 billion before implementation by DPWH ROs/ DEOs may result in the approval of nonpriority projects." Hence, to optimize value for money, the COA directed the Road Board to request the current/updated HDM-4, updated Road and Bridge Information Application, and list of funded and proposed projects from DPWH to avoid duplication/overlapping.

The study team's discussions with the DPWH-RPO[18] revealed that despite COA recommendation, the list of priority projects is still not generated through the HDM-4 nor coursed through the implementing agencies. This implies that actual practice deviates from what is indicated in the published OPM and is therefore not consistent with the law. In actuality, the RBS compiles the list of projects submitted by the DPWH DOs and ROs then sends the list to the DPWH-RPO/PS for evaluation and confirmation. The DPWH-RPO/PS checks whether or not the project has been funded from other sources and validates project data, i.e., road condition data and station limits (i.e., start and end) of project. The results of the evaluation are transmitted to the RBS; only those

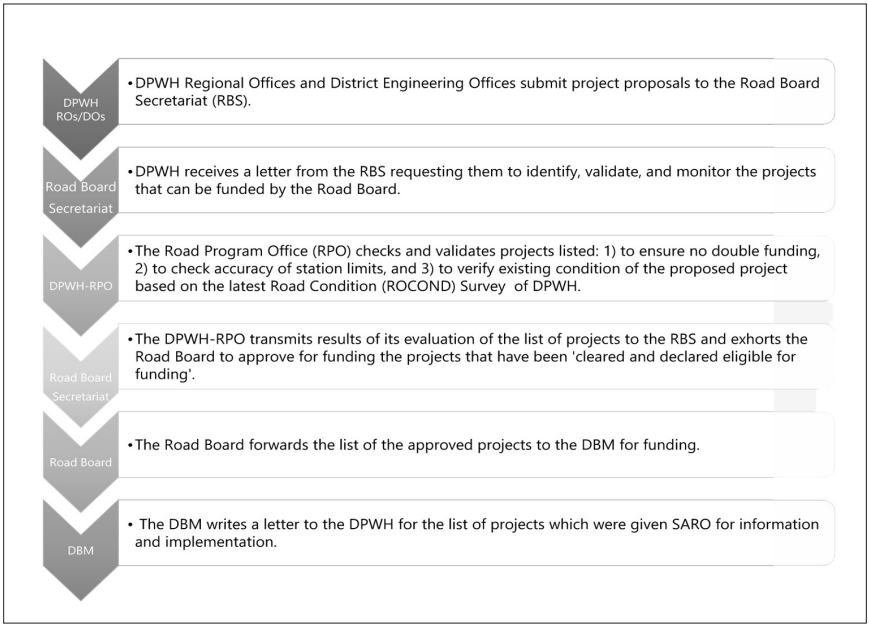
[18] Meeting with DPWH-RPO, February 27, 2015

projects that have been evaluated and declared "eligible for funding" are endorsed to DBM.

Figure 9 shows the current practice in identifying and evaluating priority preventive maintenance projects.

For the identification of priority road projects under the SLRF, two critical challenges have been identified. These are (1) absence of a comprehensive and validated database on local road conditions and (2) difficulty in confirming actual number of motor vehicles that are actually used in the city/municipality, which may not be the same as the number of registered vehicles in the city/municipality. These data are inputs to the formula used to determine the budget ceiling for each locality. Although one of the required tasks for the LGUs is to regularly conduct local road inventory and submit the same to the DILG, the results of these have not been validated by DPWH. To address this issue, the Road Board approved the conduct of the Road Inventory Survey on an

Figure 9. *De facto* procedure for project identification for SRSF and SRSaF funding



SRSF = Special Road Support Fund; SRSaF = Special Road Safety Fund; DPWH = Department of Public Works and Highways; DBM = Department of Budget and Management
Note: Based on the meeting with DPWH - Road Program Office staff
Source: Authors' interpretation

estimated 47,000 kilometers (km) of local roads during the meeting held on February 9, 2015.

Projects under DOTC supervision. The SVPCF is the most underutilized special fund. In the 2011 COA Report on the MVUC, it was found that only 1.7 percent of the total MVUC funds available during that year was released for vehicle pollution control—substantially below the 7.5 percent yearly allotment mandated by the law. Further scrutiny of data on SVPCF collection and releases from 2001 to 2014 reveals that there had been years when there were no releases from the SVPCF.

Fund underutilizaton is attributed to the absence of a definitive operating procedure system for project identification and prioritization. The implementing rules and regulations of RA 8794 stipulates that the DOTC should "formulate and implement a comprehensive program for the prevention, control, and management of air pollution from mobile sources consistent with RA 8749 (Section 1g), the Philippine Clean Air Act of 1999 and its Implementing Rules and Regulations" (p. 1). The 2012 Audit Report recommended that the DOTC "facilitate the revision of the Implementing Rules and Regulations for the SVPCF so that projects funded out of said fund would be immediately undertaken" (p. 31). The study team's interview with the DOTC confirmed that, to date, the agency does not have clear guidelines on prioritization of projects for potential SVPCF funding, although the development of such is underway.[19] Because of this apparent lack of clear guidance, several DOTC-proposed projects were disapproved for funding because these "did not fall within the approved work categories" (Antiporda 2013).

The 2013 experience in the implementation of the Special Vehicle Pollution Control Programs and Projects illustrates the lack of clear guidelines. The DBM released SARO No. BMB-A-12-0008165 amounting to PHP 45,878,744 to cover the implementation of projects for fiscal year 2012—which was obligated until December 2013 (Table 7). Public Utility Jeepney Modernization Program is included in the list of projects. However, it was not implemented after the Road Board requested for a Department of Justice (DOJ) opinion and the latter ruled that public fund (i.e., MVUC fund) should not be used for private undertakings. According to the DOJ opinion, public transportation modes, which are

[19] Interview with DOTC Planning Director Florencia Creus, December 19, 2014

privately owned, are not eligible for funding under the MVUC. As a result, no disbursements to the DOTC were made in 2013.

In a key informant interview with DOTC, it was articulated that coordination with the DENR, required in the IRR of the MVUC law, was not undertaken. In fact, the composition of the Vehicle Pollution Control Committee (VPCC) does not include DENR units. However, noncoordination with DENR was not identified as a cause for SVPCF underutilization. The main reason identified was the delay in coming up with a definitive operating procedure for project identification and prioritization.

Release of funds

Virata and Associates (2005) stated that the DBM procedure is consistent with the one-fund concept (General Fund), which means that release of the SARO and NCA to the DPWH and the DOTC is put on queue together with those of other national government agencies.

Table 7. Collections for and releases from the Special Vehicle Pollution Control Fund (in PHP)

Year	Collections (in PHP)	Releases (in PHP)
2001	235,189,161.54	0.00
2002	342,278,354.14	0.00
2003	409,027,760.98	0.00
2004	498,744,009.07	144,463,000.00
2005	540,521,366.12	276,700,000.00
2006	603,115,726.32	514,299,000.00
2007	649,321,294.67	0.00
2008	683,939,656.20	541,701,420.00
2009	731,788,846.77	811,524,500.00
2010	786,116,869.50	131,175,000.00
2011	859,666,176.70	67,226,000.00
2012	817,186,427.88	45,878,744.00
2013	776,713,138.25	0.00
2014	809,249,698.95	3,467,114,863.00
Total	8,742,858,487.09	6,000,082,527.00

Source: Road Board (2015)

However, subsequent interview with DBM personnel[20] revealed that although the agency follows the one-fund concept, the MVUC is earmarked by law for road maintenance and safety, and vehicle pollution control. The "one-fund" concept is a fiscal management policy requiring, as much as possible, that all revenues and other receipts of the government must enter the General Fund and their utilization and disbursement subject to the budgeting process. Thus, the SARO and NCA are prepared and processed upon receipt of the Road Board resolution on the approval of the projects. Under ideal conditions, the SARO can be released within 7–15 days, in compliance with civil service rules. However, there have been instances when the release took about a month or so.[21]

Project monitoring

Based on the IRR of the MVUC Act, DPWH and DOTC will put in place a monitoring system for projects implemented under the MVUC special funds. Hence, DPWH and DOTC are required to submit quarterly reports itemizing physical and financial progress for each major project and summarizing physical and financial progress by output. The report should also provide a projection of expenditures. Under this setup, Road Board monitoring is heavily dependent on the reports submitted by the DPWH, the DOTC, and the LGUs. Discussion with the RBS[22] revealed that, in the past, implementing agencies did not submit the required reports regularly. This may be due to the fact that there are no sanctions in place for nonsubmission. To remedy this inadequacy, the RBS conducts spot checks to ensure conformity of project implementation to the technical specifications of the work program. But considering that projects are so numerous and overwhelming for the available personnel of the RBS, monitoring inspections are limited and cannot cover all projects. Moreover, the current monitoring efforts of the RBS focus on compliance to technical specifications and time and cost schedules. The Road Board's OPM does not include any guideline that requires the implementing agencies to conduct the evaluation of benefits vis-à-vis project objectives, nor does it contain key indicators for measuring project benefits and impacts. Monitoring is therefore limited to the

[20] Interview with DBM Budget and Management Specialist on February 9, 2015

[21] Interview with RBS on February 9, 2015

[22] Interview with RBS on February 9, 2015

physical outputs and does not provide the evaluation of whether the project objectives have been attained and the optimal benefits to society achieved. The monitoring and evaluation systems of selected projects are discussed in detail in the case studies for each special fund.

A summary of the key findings in the process evaluation vis-à-vis the prescribed procedure based on the MVUC law and its IRR is shown in Table 8.

Case Studies

A total of five case studies were conducted—two for SRSF and three for SLRF, SRSaF, and SVPCF, respectively. The DBM requested that two case studies be conducted for the SRSF as it is the largest of the four special funds—80 percent of the MVUC collections go to this fund. Since road maintenance projects also meet road safety measures, one of these two case studies is not "pure" SRSF study because it is cofunded by the SRSaF.

The case studies are presented not in the order with which the field investigations were conducted but in order of appearance of the four special funds in the MVUC Act, the IRR, and the discussions in the previous sections. Thus, the reference dates may not be in chronological order.

SRSF case study 1: Upgrading of road shoulder along Marcos Highway

Project identification

The first project is designated by the DPWH as the International Road Assessment Program (IRAP)-Phase 1 Demonstration Corridor. The IRAP is an assessment tool that evaluates safety conditions of roads through star ratings and aims to significantly reduce road crashes worldwide.

The project, Upgrading of Road Shoulder along Marcos Highway, was identified through the submitted priority projects of the DEOs in the regions and is based on the Road Safety Audit conducted by the DPWH CO.[23] The project is located along Marcos Highway covering Baguio City, Benguet, and La Union with a total length of 47.03 km.

[23] Key informant interviews with: (1) Engr. Nestor Nicolas, assistant chief, Maintenance Division, DPWH Cordillera Administrative Region (CAR) Regional Office; (2) Engr. Julie Agcon, engineer III, IRAP coordinator, DPWH CAR Regional Office; and (3) Engr. Nora Delos Santos, maintenance chief, Baguio 1st DEO.

Table 8. Summary of prescribed versus actual MVUC processes

Prescribed Procedure	Actual Observed Procedure
Collection and deposit of monies	
1) The Land Transportation Office district offices (LTO-DOs) nationwide collect vehicle registration fees from vehicle owners covered by their jurisdictions and overloading penalties, when applicable. 2) Each LTO-DO deposits the collections to the Land Bank of the Philippines (LBP), the authorized government depository bank for the Motor Vehicle User's Charge (MVUC), and prepares the List of Deposited Collections (LDC), with breakdown by fund code. It also submits to the LTO Regional Office (LTO-RO) the Abstract of Collections, the Monthly Report of Collection, and the LDC, based on the duplicate copy of the original receipts (ORs). 3) The LBP issues a letter of confirmation and validated deposit to the LTO-DO. It likewise furnishes the Bureau of the Treasury (BTr) the LDC and systems-generated report for the four special funds. 4) The LTO-RO consolidates reports from the DOs and submits a financial report and MVUC certification to the LTO Central Office (LTO-CO). The LTO-RO likewise submits the Abstract of Collection, LDC, and deposit slips with ORs for audit and final custody to the respective regional office of the Commission on Audit (COA). 5) The LTO-CO submits monthly MVUC certifications to the Road Board through the Road Board Secretariat, the Department of Public Works and Highways/Department of Transportation and Communications (DPWH/DOTC), and the BTr. The LTO-CO is required to submit the financial reports for the preceding month by the 20th of each month. 6) The BTr issues the Journal Entry Voucher for MVUC certifications to the Road Board through the Road Board Secretariat and the DPWH/DOTC.	Although the prescribed general procedure for collection and deposit of the MVUC monies is followed, the discrepancy between LTO and BTr records has increased to PHP 4.032 billion as of 2014 year-end. This is attributed to the following factors: (1) MVUC monies deposited in General Fund in 2001, (2) error in encoding LDC which is done manually, (3) incorrect Agency/ Transaction Code by LTO collection officers, and (4) no LDC for LTO advance deposits. As a result, the BTr allocates the advance deposit to DPWH Fund 151, 152, and 153. It then places the rest of the deposits to the General Fund.

Table 8. (continued)

Prescribed Procedure	Actual Observed Procedure
Project identification and submission to Road Board	
Program of works to be submitted to the Road Board by the proponent agency	
Basis for the proposed projects based on the law:	
– Special Road Support Fund: Highway Development Management-4 (HDM-4)	The prescribed procedure is not strictly followed. Despite the COA recommendation in 2009, the list of priority projects is still not generated by HDM-4 as prescribed by the MVUC law and its IRR, nor coursed through the implementing agencies.
– Special Road Safety Fund: Traffic Accident Recording and Analysis System (TARAS)	With the decommissioning of TARAS, projects are based on recommendations from District Engineering Office/RO and results of Road Safety Audits conducted by the Bureau of Quality and Safety. Prioritization is now on a 'first-come, first serve' basis.
– Special Vehicle Pollution Control Fund: Projects to be identified by DOTC in coordination with the Department of Environment and Natural Resources (DENR) to ensure that these are consistent with the Clean Air Act of 1999	The study revealed that the DOTC does not coordinate with DENR for project identification, as prescribed by law. Moreover, underutilization of funds is mainly due to the absence of a definitive operating procedure system for the identification and prioritization of projects. Although a draft framework was developed by DOTC, it was not yet approved by the end of 2015.
– Special Local Road Fund (SLRF): Performance index, vehicle population index, and road length index	The main challenges in using the prescribed formula for rational allocation of the SLRF are the absence of a comprehensive and validated database on local road conditions and accuracy of number of motor vehicles that are actually used in the city/municipality, which may not be the same number of registered vehicles in the city. To address the first issue, the Road Board approved the conduct of the Road Inventory Survey on an estimated 47,000 kilometers of local roads on February 9, 2015.

Table 8. (continued)

Prescribed Procedure	Actual Observed Procedure
Approval and release of funds	
The Road Board evaluates the project proposals, with the assistance of the Road Program Office of DPWH.	MVUC is earmarked by law for road maintenance and safety, and vehicle pollution control. Thus, upon receipt of the Road Board resolution on the approval of the projects, the SARO and NCA are prepared and processed. The key issue identified is the absence of a transparent system to track progress of project proposals. In addition, for the SLRF, the requirement for the *Sangguniang Panglunsod* to issue a resolution granting the city mayor to enter into and sign the tripartite Memorandum of Agreement makes the process vulnerable to political interference.
Once approved, the Road Board Secretariat submits to Department of Budget and Management (DBM) for funding.	
DBM issues SARO/NCA to DPWH/DOTC	
Monitoring and evaluation of projects	
Based on the IRR of the MVUC Act, DPWH and DOTC will put in place a monitoring system for projects implemented under the MVUC special funds. Hence, DPWH and DOTC are required to submit quarterly report itemizing physical and financial progress for each major project and summarizing physical and financial progress by output.	Required reports are not submitted regularly by the proponent agencies and there are no sanctions in place for nonsubmission.

IRR = implementing rules and regulations; NCA = Notice of Cash Allotment;
SARO = Special Allotment Release Order
Note: Based on key informant interviews with DPWH and DOTC staff
Source: Authors' compilation

The scope of work for the road project (Figure 10) covered

1) upgrading of road shoulder;
2) removal of structures and obstructions;
3) construction of retaining walls;
4) concrete lining of canals;
5) carriageway reblocking;
6) installation of reinforced concrete pipe, culvert pipes, inlets, and manhole cover; and
7) construction of sidewalks.

Figure 10. IRAP Demonstration Corridor project sites

IRAP = International Road Assessment Program
Source: Authors' compilation

The DEOs in the DPWH-Cordillera Administrative Region (CAR) with administrative jurisdictions on the upgraded road sections are as follows:

1) Baguio City DEO : K0280+(-855) – K0 283+334
2) Benguet 1st DEO : K0260+(-686) – K0 279+149
3) La Union 2nd DEO : K0237+(-810) – K0 259+224

Funding approval

As an IRAP demonstration project, the road shoulder upgrading project also aims to improve road safety condition. Thus, the project utilized both the SRSF and the SRSaF. The SRSF (Fund 151) allocated PHP 98 million for measures such as paving of shoulder and carriageway improvement. The SRSaF (Fund 153) allocated PHP 97.09 million for the construction or installation of road safety devices.

SARO No. BMB-A-14-0003795, chargeable against the SRSaF for the construction/installation of road safety devices, was released on April 4, 2014. Subsequently, SARO No. A-14-0014903, for the construction/rehabilitation/improvement of Agoo-Baguio City Road, was released on October 2, 2014.

Project procurement

Considering that the project covered several DEOs, the DPWH Office of the Secretary recommended that the project be "solely undertaken by the DPWH-CAR". The DPWH further recommended that only one qualified contractor be utilized to undertake the project to facilitate monitoring of the project.[24] This is to avoid the practice of "declustering" segments of a project and contracting several companies, a practice which can sometimes be inefficient, and to expedite project completion.

Upon the approval of the SARO, the procurement process was initiated by the posting of the call for bids on the Philippine Government Electronic Procurement System (PhilGEPS) and DPWH websites as well as in leading newspapers, as required by the procurement law. The bid was awarded to Northern Builders which offered PHP 92.043 million in total. This resulted in savings for the government as the total contract amount for the component funded by the SRSF was lower than the approved budget ceiling of PHP 98 million.

Project implementation

The upgrading of the road shoulders commenced on January 23, 2015 and was undertaken for 270 calendar days. It was supposed to be completed by October 19, 2015. However, due to inclement weather causing rock falls and landslides along the corridor, project completion was moved back to end of November 2015.

[24] Interoffice memoranda from DPWH Office of the Secretary dated March 7, 2014 and October 28, 2014

Project monitoring

Output monitoring. The Office of the Secretary designated the Road Safety Program Division of the Bureau of Quality and Safety (BQS) as the overall monitoring unit for the project and to "ensure that it is built in accordance with the approved plans and specification".[25] Moreover, to facilitate the implementation of the project, one project engineer from the DPWH-CAR was designated to supervise the overall execution of the project and focal persons in each of the three DEOs were assigned as project inspectors to monitor the daily activities of the contractor.[26] Progress reports are to be submitted to the Office of the Director of the BQS through the IRAP regional coordinator every first week of the month.

Outcome monitoring. Projects, after implementation, should provide safer, better, faster, and easier access to and from adjacent municipalities in the province and its nearby provinces as well. To monitor the impact of these road safety schemes, DPWH Undersecretary Raul C. Asis issued a memorandum directing the DPWH-CAR to establish baseline data on road crash occurrence within station limits of the project over a period of time through observations and literature review. The undersecretary recommended gathering data from the Traffic Accident Report (TAR) forms used in the DPWH TARAS. All TAR forms are to be collected every month and submitted to the BQS every first week of the succeeding month (Figure 11).

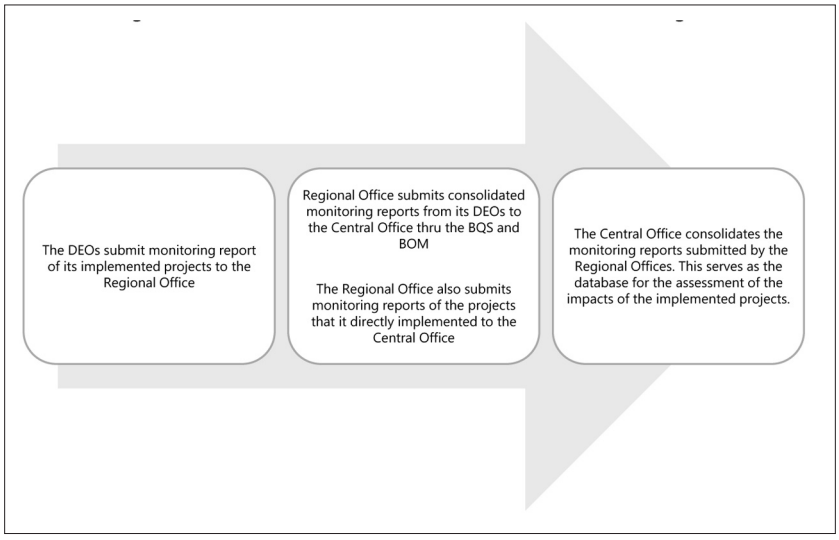
Acting on the aforementioned directive, DPWH-CAR wrote, on September 10, 2015, the chiefs of the police stations serving the areas within the demonstration corridor to collect detailed data on traffic accidents for the period starting January 2015 until October 2016, one year after the target project completion. However, with the decommissioning of TARAS, the sustainability of the monitoring scheme for road accident incidence is not assured.

Incidence of road accidents has been monitored since January 2015. However, the full impact of the project could not be fully established

[25] Interoffice memoranda from DPWH Office of the Secretary dated March 7, 2014 and October 28, 2014

[26] Interoffice memorandum from DPWH Office of the Secretary dated August 12, 2014, signed by Raul C. Asis, DPWH undersecretary for Technical Services

Figure 11. Information flow for road accident monitoring



DEO = District Engineering Office; BOM = Bureau of Maintenance;
BQS = Bureau of Quality and Safety
Source: Authors' rendition

when the fieldwork was conducted from November 4 to 6, 2015 since the project has not reached completion at the time.

SRSF case study 2: National Road Lighting Program in Roxas Boulevard (Vito Cruz Street to P. Burgos Street)

Background on the National Road Lighting Program

The National Road Lighting Program (NRLP) was established by the Road Board in 2012 and was implemented in selected regions. Table 9 shows the estimated length of roads targeted for lighting as well as the corresponding amount released for each region.

Project identification and design

The selected NRLP project for the case study is located in Roxas Boulevard and is approximately 300 meters long, from Vito Cruz Street to P. Burgos Street (Figure 12). It was completed on July 29, 2015. The total project cost is PHP 47.744 million, more than the allocation of PHP 47 million with the following scope of work:

Table 9. MVUC releases for the National Road Lighting Program (Special Road Support Fund - F151), 2012–2014

Region	2012		2013		2014	
	Estimated Length (in km)	Amount (in PHP)	Estimated Length (in km)	Amount (in PHP)	Estimated Length (in km)	Amount (in PHP)
NCR	8.74	226,000,000	47.87	767,350,697.69	24.34	377,468,442.77
CAR	-	-	-	-	-	-
R1	-	-	-	-	4.30	26,253,000.00
R2	-	-	4.92	57,822,800.60	4.29	54,743,000.00
R3	-	-	4.50	61,728,780.80	11.37	149,775,000.00
R4A	-	-	3.60	54,379,692.60	16.39	186,523,157.23
R4B	-	-	-	-	-	-
R5	-	-	-	-	-	-
R6	-	-	8.29	111,602,726.00	23.17	189,444,000.00
R7	-	-	-	-	-	-
R8	-	-	-	-	9.59	103,192,000.00
R9	-	-	-	-	-	-
R10	-	-	-	-	-	-
R11	-	-	-	-	-	-
R12	-	-	-	-	2.00	31,509,000.00
R13	-	-	-	-	-	-
ARMM	-	-	-	-	-	-
Total	8.74	226,000,000	69.18	1,052,884,697.69	95.45	1,118,907,600.00

Source: Road Board Secretariat (2015)

Figure 12. Road lighting project along Roxas Boulevard

Note: Photos taken during the team's ocular inspection on December 9, 2015

1) removal of existing concrete pavement, curb and gutter, and asphalt pavement
2) construction of pavement, curb and gutter, and sidewalk
3) installation of lamp post (single, double, combination arm)
4) installation of conduits, wires, and panel boards

Based on the interview with DPWH-National Capital Region (NCR) personnel, they were only involved in the implementation of the project but were not in any way involved with project identification. The project design and location were decided by the Road Board. Moreover, the Road Board, through its secretariat, was responsible for the procurement and installation of the luminaires or electric light units.

Project implementation
The Notice to Proceed (NTP) was awarded to New Big Four J Construction on December 05, 2014 and the project was completed on July 29, 2015.

Project impact
Since the project improved road visibility along Roxas Boulevard, it is expected to minimize road-related accidents and enhance road security. However, no baseline data were collected prior to project construction and no impact evaluation system was put in place for the project. Moreover, there were no available reports on impacts in terms of road accident reduction or road safety enhancement after project completion.

SLRF case study: Baguio City
The case study conducted for the SLRF is slightly different from those that have been conducted for the three other special funds. The case studies for the latter are project centric, whereas the case study for SLRF is focused on Baguio City and its experience as a fund recipient. This approach for SLRF was adopted to afford the researchers a better understanding of the MVUC funding dynamics at the LGU level.

Table 10 shows the SLRF allocation for Baguio City from 2008 to 2015.

As can be seen from the table, the delay in fund release can be long; for example, the 2008 SLRF allocation for Baguio City was released only in 2010. Moreover, project implementation can be delayed also; for example, the project funded under Baguio City's 2010 SLRF—the Asphalt Overlay along Lake Drive 1, Burnham Park, Baguio City from Sta. 0+066 to Sta. 0+115—was implemented beginning in 2012 only due to delay in procurement.

Based on documents obtained from the DILG-CAR and Baguio City Engineering Office (CEO), two checks were issued to Kane Construction in keeping with the then procedure of downloading SLRF to the LGUs in two tranches: 50 percent upon mobilization and 50 percent upon project completion. The fund download are as follows: (1) LBP Check No. 16484 for PHP 991.046.61 issued on November 20, 2013 and (2) LBP Check No. 18614 issued on March 10, 2014 for PHP 693,995.44; which meant that the actual total project cost is PHP 1,685,042.05.

However, on November 6, 2014, a Notice of Disallowance (ND) for PHP 520,339.03 was issued by the COA-CAR Office of the Audit Team

Table 10. SLRF Allocation for Baguio City, 2008–2015

Year	SLRF Allocation (in PHP)	Remarks on Fund Release
2008	1,774,746.58	released in 2010
2009	1,765,088.00	unreleased
2012	0	no fund allocation to be released
2013	0	no fund allocation to be released
2015	5,255,806.00	to be released pending completion of required documents

SLRF = Special Local Road Fund
Note: Based on data obtained from the Baguio City Engineering Office
Source: Authors' summary

Leader and the Supervising Auditor and addressed it to Baguio City Mayor Mauricio G. Domogan. The ND stated that there was a "volume deficiency of 50.01 metric tons as inspected by a representative of the Technical Services, COA-CAR on July 10, 2014". To address the COA ND, a letter of appeal was sent by the Baguio CEO on March 19, 2015. It clarified that "after the required area was completed, there were still three truckloads of premix asphalt on site. So as not to waste the premix asphalt, it was decided with the contractor's engineer to continue to lay asphalt from Sta. 0+115 onwards for the condition of the road was on its deterioration state. With the required area of 735 square meters, an additional area of 340.09 square meters was asphalted." The aforementioned letter further stated that "After the project was completed, a representative from the Technical and Information Technology Service of COA-CAR Office, La Trinidad, Benguet, through Engr. Roel Guadiz inspected the project and only minor surface depressions were noted."

Due to the slow project implementation and resolution of the "disallowance" issue, Baguio City did not receive any SLRF allocation from 2012 to 2014.

Project identification

The Baguio City identifies its investment projects, including infrastructure, through its Annual Investment Plan (AIP). The city's AIP undergoes deliberations and the City Planning Department records the

funding sources for the various projects in the AIP to ensure no double funding. The priority projects that are proposed for funding through the MVUC are taken from the AIP and the projects are ranked according to urgency and necessity.[27]

Even though the issue of disallowance was still being resolved, the DILG informed Baguio City LGU through Mayor Mauricio G. Domogan of its SLRF allocation of PHP 5,255,806 on March 2, 2015. In this connection, on March 13, 2015, the DPWH-CAR issued a certification stating that "the City Government of Baguio has no unliquidated cash advance in the implementation of the SLRF," only a disallowance as stated in the credit notice from COA-CAR. Thus, to mobilize funds and facilitate budget allocation, the fact that there's no unliquidated cash advance was emphasized, pending the COA's decision on the ND for a past project. Given the DPWH-CAR certification of no unliquidated cash advance, the CEO of Baguio proceeded to identify projects for 2015 SLRF funding.

For the 2015 SLRF allocation, the Baguio City LGU used its AIP in project identification and submitted a list consisting of nine projects (Table 11).

Fund approval and release

The RBS, DBM, and DILG-Office of Project Development Services will finalize fund allocation. Then, LGUs without outstanding unliquidated cash advances and are endorsed by DILG—based on the results of the Seal of Good Financial Housekeeping—are requested to submit a list of priority projects for possible financing under the SLRF.

According to the CEO, the proposed projects on the list are checked against the local road inventory.[28] Once confirmed and approved for funding, the *Sangguniang Panlungsod* (SP) will issue a resolution authorizing the city mayor to enter into a "Tripartite Memorandum of Agreement with the DPWH and DILG for the implementation of the Special Local Road Fund under Republic Act No. 8794".

Release of the 2015 SLRF allocation for Baguio City was requested from the SP, through a letter dated September 7, 2015. The city mayor

[27] Interview with City Director Evelyn Trinidad and City Planning Department Officer Ric Abad of DILG-CAR in Baguio City, November 6, 2015

[28] Interview with Engr. Stephen Capuyan, assistant chief, Maintenance Division, City Engineering Department, Baguio City, November 6, 2015

Table 11. Proposed projects of Baguio City under the 2015 SLRF allocation

Work Category Number	Description	Road Name	Location	Estimated Project Cost (in PHP)
21	Concrete reblocking	Camdas	Brgy. Camdas	PHP 700,000
21 and 26	Concrete reblocking and drainage improvement	Sta. Escolastica	Bgry. Sta. Escolastica	PHP 835,000
21	Concrete reblocking	Sarok	Sitio Sarok, Brgy. Camp 7	PHP 1,035,106
21	Concrete reblocking	Bakakeng Norte	Brgy. Bakakeng Norte/Sur	PHP 680,000
21	Concrete reblocking	Bado Dangwa	Brgy. Cresencia Village	PHP 142,000
21	Concrete reblocking	Pinget	Brgy. Pinget	PHP 600,000
21	Concrete reblocking	Dominican Hill	Brgy. Dominican-Mirador	PHP 530,000
21	Concrete reblocking	Bengao	Sitio Bengao, Brgy. Bakakeng Central	PHP 443,700
21	Concrete reblocking	Dizon	Brgy. Dizon Subdivision	PHP 290,000
Total estimated cost				PHP 5,255,806

SLRF = Special Local Road Fund
Note: Based on key informant interview with Department of the Interior and Local Government-Cordillera Administrative Region staff
Source: Authors' summary

was granted the authority to enter into and sign the MOA on October 12, 2015.[29] However, due to lack of clarity within the DPWH as to who should sign on behalf of the agency, the MOA has not been finalized yet.[30]

Project procurement

All projects under SLRF were bid out by the Baguio City LGU.

[29] *Sangguniang Panlungsod* Resolution No. 228 (October 12, 2015)

[30] Minutes of the key informant interviews for the SLRF case study in Baguio City

Figure 13. 2010 SLRF Project in Baguio City: Asphalt overlay along Lake Drive 1, Burnham Park (from Sta. 066 to Sta. 0+0115)

Note: Photos taken during the team's ocular inspection

Project implementation

As discussed earlier, the last SLRF-funded project in Baguio City was the Asphalt Overlay of Lake Drive 1 in Burnham Park. The photos in Figure 13 show the current good state of the asphalt overlain road.

Project monitoring

The DILG, as the oversight agency, is obliged to monitor the implementation of SLRF-funded projects. The city offices submit inspection report to the DILG regional office based on their observations. In addition, the Local Project Monitoring Committee, composed of DPWH, DILG, CEO, and other pertinent LGUs, conducts inspection of projects being implemented through various fund sources.

There is no impact monitoring system designed for SLRF projects and such is also the case for SLRF-funded projects in Baguio City. Nevertheless, field visit data validated that the completed project in Burnham Park is in good state and is being enjoyed by Baguio City residents and local tourists.

SRSaF case study: Installation of road safety devices along Daang Maharlika

Background on the project

The SRSaF has three output classes—Output Class 4: Safety Works on National Roads; Output Class 5: DPWH Safety Works on Local Roads; and Output Class 6: LGU Safety Works on Local Roads. Under these output classes are work categories that provide detailed description of programs and projects that are eligible for funding under the SRSaF. The Road Board OPM further defines Work Category 57: Safety Projects which cuts across the aforementioned output classes. The manual enumerates installation or construction of safety projects, which are typically identified by accident reduction studies, and the safety projects enumerated include the installation of new traffic signs and markings and provision of guard railing.

This case study looks at the project, Installation of Road Safety Devices along Daang Maharlika (K0152+000 to K0162+, with exceptions, Atimonan, Quezon) with a total approved budget ceiling of PHP 11.2 million.

Project identification

Based on the submitted supporting documents and proposal obtained from the RBS, the request for funding was prompted by a major accident that occurred on the downhill portion of Daang Maharlika in the municipality of Atimonan. Three buses and five trucks were involved in multiple collisions, resulting in 20 fatalities and numerous injuries. This urged Atimonan Mayor Jose Mendoza to call for a meeting with the DPWH, the Municipal Planning and Development Office, and the Atimonan LGU officials on April 30, 2015 to address the numerous accidents occurring at the Atimonan stretch of Daang Maharlika.

The proposal for the project was submitted to the Road Board by the DPWH-Quezon 4th DEO in March 2013. The transmittal letter for the Road Board was signed by the district engineer and the congressional district representative.

The project identification process undertaken conforms with the Road Board OPM guideline which states that "the Annual Expenditure Plan of the SRSaF shall prioritize road sections identified through TARAS, and road safety audits conducted by the DPWH/RBS without

prejudice to road sections which the Board may, upon recommendation of the DPWH, consider for funding during the course of the year."

DPWH-Quezon 4th DEO actively seeks endorsement from their respective congressional representative. According to informants, the endorsement from the congressional representative, although not required by the Road Board, may have facilitated the review and approval process of the project proposal.

Fund approval

The SARO for the project was issued on April 21, 2014, a little over a year since the request was made by DPWH-Quezon 4th DEO. Discussions with the DPWH-Quezon 4th DEO personnel revealed that the period required for project evaluation and approval (or disapproval) of a proposal can vary between two and three months, depending on the workload of the RBS.

Project procurement

The DPWH-Quezon 4th DEO advertised the Invitation to Apply for Eligibility and to Bid for the project at the PhilGEPS and DPWH websites, as required under the public procurement rules.[31]

Three contractors were found qualified and were asked to submit their bids, which were opened on August 07, 2014. Table 12 shows the resulting bids.

The contract was eventually awarded to L.M.G. Construction.

Project implementation

The NTP was issued on August 26, 2014 to commence implementation by September 01, 2014 and the project was to be undertaken in 90 calendar days. The project was completed in December 2014, based on the contract period of 90 days.

Based on key informant interview with the DPWH-Quezon 4th DEO, the proposed specifications of the road signs and other safety appurtenances conform to the standards prescribed in the 2012 DPWH Road Safety Manual (DPWH-RSM). It was further articulated during the discussion that these specifications are validated and finalized by the Road Board in cooperation with the DPWH engineer.

[31] DPWH Quezon 4th DEO Resolution No. 14-0031

Table 12. List of bidders for the project

Name of Bidder	Total Bid Amount	Variance from Agency Budget Ceiling (in %)
L.M.G. Construction	PHP 10,444,526.11	(-) 5.80
RAM Builders	PHP 10,749,161.91	(-) 3.06
St. Bernadine Construction and Enterprises	PHP 10,540,904.25	(-) 4.94

Source: Authors' compilation

According to the 2012 DPWH Highway Safety Design Standards Manual, effective road signs must meet five basic requirements. The road signs must

1) fulfill a need;
2) command attention;
3) convey a clear, simple message;
4) command respect, and
5) give adequate time for proper response.

During the ocular inspection conducted by the study team on May 1, 2015, the installed signs were evaluated using the five requirements of road safety signs.

Fulfill a need. Based on observation, the traffic signs installed indicated the potential dangers in the road section, hence, deemed to fulfill a need. However, in a few locations, traffic signs were redundant as they are placed proximate to each other. Figure 14 shows that a new traffic sign (post on the right) was installed in the same location as an existing sign (post on the left). Another issue noticed was the incorrect arrangement of the traffic signs. According to the DPWH-RSM (2012), the sharp turn curve sign should be placed at some distance before the sharp curve. However, in at least one road section, the sharp turn curve sign is located on the curve itself and is obscured by two other signs (Figure 15), thereby diminishing its usefulness.

Command attention. To command attention, traffic signs must be clear and distinct from a certain distance. However, it was observed that several traffic signs were obstructed from view by foliage of trees (Figure 16) making it an ineffective guide for drivers, particularly at night.

Figure 14. Similar signs at the same location

Note: Photos taken during the team's site visit on May 1, 2015

Convey a clear, simple message. The DPWH RSM (2012) prescribes that the use of regulatory and warning signs must be kept to a minimum to effectively convey a single message. However, in certain instances, more than one sign can be placed in a location if these have complementary messages. For instance, the DPWH RSM recommends that the "Reduce Speed" sign must be used in conjunction with an appropriate warning sign to inform the driver of the reason to reduce speed (Figure 17).

Furthermore, the DPWH RSM prescribes that when it is absolutely necessary to place several signs of different messages in one location, the distance between the signs should not be less than 0.6V apart, where V is the 85th percentile speed in kilometer per hour (kph). Thus, considering that the 85th percentile speed in rural highways is between 40 kph and 60 kph, the minimum distance between traffic signs should be 24 meters. However, during the visit to the case study area, it was noticed that in some areas, traffic signs are spaced closely, resulting in overcrowding of signs (Figure 18).

Figure 15. Imprecise arrangement of traffic signs

Note: Photos taken during the team's site visit on May 1, 2015

Figure 16. Obstructed traffic signs

Note: Photos taken during the team's ocular inspection

Command respect. The various classifications of traffic signs have corresponding standard color, shape, and materials that are internationally accepted. Traffic signs have four categories: (1) regulatory signs that inform road users of traffic laws and regulations which, if

disregarded, will constitute an offense; (2) warning signs that warn road users of condition on or adjacent to the road that may be unexpected or hazardous; (3) informative (guide) signs that inform and advise road users of directions, distances, routes, location of services for road users, and points of interest; (4) special instruction signs that instruct road users to meet certain traffic rule requirements or road condition (DPWH 2012). Conformity with these standards impute the installed traffic signs with authority to regulate, warn, and guide the drivers. However, during the site visit, it was observed that there were traffic signs that do not conform to the standards (Figure 19).

Give adequate time for proper response. The location of a traffic sign is critical to its effectiveness. The DPWH RSM (2012, p. 9) states that, "a traffic sign should be perceived and understood by the driver travelling at the 85 percentile speed of the traffic on the road, in sufficient time for him to safely take any action necessary." Table 13 shows the prescribed distance

Figure 17. Complementary traffic signs

Note: Photos taken during the team's site visit on May 1, 2015

of the sign from the road condition that the driver is being warned about, based on the approach speed of the vehicle and the desired speed at the particular road section.

However, despite this regulation, it was observed during the site inspection that a few "Reduce Speed" signs are installed on the curve itself (Figure 20), potentially reducing the time for proper driver response.

Other observations. Despite the fact that the project has already been completed, it was noticed that there were several signs that were not yet installed. Figure 21 shows poles installed under the project but have no signages and which are installed beside old posts with signages.

There were several old and dilapidated traffic signs that have not been removed (Figure 22), despite being part of the project's scope of work.

There were two project billboards installed for the project—the official DPWH project marker and another one bearing the same project title with the picture of the incumbent congressional representative of Quezon 4th District (Figure 23).

Figure 18. 'Overcrowding' of traffic signs

Note: Photos taken during the Team's site visit on May 1, 2015

Figure 19. Nonstandard traffic signs

Note: Photos taken during the team's site visit on May 1, 2015

Table 13. Advance warning signs distance

Approach Speed (in kph)	Desired Speed (in kph)			
	Stop	20	30	40
50	75	60	45	30
60	100	90	75	60
70	160	150	140	120
80	225	200	190	170

Source: DPWH (2012)

Impact monitoring

The DPWH-DEO key informants stated that there is no monitoring system in place, especially now that the TARAS has been discontinued. They simply rely on police reports of accident occurrence in the project area. So far, according to the informants, there have been no reports of major road accidents occurring in the area since the project was completed.

In the absence of any existing data, the MVUC study team interviewed residents along the project corridor and truck drivers who frequently travel along the route. The responses gathered were consistent. The local residents perceived that there had been a reduction

Figure 20. Warning signs located on the curve

Note: Photos taken during the team's site visit on May 1, 2015

in the number of accidents since the traffic signs and guard rails have been installed. The group of drivers interviewed also shared the same opinion—that the newly installed traffic signs are very useful in guiding motorists, especially at night as they are reflectorized. According to the driver respondents, the most useful traffic signs are the chevron markings and "Reduce Speed" signs; the chevron markings guide drivers along a curve and are particularly useful for those who traverse the route for the first time, and the "Reduce Speed" signs, when properly located, provide

Figure 21. Poles with missing traffic signages

Note: Photos taken during the team's site visit on May 1, 2015

Figure 22. Old and dilapidated traffic signages

Note: Photos taken during the team's site visit on May 1, 2015

a good reminder to start deceleration. The group of drivers interviewed articulated that the size and font of the traffic signs are just right and clear. They also suggested that the guardrails should also be reflectorized to improve visibility at night.

Figure 23. Project billboards

Note: Photos taken during the team's site visit on May 1, 2015

In general, despite shortcomings in the final outputs in terms of design, the onsite interview with the local community and drivers revealed that the installation of the new traffic signs and guardrails are effective deterrents against road traffic accidents.

SVPCF case study: Motor Vehicle Inspection System-NCR North

Background on the Motor Vehicle Inspection System

Based on the Road Board's OPM, work categories eligible for funding under the SVPCF include Work Category 60: Development of Vehicle Standards and Regulations, and Work Category 61: Enforcement of Vehicle Standards and Regulations. Work Category 60 includes implementation and monitoring of programs on vehicle standards and regulations. Work Category 61 includes the acquisition, construction, and maintenance of land, building, equipment, and all other expenses necessary to conduct motor vehicle type approval, inspection, and emission testing by the DOTC-LTO or its authorized centers.

The 2013 version of the Road Board's OPM states that eligible programs/activities/projects may include, but are not limited to the following:

1) Procurement of Motor Vehicle Type Approval System facilities

2) Maintenance and operation of Motor Vehicle Inspection System (MVIS) facilities
3) Maintenance and operation of Motor Vehicle Type Approval Test System facilities
4) Antismoke belching operation/random roadside emission testing of in-use motor vehicles
5) Implementation of Private Emission Testing Centers Regional Monitoring System (Operationalization of Regional Monitoring Teams)
6) Implementation of programs related to vehicle standards and regulations

Based on the above, maintaining and operating MVIS facilities can be funded through the SVPCF. The MVIS program of the DOTC involves the development of a network of motor vehicle inspection centers nationwide. It aims to improve the efficiency, effectiveness, reliability, and transparency of the inspection process by using primarily automated inspection methods that will be linked to the LTO information system. It is expected to play a crucial part in ensuring that the country's projected rapid growth in the motor vehicle population is environmentally sustainable and safe for the citizens (Lontoc 2007). Specifically, the MVIS program aims to:

1) Promote clean air by reducing pollution coming from in-use motor vehicles and
2) Enhance road safety by reducing accidents caused by vehicular defects and mechanical failures.

MVIS in NCR North

The Motor Vehicle Inspection Center (MVIC) of NCR North is part of the MVIS program of the government. The center was established in 1992 through a donation from the Government of Japan, along with three other centers, namely, NCR South (Pasay City), Region III (San Fernando, Pampanga), and Region IV-A (Lipa, Batangas). Each center is supposed to have fully computerized and automotive inspection/testing equipment for wheel alignment, brake, speedometer, headlight, hydrocarbons/carbon monoxide release, and diesel-smoke emission.

The MVIC-NCR North is intended to accommodate public transportation companies with approved franchises servicing the north

of Metro Manila (including the cities of Caloocan, Quezon, Malabon, Navotas, and Valenzuela), vehicles with government and diplomatic plates, and even private vehicles registered at the Diliman District Office.

In 2007, the SVPCF was used to fund the upgrading and rehabilitation of the system in MVIC-NCR North. The works focused on procuring various equipment for the different stages of inspection, as outlined in Table 14.

The rehabilitated and upgraded MVIC-NCR North was inaugurated on July 14, 2008 with a total cost of PHP 14.47 million.

Table 14. Equipment upgraded and rehabilitated: MVIC-NCR North, 2007

Stage	Inspection Aspect
Stage 1	Above carriage inspection
Stage 2	Brake efficiency
	Wheel alignment
	Suspension efficiency (for light vehicles)
Stage 3	Smoke emission
	Lighting efficiency
Stage 4	Undercarriage inspection
	Joint play efficiency*

* check for mechanical condition of axle components
MVIC = Motor Vehicle Inspection Center; NCR = National Capital Region
Note: Based on the key informant interview with Land Transportation Office staff
Source: Authors' summary

State of operation of the MVIS-NCR North

Based on the 2012 COA Audit Report, regular maintenance and calibration of the MVIS testing equipment at the LTO-NCR was not strictly observed, contrary to what was directed in Section 10 of LTO Administrative Order No. ACL-2009-018, thus, contributing to the deterioration of the same. Moreover, despite repeated recommendations by the COA in its past audit reports,[32] the MVIS LTO-NCR remained unconnected to the Motor Vehicle Registration System (MVRS), hence, impeding real-time authentication and validation of inspection results. The audit report also included the MVIS status report prepared by the MVIC management of the NCR North, detailing the defects of the system (Table 15). Significant

[32] recommended in 2010 and 2011 COA Audit Reports

components of the MVIS in the NCR North are defective and in dire need of rehabilitation and upgrading. The report also indicated that the equipment have not been calibrated.

To check the 2012 findings and validate the current conditions of the MVIS in NCR North, site visits were conducted on January 27, 2015 and March 12, 2015. During the site visits, we noted that the MVIC is not linked with the MVRS. The visits also confirmed that the conditions of the equipment have not improved since 2012. To illustrate,

Table 15. Status report for the MVIS in NCR North, 2012

Defective Parts of the Equipment	Defects/Remarks
Lane 1 – Light Duty Lane	
Stage 2 – Test equipment peripherals	Operation cannot be checked due to faulty personal computers (PCs)
Stage 3 – Smoke emission tester	
• Central processing unit (CPU)	Defective, no display VGA out
• Gas analyzer	No display, with power but low pump, no oxygen censor
• Smoke analyzer	Defective: communication with burn marks
• Headlight tester	Operation cannot be checked because of faulty PC
Stage 4 – Under chassis inspection	Defective uninterruptible power supply (UPS)
Lane 2 - Light Duty Lane	
Stage 1 – Input computer panel	PC corrupted
Stage 2 – Test equipment peripherals	Corrupted operating system
Stage 3 – Smoke emission tested	
• CPU	Blurred liquid crystal display (LCD) monitor
• Gas analyzer	Faulty power supply, no oxygen censor
• Sound level meter	No communication, sonometer line problem
• Headlight tester	No direction movement, transmission error, no ticking sound of head panel
Stage 4 – Under carriage inspection	
• LCD monitor/Process indicator	No display
• Joint play	Flashlight on, motor not working
• CPU	Defective UPS

MVIS = Motor Vehicle Inspection System; NCR = National Capital Region
Source: COA (2012)

Figure 24. Stage 2 test equipment peripherals: MVIC-NCR North

Note: Photo taken during study team site visit on January 27, 2015

Figure 24 shows the equipment intended to be used for inspection of brakes, suspension, and side slip. Steel rollers are supposed to be used in conducting said inspection but the rollers are not functioning. Some of the rollers were removed due to rust corrosion and wooden logs have been laid down to replace the removed rollers and avoid accidents.

Moreover, only the emission testing is functional in the Stage 3 test.[33] The equipment for testing the vehicles' lighting efficiency (i.e., headlights) and speedometer are defective.

Impact monitoring

Emission reduction. The MVIS program has two aims: to reduce emission from motor vehicles, in compliance with Article 4 of the Philippine Clean Air Act of 1999; and to reduce the incidence of road accidents caused by mechanical failure. The primary clientele of the DOTC's MVIS facilities are public utility and government vehicles. Due to the scarcity of government funds, the functions of government-operated MVIS facilities are complemented by Private Emission Testing Centers (PETCs) supervised by the LTO. Based on key informant interviews,

[33] Interview with Mr. August Cesperes, MVIC-NCR North officer-in-charge, January 27, 2015

there is currently no comprehensive monitoring system to measure the impact of the MVIS program.

Data obtained from the LTO-CO show that the MVIC-NCR North serviced 156,385 vehicles in 2013 and 166,011 vehicles in 2014. On the other hand, the MVIC-NCR South inspected 63,042 vehicles in 2013 and 83,089 in 2014. Comparing the total number of vehicles served with the estimated number of vehicles-for-hire suggests that the two MVICs in the NCR were unable to serve all vehicles-for-hire. In 2013, the total number of vehicles serviced by the two MVICs in NCR totaled 219,427, but the estimated number of vehicles-for-hire during that year is larger at 315,172 vehicles. According to the 2013 Annual Report of LTO, the number of registered vehicles in NCR totals 2,101,148 (DOTC 2012). To get the estimate of the number of public transportation units in NCR, the total volume of vehicles in NCR is multiplied by the average share of 15 percent of traffic volume of public transport modes. It can be surmised that a significant number of vehicles-for-hire not accommodated in the government-run MVICs sought the services of the PETCs.

The data also show that out of the total number of vehicles serviced by the MVIC-NCR North, only 677 (0.43%) and 1,286 (0.77%) did not pass the inspection in 2013 and 2014, respectively. In the case of the MVIC-NCR South, the failure rates were slightly higher, with 4,421 (7%) vehicles failing the test in 2013 and 6,269 (7.5%) in 2014 (Table 16). According to LTO personnel at the MVIC-NCR North and Central Office, few vehicles failed the test because most vehicle owners subject their units to oil change and engine cleaning prior to the inspection.[34]

Data on vehicle composition inspected at the MVIC-NCR North for 2013 and 2014 show that utility vehicles compose the largest proportion of the vehicles served (36% in 2013 and 50% in 2014), followed by cars (33% in 2013 and 25% in 2014). The utility vehicle category is likely composed of AUV express/garage-to-terminal vehicles and school services, while cars include taxi and those with government diplomatic plates. However, no distinction was made in the data set between the two kinds of franchises. Motorcycles with sidecar made up 6 percent of the total number of vehicles inspected in 2013 and 5 percent in 2014 (Figure 25).

[34] Interview with Mr. August Cesperes, MVIC-NCR North officer-in-charge, and Ms. Bonette Navaja, Central Office

Table 16. Number of vehicles inspected at the MVIC-NCR North and MVIC-NCR South of the LTO, 2013–2014

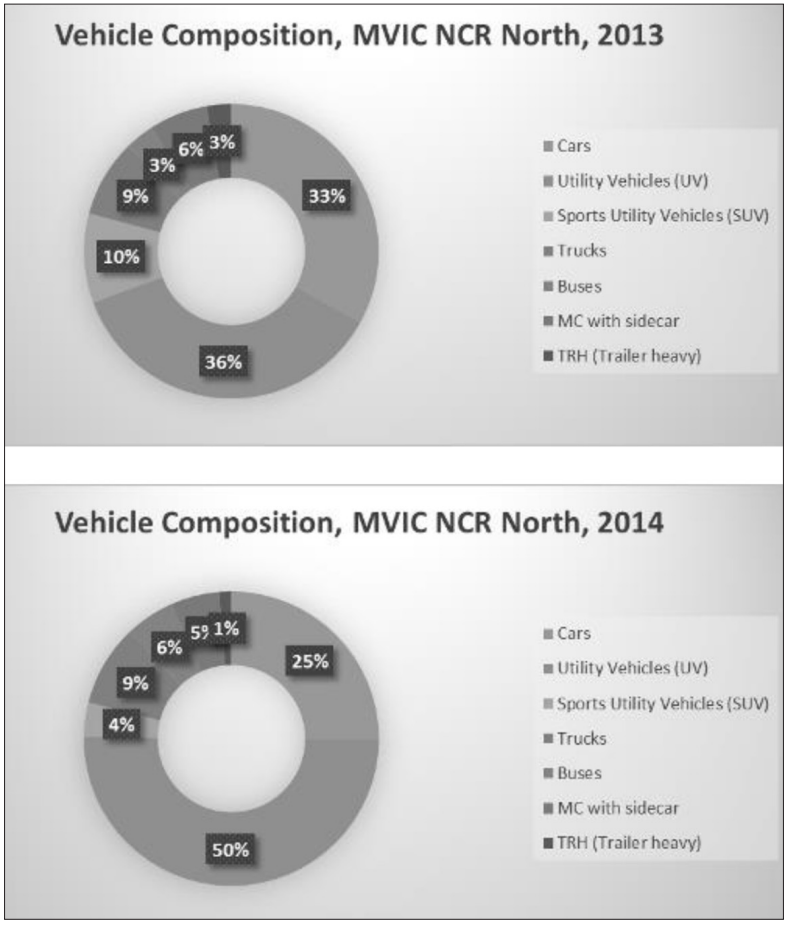
Month	MVIC-NCR North				MVIC-NCR South			
	2013		2014		2013		2014	
	Passed	Failed	Passed	Failed	Passed	Failed	Passed	Failed
January	9,353	50	16,022	125	5,039	36	5,412	475
February	15,019	75	12,194	85	5,206	461	5,802	478
March	14,540	50	16,044	145	5,336	453	6,631	515
April	16,143	40	14,249	103	5,798	477	5,753	434
May	16,448	90	16,046	106	5,740	485	7,164	612
June	14,291	52	15,566	102	5,302	454	7,039	498
July	16,496	105	14,334	130	6,038	461	7,161	611
August	12,833	70	14,314	101	5,072	407	7,091	670
September	16,819	65	16,557	126	5,787	452	7,766	531
October	12,301	80	13,834	114	4,833	396	7,845	650
November	5,248	0	8,766	84	2,389	182	5,746	533
December	6,217	0	6,799	65	2,081	157	3,410	262
Total	155,708	677	164,725	1,286	58,621	4,421	76,820	6,269

LTO = Land Transportation Office; MVIC = Motor Vehicle Inspection Center;
NCR = National Capital Region
Note: Based on data from LTO Central Office
Source: Authors' summary

When asked whether the MVIC is perceived to have a considerable impact on the reduction of emissions, the head of the MVIC-NCR North stated that it is difficult to evaluate this since the inspection is conducted only once a year, prior to the renewal of vehicle registration.

Notwithstanding the lack of data from the MVIC-NCR, we gathered secondary data on vehicle emissions. Data from the DENR-Environmental Management Bureau on the quality of air in Metro Manila (ALMEC 2014) show that total emissions increased from 2008 to 2010 (Table 17), except for carbon monoxide which displayed a slight total emissions decrease. (Note that 2008 is the year after the MVIC-NCR North and the MVIC-NCR South became operational.) In particular, carbon monoxide and total organic gases emissions from buses increased, with sharper increase from those that use diesel. A similar trend is observed for utility vehicles using diesel, as well as in tricycles.

Figure 25. Composition of vehicle types inspected at MVIC-NCR North, 2013–2014



MVIC = Motor Vehicle Inspection Center; NCR = National Capital Region
Source: Authors' rendition

Ensuring roadworthiness of public transportation vehicles. In the absence of an impact assessment framework for SVPCF, secondary data on road accidents involving vehicles-for-hire and due to mechanical defects may be used as a proxy indicator of effectiveness of the MVIC for two reasons:

1) Vehicles-for-hire, including buses, are the main target clientele of MVIC. Hence, road accidents due to mechanical defects could indicate that the aims of the establishment of the MVIC have not been fully achieved.

Table 17. Motor vehicle emissions by vehicle type in Metro Manila in 2008 and 2010 (tons/year)

Vehicle Type	Fuel Used	TOG		CO		NOX		SOX		PM10	
		2008	2010	2008	2010	2008	2010	2008	2010	2008	2010
Cars	Gas	32,450	32,640	267,715	269,281	14,603	14,688	647	626	535	538
	Diesel	312	85	912	247	960	260	64	17	276	75
UV	Gas	68,793	63,984	515,498	479,502	25,797	23,975	411	384	1,023	951
	Diesel	11,655	12,551	41,626	44,825	23,310	25,102	1,657	1,775	14,386	15,492
Buses	Gas	1,108	1,126	1,108	1,126	120	122	1	1	1	1
	Diesel	6,122	8,027	6,122	8,027	6,172	8,091	39	39	217	285
Trucks	Gas	435	381	10.396	8,220	1,017	891	7	7	12	11
	Diesel	11,539	13,040	38,671	43,700	38,983	44,053	248	2,806	1,372	1,551
MC/TC	Gas	107,561	124,677	150,354	174,280	1,157	1,341	830	962	11,508	13,339
	Diesel										
Subtotal	Gas	210,347	222,757	945,521	932,408	42,694	41,107	1,896	1,979	13,080	14,841
	Diesel	29,628	33,702	87,331	96,799	69,425	77,507	2,009	4,638	16,252	17,402
Total		239,459	256,459	1,032,851	1,029,207	112,119	118,542	3,905	6,616	29,332	32,243

TOG = total organic gases; CO = carbon monoxide; NOX = nitrogen oxide; SOX = sulfur oxide; PM10 = particulate matter; UV = utility vehicle; MC/TC=motorcycles and tricycles
Source: ALMEC (2014)

2) Nonaccommodation of vehicles-for-hire due to limited lanes and nonfunctional equipment at the MVIC encourage the use of PETCs which are notorious for granting certificates of compliance even without actually inspecting the vehicle.

The National Statistics Office (2012a) presents data on road accident by type of cause of accident (Table 18). However, the figures are aggregate for all vehicle types for the entire Philippines. Therefore, no NCR data can be used for impact evaluation. The country-level data can nevertheless suggest trends on the impact—in terms of improving vehicle roadworthiness—of the MVIS as a national program. In Table 18, the number of traffic accidents due to mechanical defects has increased by 30 percent from 2007 to 2009. This does not immediately mean that the overall roadworthiness of vehicles in the country declined; it is possible that traffic accidents due to mechanical defects have increased because the number of vehicles plying the roads increased in the first place. So, it is important to check if the number of registered vehicles increased

Table 18. Causes of traffic accidents, 2007–2009

Cause of Traffic Accidents	2007	2008	2009
Driver's error	3,021	4,323	---
Mechanical defect	2,075	1,904	2,706
Overspeeding	1,287	2,107	3,078
Bad overtaking	888	1,048	3,259
Road defect/under repair	1,149	1,414	1,899
Self-accidents	675	924	---
Hit and run	777	765	1,066
Bad turning	646	622	2,755
Overloading	515	903	1,750
Drunk driving	319	201	735
Using cellular phone while driving	222	70	291
Others	649	308	2,102

Source: National Statistics Office (2012)

substantially. Official records (NSO 2012b) show the numbers as follows: 5,530,052 vehicles in 2007; 5,891,272 vehicles in 2008; and 6,220,433 vehicles in 2009. The number of registered vehicles increased by 12 percent from 2007 to 2009, whereas the number of mechanical defects increased by 30 percent during the same period. This suggests that, in general, the roadworthiness of vehicles in the Philippines declined despite the presence of a national MVIS program, which supposedly aims not only to reduce pollution from vehicles but also to reduce accidents caused by vehicular defects and mechanical failure.

Implementation challenges

In general, the implementation of the programs and projects under the SVPCF was hampered by the lack of clear guidelines for project identification and prioritization. The crafting of the SVPCF IRR was delayed due to the delayed VPCFC constitution. Under the IRR of the MVUC Act, the VPCFC is responsible for the administration and management of the fund; providing directions to the projects or activities utilizing the fund; and the supervision, monitoring, and proper implementation of the approved Vehicle Pollution Control Program. However, the VPCFC was constituted late—only in July 2007 through DOTC DO 2007-04. Thus, DPWH administered the SVPCF from 2004 to 2007. The same DO also mandated the creation of the TWG, chaired by the Director of the Transportation Planning Service, to provide assistance to the committee. Subsequently, the TWG was converted to a Project Management Office (PMO) in 2008 (DO 2008-03). During that time, the committee and the TWG/PMO identified a multiyear plan covering 2007–2010. Tables 19 and 20 show that funds were released during this period. However, despite the use of the multiyear plan, instances of fund misuse were observed by the COA in its 2009 Audit Report.

In 2011, the MWP prepared by the VPCFC was presented to the DOTC secretary for supposed endorsement as inputs to the AIP. However, the then Aquino administration did not consider the plans and programs crafted under the Arroyo administration and the proposed MWP was disapproved, partly because the proposed work program was deemed inconsistent with the new DOTC secretary's priorities. Hence, all the projects and programs that have been prepared were pulled out. The PMO of the VPCFC was rendered redundant given that there were no

Table 19. COA findings on the LTO's appropriate disposition of SVPCF, 2009

Implementing Unit	Amount Released (in PHP)	COA Findings
Land Transportation Office		
Central Office	44,766,493.83	The funds released to the Central and Regional Offices were intended for air pollution control. The audit disclosed that among the expenses charged to SVPCF, which may not be considered relevant, are foreign and local travels, trainings, meetings, seminars and conferences, gasoline and oil, utility bills, construction/improvement of LTO compound, offices and ASBU building, communication and information technology equipment, furniture, motor vehicle, software and office supplies, installation of various facilities, repair of service motor vehicles, awards and incentives, representation expenses, security services, miscellaneous expenses, salaries, overtime, bonus and allowances of contractual/job order personnel performing functions not in connection with the MVUC program.
National Capital Region	27,030,038.59	
Regional Office No. III	32,949,529.35	
Regional Office No. IV-A	7,332,282.42	
Regional Office No. VII	12,083,445.58	
Total	124,161,789.77	

COA = Commission on Audit; LTO = Land Transportation Office; SVPCF = Special Vehicle Pollution Control Fund; ASBU = Anti-smoke belching unit; MVUC = Motor Vehicle User's Charge
Source: COA (2009)

projects and programs to implement. This situation led to the eventual dissolution of the PMO in 2012. Moreover, with no PMO overseeing the implementation of previously approved SVPCF projects, the projects were not accomplished within the target completion date of December 31, 2012, thus, funds reverted to the National Treasury (Table 21). Another reason why some funds were reverted was program nonimplementation, such as the project "Pilot Testing Program of Alternative Engines/Fuel Efficiency and Emission Reduction Technology for Public Transport".

Table 20. COA findings on the DOTC's appropriation disposition of SVPCF, 2009

Implementing Unit	Amount Released (in PHP)	COA Findings
Department of Transportation and Communications		
Main Office	58,412,371.21	The funds released to DOTC Main Office and Regional Office No. XIII were intended for air pollution control. Among the expenses charged to SVPCF are purchase of environmental multimedia, digital instruction laboratory, mobile phones, television set, DLP projector, desktop microphones, fax machine, furniture, office supplies, cell card, repair and improvement of office facilities and motor vehicles, advertisement, rental copier machine, training/ seminar/meeting (food and accommodation), travel foreign and local, honoraria, repair of motor vehicle and aircon, fuel and lubricant, salaries, allowance, and bonus of casual employees, honoraria, hazard pay, security services, utility bills, representation and miscellaneous expenses.
Regional Office No. XIII	8,437,169.18	
Total	66,849,540.39	

COA = Commission on Audit; DOTC = Department of Transportation and Communications; SVPCF = Special Vehicle Pollution Control Fund; DLP = digital light processing
Source: COA (2009)

This program was not implemented because of the DOJ ruling that said it is unlawful to use public money (i.e., MVUC fund) for private endeavors (i.e., the current public transportation modes are privately owned and managed, such as the public utility jeepneys).

In 2013, DOTC DO 2013-03 reconstituted the SVPCF Committee for the purposes of (1) administering and managing the SVPCF; (2) providing direction to the activities and projects using the SVPCF; and (3) in general, supervising, monitoring, and ensuring the proper

Table 21. Unfinished Special Vehicle Pollution Control Fund projects in 2012

Activity	Cost (in PHP)
1. Work Category 61 (Enforcement of Vehicle Standards and Regulations)	303,300.00
• *Oplan Kaayusan sa Paglalakbay*	
2. Work Category 67 (Vehicle Pollution Control Education and Training and Public Information	33,400,000.00
• Pilot Testing Program of Alternative Engines/ Fuel Efficiency and Emission Reduction Technology for Public Transport*	
3.Work Category 69 (Vehicle Pollution Control Management)	12,175,444.00
• Creation of the Environmentally Sustainable Initiative Transportation Unit	

* This program was not implemented because of the Department of Justice ruling that barred the use of Motor Vehicle User's Charge funds for privately owned transportation modes.
Note: Based on data from Department of Transportation and Communications Planning Unit
Source: Authors' summary

implementation of the approved Vehicle Pollution Control Program, under the supervision of the Road Board. The DOTC also established the Environmentally Sustainable Initiatives Transportation Unit (ESITU), under the Office of the Director for Planning, to act as the project management team for the SVPCF-funded projects. The ESITU categorizes SVPCF-funded projects into:

1) clean fuel initiatives,
2) vehicle technology and service rationalization, and
3) development studies on environment preservation.

The new process flow for SVPCF projects has been defined and proposed (Appendix A). Funding for the ESITU has also been approved by the Road Board. Moreover, the draft guidelines for project identification and prioritization under the SVPCF has been completed. However, as of December 2015, it is still awaiting approval by the DOTC secretary.

Recently, a public-private partnership (PPP) approach is being explored for the MVIS program of the government. A PPP project that will establish a state-of-the-art network of MVICs across the Philippines is now being proposed. As of this writing, the project structure is yet to be finalized. The DOTC's identification and prioritization of future

projects for SVPCF funding should consider the developments in this PPP proposal in order to ensure complementation of projects and avoid duplication of work.

Key findings from the case studies

Project identification and prioritization processes

The MVUC contributes an additional 40 percent available fund for maintenance of national roads. It is a large amount and, hence, the identification and prioritization of projects must be performed rationally to ensure maximum benefits for the community.

MVUC projects under the DPWH. Based on key informant interviews, it was discovered that the prescribed procedure—that the DPWH should identify priority road projects through the RPO, using HDM-4—indicated in the IRR of RA 8794, as well as in the Road Board's OPM is not strictly followed. In reality, the project proponents directly submit proposals to the RBS, which then asks the DPWH-RPO to check the accuracy of station limits and clear any incidence of double funding.

Moreover, with the decommissioning of the TARAS, the projects are based on recommendations from the DEO/RO and the results of Road Safety Audits conducted by the BQS. The prioritization is now on a 'first-come, first-served' basis.

Although the bottom-up approach for project identification is a legitimate methodology, adopting this without validation, through HDM-4 or a network perspective of accident blackspots, may lead to the implementation of projects that are not of the highest priority, thereby, defeating the intention of the fund.

Fund approval and release. For SLRF projects that were subjected to the case study, one key challenge is the requirement for the SP to issue a resolution authorizing the city mayor to enter into and sign the tripartite MOA. This makes the process vulnerable to political maneuvers, especially when the SP is not of the same political party as the incumbent mayor, hence delaying the process and subsequent implementation of priority projects.

MVUC projects under the DOTC. It was discovered that the main reason for the SVPCF underutilization, on the other hand, is mainly due to the absence of a definitive operating procedure system for project identification and prioritization. Hence, it is imperative for the recently developed SVPCF guidelines critical to be approved and implemented to facilitate the implementation of critical projects aimed at reducing the adverse impacts of transport on the environment and the general populace.

Expansion of the RBS' function. By virtue of the revised 2012 IRR, RBS functions have been enhanced to include procurement and project implementation. This creates potential overlaps in its functions with those of the DPWH. For instance, the Road Board, through its secretariat, has initiated a project to supply the required road signages along national roads. Procurement of the road signages will now be undertaken by the RBS. Hence, fund will no longer be downloaded to the DPWH. However, since DPWH is in charge of the installation of the signages, they will then have to do it using the agency's regular maintenance budget.

Transparency and accountability

Transparency of process and accountability of actors are critical factors for the successful implementation of the MVUC funds. However, two observations indicate that there are still areas for improvement.

One of the functions of the Road Board, through the RBS, is to raise the public's awareness on the use of the special funds and the activities of the board through the publication of an annual report, not more than four months after the end of the fiscal year. The IRR further stipulates that the annual report should be made available and disseminated in a popular form. In this era of electronic access, one of the more popular mediums is the Road Board website. However, annual reports are not available online.

Moreover, information on projects implemented are also not easily accessible to the general public as these are not readily available on the Road Board's website as of this writing.

It was also noted that the Road Board's OPM does not indicate a definite timeline for proposal submission and approval. In fact, the approval of the second case study (Installation of Road Safety Devices along Daang Maharlika) and subsequent release of the SARO took about 21 months. The absence of a systematic system for proponents to track

their proposals has resulted in the involvement of local politicians, as the latter are called on to assist in following up the status of requests. If left unchecked, this could present opportunities for political interference in the project identification and implementation processes.

Monitoring and evaluation of impacts

Except for the SRSF case study on the IRAP demonstration corridor, impact evaluation system is absent in all cases examined. It is evident that the focus of monitoring is mostly on project implementation rather than on the impacts of the projects.

Qualitative evaluation was performed due to lack of data that can be used in rigorous quantitative impact evaluation. Table 22 summarizes the evaluation.

The MVUC was instituted to ensure sustainable financing of road maintenance and help minimize air pollution from mobile sources. It is considered as the third biggest source of tax revenues of the Philippine government. But despite this, no systematic impact evaluation procedure is in place for projects undertaken through the MVUC funds. Section 5g of the IRR of the MVUC Act stipulates that the Road Board shall require DPWH and DOTC to provide acceptable and systematic procedures for measuring conditions, maintaining a database, and determining quantified benefits on a life-cycle basis. However, these have not been strictly implemented nor actively pursued.

Implementation shortcoming may also undermine impacts attainment. In the MVIC NCR-North case study, for instance, we noted that the MVIC is not linked with the MVRS. This hinders real-time verification of the inspection results and opens the system to possible manipulation to facilitating vehicle registration. Should incidents of such occur, the objectives of the MVIS program would be subverted, thereby diminishing the value-for-money of the fund allocated.

A summary of common issues across the five case study projects and its implication to the efficient utilization of the MVUC fund is shown in Table 23.

International Experience with Road Funds

The oldest road fund is established in South Africa in 1935 (WB n.d.). Among earmarked road funds worldwide, the hypothecated revenues

Table 22. Summary of qualitative impact assessment for the five cases

Case	Assessment
SRSF case study 1: Upgrading of road shoulder along Marcos Highway	Baseline data on accidents were prepared but it was still too early to check for impacts because the project was not yet fully completed at the time of fieldwork. The project was selected as case study, despite its ongoing status, upon the advice of the implementing agency and on the grounds that it is an International Road Assessment Program demonstration project and will provide useful process evaluation lessons.
SRSF case study 2: National Road Lighting Program in Roxas Boulevard (Vito Cruz Street to P. Burgos Street)	Since the project improved road visibility along Roxas Boulevard, it is expected to minimize road-related accidents and enhance road security. However, no baseline data were collected and there were no available reports on which an impact assessment can be based.
SLRF case study: Baguio City	No impact monitoring system is in place. Nevertheless, the field visit validated that the completed project in Burnham Park is in good state and is being enjoyed by Baguio City residents and local tourists.
SRSaF case study: Installation of road safety devices along Daang Maharlika	No systematic monitoring system in place but according to key informants, they rely on police reports of accidents in the project area. So far, there have been no reports of major road accidents occurring in the area since the project was completed. Interviews with residents along the project corridor and truck drivers who frequently travel along the route yielded a consistent perception that accidents were reduced and that the installed safety devices were very useful, especially for night driving.
SVPCF case study: Motor Vehicle Inspection System (MVIS)-NCR North	There is no system for monitoring impacts in terms of air quality improvement and reduction in accidents due to mechanical defects in the coverage service area of the MVIS facility in NCR-North). Baseline data are not available—which is also true for the nationwide MVIS program. Nevertheless, available secondary data were scrutinized. Department of Environment and Natural Resources data show that air quality in Metro Manila worsened despite the presence of MVIS centers. Data from the Philippine Statistics Authority on road accidents by type show that roadworthiness of vehicles worsened even though we have a compulsory national inspection system.

SRSF = Special Road Support Fund; SLRF = Special Local Road Fund; SRSaF = Special Road Safety Fund; SVPCF = Special Vehicle Pollution Control Fund; NCR = National Capital Region
Source: Authors' summary

Table 23. Common issues in case studies

Project Development Phase	Common Issues	Implication
Project identification	The prescribed bases for project identification (i.e., HDM-4, TARAS, Clean Air Act, and SLRF formula) are not utilized across the five case studies.	Although the bottom-up approach for project identification is a legitimate methodology, adopting this solely without validation may lead to the implementation of projects that are not of the highest priority.
Project proposal submission	Proposals are submitted to the Road Board directly by the implementing agencies.	Project prioritization is localized and does not guarantee the funding of projects that are in line with national priorities.
Project approval	Absence of transparent mechanism to track status of proposal is apparent. This created the need for some implementing agencies to seek assistance of local political figures.	Involvement of politicians in the process will make the system vulnerable to political interventions.
Monitoring of project implementation	Monitoring of project implementation is very lax.	Implementation shortcoming may also undermine impacts attainment.

HDM-4 = Highway Development Management-4; TARAS = Traffic Accident Recording and Analysis System; SLRF = Special Local Road Fund
Source: Authors' summary

for road funds in New Zealand, the Federal Highway Trust Fund in the United States, and the erstwhile road funds in Japan may be able to provide relevant lessons to the case of the Philippines. The ADB states that apart from these three countries, virtually all road funds failed in maintaining a stable flow of funds, ensuring funds are not diverted, keeping fund management in order, and securing the added revenues for roads (ADB 2015). Nevertheless, given the many pressing calls on governments' general funds in developing countries, the ADB recognizes that without earmarking, there is only a small chance of consistently allocating enough revenues for road maintenance in those countries.

Thus, road funds continue to be relevant to developing countries like the Philippines. The discussion gathers the good practices from three country experiences that can be scrutinized for possible adoption. Good practices that may be worth emulating include the following: (1) ensuring that the road fund administrator is strictly an administrator rather than project implementor; (2) advance preparation of long-term vision and medium-term to short-term road investment programs; and (3) variations of the reimbursement-basis payment system that are supported by strong audit systems.

New Zealand Road Fund

New Zealand has long been utilizing what it calls hypothecated revenues for roads and the institutional arrangement for the use also evolved. In 1953, it enacted the Nation Roads Act which adopted a "user pays" principle for the provision of roads and the original road fund in the country was born. The road fund was renamed the Land Transport Fund and a portion of it was transferred to the then newly created Transit New Zealand (TNZ). In 1996, a law separated road fund management from the TNZ's function and the Transfund New Zealand, a distinct road fund administration, was born. In 2004, a law abolished Transfund and another agency, the Land Transport Safety Authority, and then established in their place the Land Transport New Zealand (LTNZ). In 2008, further merging of agencies was carried out and the LNTZ and the Transit New Zealand were merged to become the New Zealand Transport Agency. Up to this day, the use of hypothecated revenues or earmarking for road funds continue through the New Zealand Transport Agency (New Zealand Ministry of Transport 2014).

The Philippines can draw lessons from the New Zealand's experience by looking at the time when Transfund was still the administrator. Transfund had a management board consisting of five members, specifically:

1) two representatives from TNZ,
2) one representative of local governments,
3) one representative of road users, and
4) one representative for other aspects of public interest.

The board's key functions are to:

1) Approve and purchase a national road investment program from the various road agencies, including capital projects;
2) Approve the competitive pricing procedures applicable to the road program;
3) Audit the performance of TNZ and local authorities against their respective road programs; and
4) Provide advice and assistance to local authorities in relation to the Transfund Act.

The day-to-day management of Transfund was carried out by 52 staff, headed by a chief executive. The staff include programming and contracts staff, audit and policy staff, and other staff in three regional offices.

Transfund's specific responsibilities were to:

1) Prepare the Annual National Roading Programme;
2) Recommend to government income and expenditure level needed to support the programme;
3) Advise, in general, on the suitability of the land transport system;
4) Fund the approved projects within the programme; and
5) Make payments to road agencies to finance the approved projects.

The Annual National Roading Programme was the basic building block for short- and long-term activities. TNZ and the local authorities submitted bids to the Transfund and the Annual National Roading Programme was built up from the submissions. Transfund reviewed the bids to check if the endorsed projects are reasonable and appropriate—based on benefit-cost calculations. Then, projects were ranked in order of priority. Maintenance projects got the highest priority, and then all other projects were ranked in order until the funds were fully allocated.

In assessing maintenance requirements, all road agencies were required to use the Road Assessment Maintenance Management (RAMM) system coupled with professional judgment. RAMM is a computerized pavement management system. The system churns out road condition, road inventory, and treatment selection based on engineering and economic criteria. Project requests were vetted on an ongoing basis by Transfund staff.

For projects implemented by the TNZ, the payment was on a reimbursement basis after the TNZ had carried out the work.

Reimbursement was supported by regular ex-post audits. For projects implemented by local authorities, the reimbursement was based on monthly claims supported by work invoice. The arrangement was more lenient for local authorities because they have less working capital than the national agency—TNZ. Local authorities' work was also subject to regular audits and in case of noncompliance with agreements, they had to repay the funding received.

The Review and Audit Division audits projects systematically at appropriate intervals. The general objective of audit for all projects was to ensure that the funds had been used in an efficient and effective manner. For maintenance projects, the primary audit objective was to ensure that each road authority meets minimum maintenance standards and maintains service levels. The audit division monitored outputs in relation to the specified performance measures and tested compliance with agreed plans. Technical and economic audits were conducted every five years while procedural audits were conducted every three years (WB 2004).

United States Federal Highway Trust Fund

The earmarking for the Federal Highway Trust Fund, which began in 1956, involves depositing certain road-related taxes into a special account that dedicates the funds to special highway or transportation accounts. Initially, it was used to fund federal-aid highway projects. But the scope for funding was eventually widened. The fund coverage started including state and community road safety programs in 1966, mass transit projects in 1982, and high-speed rail lines and bike trails in 1991. The fund has now evolved as an intermodal fund and not a strictly highway fund. When earmarked tax revenues exceed the current expenditures requirement, the excess is invested in public debt and the interest earnings are credited to the trust fund.

For the highway portion of the fund, the eligible projects include heavy maintenance, road improvement—aside from regular maintenance as states are the ones in charge of this—new construction, road safety programs, relevant studies, and other highway-related expenditures. States spend in advance for these projects and are eventually reimbursed for expenditures on approved projects.

Two congressional committees—one in the House of Representatives and one in the Senate—provide oversight. The transportation secretary has overall authority over program

implementation. At first, the eligibility of states for funding was determined based on the presence of sound planning capacity, suitable control procedures, and independent external audits at the state level. Since these are now established at the state level, the federal oversight focuses on the penalty system designed to encourage states to be responsible implementors. About 3,000 staff of the Federal Highway Administration (FHWA) are spread across states and stationed in Washington, D.C., and they closely work with the states in program preparation, funds disbursement, and auditing of completed works.

Fund allocation for the federal-aid highway program is based on formulas and it is strictly a reimbursable program, which is implemented by allocating states credit lines against which they can draw to meet obligations. The allocation formula generally uses variables such as population, road mileage, and traffic density.

The fund disbursement and expenditure reimbursement generally follow the following procedures:

1) Work is done by a contractor.
2) Contractor is paid by the state.
3) Vouchers for reimbursement (usually covering several project withdrawals) are sent to FHWA for review and approval.
4) Claims are certified by FHWA (this is a formality and certification is normally automatic, although it does provide an opportunity to audit works before payment is made).
5) Certified schedules are submitted to Treasury.
6) Federal share is transferred to state bank account by electronic funds transfer.

Annual audit is required by law. Outside auditors carry out audits on both financial matters and program compliance, as well as internal control procedures. The FHWA checks the procedures on an ad hoc basis and conducts occasional field inspections. It also subjects itself to an annual audit to ensure that it complies with its own procedures and that it can account for all fund expenditures.

Recently, however, the growth of the trust fund is slowly getting behind the growth of expenses. Revenues from the gas tax, a primary source of the earmarked revenues, are not increasing as much as before. As cars become more and more fuel efficient, aggregate gas consumption, and therefore gas tax revenues, no longer grow at a pace enough to

match the need for road funds. It is therefore recommended to transfer the federal government's role of funding highway construction to states and cities for transport economists to tax based on mileage rather than gas consumption—an approach which is gaining traction in places like Oregon, USA—where there is an ongoing pilot program for 5,000 volunteer-experimenters who pay 1.50 cents tax for every mile driven (Philips 2014).

Japan Road Improvement Special Account

Early on, Japan recognized that in order to develop the road network, large-scale and stable funding is required. The major source of funding for highway construction in Japan was previously the earmarked tax revenue system (Umeda 2014). After 54 years of utilizing the earmarked tax system for funding road network improvement with fundamental reforms implemented, earmarking was abolished in 2008 and the funding for road maintenance, henceforth, was sourced from general revenues (Japan Ministry of Finance 2008). Since the Japanese road fund has demonstrated success in 54 years, its utilization process, as well as its development process over time were examined.

Japan introduced its special fund for roads in 1954, together with five-year rolling programs for road improvements. The five-year rolling programs, which were meant to elevate the country's road system to 20th century standards and meet the demands of postwar road improvements and rapid motorization, were renewed and implemented continuously. The funding mechanism involved earmarking certain road-related taxes and depositing these into a special off-budget account—the Road Improvement Special Account. The earmarking invoked the "user pays" principle or the reasoning that since road users benefit the most from improved roads, they should bear the roads improvement cost burden.

The activities that were covered included maintenance, improvement, and construction of national, prefectural, and local roads. The special account directly financed national government spending on national roads, transferred some revenues to local governments on a cost-share basis in road program financing, and extended loans to local governments. It also financed the purchase of construction equipment, equity for toll roads, and subsidies for interest payments in toll road financing.

The legislation designated the construction minister as the person responsible for managing the account. It also specified that the draft annual budget would be submitted to the cabinet for approval and, subsequently, to the Diet (parliament) for budget endorsement.

Oversight was originally provided by a Road Council composed of an independent chairperson and 12 other members from the motor industry, business community, trade unions, academia, and local government sector. The council deliberated on the road fund management and program financing and advised the construction minister on changes needed to reorient road financing. The council was then converted into a Roads Committee and worked in the same way as before, although with greater emphasis on civil society engagement and dialogues with interested or affected stakeholders.

The road fund in Japan encountered the risk of abolition in 1982 when the finance ministry attempted to replace it with allocations from the general fund. Faced with such risk, the Road Council, which was then playing a relatively minor role, became actively engaged, conducted an inquiry into the future requirements, and came up with a forward-looking report envisioning the 21st century road improvement program. The recommendation not only set the future direction of the road program but also saved the road fund from abolition.

The day-to-day administration of the road fund was carried out by 12 staff from the General Affairs Division of the Roads Bureau-Ministry of Construction. The staff were tasked to forecast revenues, liaise with the finance ministry, and monitor the use of funds by the other divisions in the Roads Bureau (e.g., Highways Division, Expressway Corporation, etc.) and by the prefectures. Prefectures monitored the road fund utilization in cities, towns, and villages. An engineer from the ministry, who had not been involved in planning or implementation, inspects the particular work. Contractors were paid directly after the work passed inspection. Audits were conducted by the Japanese Institute of Audits, which is independent from the government and regarded highly by the public (WB 2004).

Community Involvement in the Maintenance of Infrastructure

One key strategy for sustaining efforts in maintaining road infrastructure is to involve the local communities. This will not only promote inclusivity and transparency but also provide opportunities for the individuals and the locality. The DBM suggested including community involvement as an aspect to the study.

Experiences in other countries

Mbizana Local Municipality, South Africa

The community-based, labor-intensive construction of the Amadiba road started when the local community, together with a local nonprofit organization, asked assistance in upgrading their road from the Council for Scientific and Industrial Research. This development is motivated by the aim to increase socioeconomic opportunities for more than 15,000 people using the road and 1,500 households located along the road. The construction began in January 2002. However, the project itself had been running since July 2001 (Mashiri et al. 2005).

Mbizana, where the Amadiba community is located, is considered to be as one of the poorest local authorities in South Africa with more than 80 percent of the population below the poverty line and a significant number of households unemployed (Alderman et al. 2001 as cited by Mashiri et al. 2005). Since 1994, the South African government has had National Public Works Programme whose aims included employment and asset creation, alongside capacity and skills development (McCutcheon 1999 as cited by Mashiri et al. 2005), to achieve poverty reduction and economic growth. The socioeconomic condition of the Amadiba community mentioned above extended the said program.

The labor-intensive component of the project provided sustainable employment opportunities for the community. This kind of mechanism fits the profile of the households of the Amadiba perfectly as most of them do not have income sources at all. The whole project transpired through a series of project inception workshops and meetings, supervision from the Project Steering Committee, carrying out of an Environmental Impact Assessment and the construction of the Amadiba road (Mashiri et al. 2005).

The project had a positive effect on the socioeconomic condition and trajectory of the Amadiba community, especially on the beneficiaries of the project and residents along the road. These positive effects, however, were bounded by institutionalization of the stakeholder involvement, importance of making the stakeholders understand the benefits emanating from the project, political will, and the labor-based approach for road construction.

Nanggroe Aceh Darussalam Province, Indonesia

The Kecamatan Development Programme (KDP) is an initiative of the national government of Indonesia which aimed to alleviate poverty, strengthen local government and community institutions, and improve local governance. One component of the program is the National Program for Community Empowerment or the *Program Nasional Pemberdayaan Masyarakat* (PNPM). The KDP/PNPM offers the community a list of activities according to their preference. Most of the projects (90%) under this component have been infrastructure projects. Under this program is the Local Resource-Based Road Works project. The project is also in partnership with the United Nations Development Program (UNDP) and International Labour Organization (ILO).

Project implementation is done by the facilitators from the UNDP/ILO and the community. They focus on the budget and how the construction of the roads can be done within the given budget. Roads construction is being carried out either by a contractor hired by the community or directly by the community themselves under the direction of a village foreman/forewoman. With these mechanisms, the quality of the road can be compromised. Moreover, with the challenge of having inadequate funding, the financing and management of routine maintenance was recognized as an issue that needs to be addressed. As part of the solution, it was recommended to provide supplemental budget in construction contracts, so contractors may continue with routine maintenance once the road was finished. In addition, proper training, community-oriented handbooks, and mentorships are suggested to better equip the community in managing their own simple maintenance activities in prolonging the life of the road (ILO 2008).

Malawi and Paraíba, Northeast Brazil

De Silva (2000) cites that Malawi and Northeast Brazil, in partnership with the World Bank, have looked into community contracting—letting them work and handle their own projects—to enable communities. A local stakeholder perspectives assessment on community contracting in the Malawi Social Action Fund and Northeast Brazil Rural Poverty Alleviation project was conducted in May 1999 and June 1999, respectively. The assessment was made after projects were conducted in the area. It was verified that community contracting has its own limits. Communities can handle subprojects that are simpler more efficiently. On the other hand, if the projects are more complex and technical in nature, communities should be provided assistance (de Silva 2000).

Dehong Prefecture, Yunnan Province, China

Road deterioration is evident in the Dehong prefecture in China because of limited labor inputs and a lack of skills training. Maintenance quality is suboptimal and the burden of this situation falls on the women and poor residing in the area. Through the Gender and Development Cooperation Fund, a pilot demonstration project of community-based road maintenance was implemented due to this condition. Through the said fund, the ADB agreed with the Yunnan Provincial Department of Transport and the Dehong Prefecture Communications Bureau to increase the funding for routine maintenance of rural roads. This pilot project also provided off-farm employment opportunities for the residents, especially for the women and ethnic groups.

The project had been beneficial for the residents of Dehong prefecture because roads were successfully maintained by the road maintenance groups. People were also provided technical and management skills training in routine rural road maintenance along with other income-generating activities. Wages from the maintenance work have also increased the household income of those employed through the project (ADB 2011).

Experiences in the Philippines

Community-based employment for road projects

With respect to community-based employment for road projects, the Philippines has already applied this kind of mechanism for over

20 years. In particular, the Community-Based Employment Program (CBEP) seeks to provide short-term employment to workers through the infrastructure projects, including road projects, and noninfrastructure projects undertaken by different government agencies. The program also covers providing emergency employment projects to individuals affected by disasters and economic shocks. In this context, the program served a social protection scheme and contributed to poverty alleviation.

Hiring local labor available in the areas where government infrastructure projects are to be undertaken is stipulated in RA 6685. This served as the legal basis of the CBEP. There are other laws, i.e., Executive Order Nos. 336 and 994 that set out the policy direction and institutional frameworks in implementing labor-based/equipment-supported approach in government infrastructure projects.

When former President Benigno S. Aquino III assumed office in 2010, he revived the CBEP as the major strategy for generating employment and poverty alleviation. The program is designed to have a variety of existing labor-intensive programs from different government agencies. The projects would include infrastructure and noninfrastructure programs. As a mechanism, the Public Employment Service Offices (PESOs) will be providing the list of the projects and its eligible beneficiaries. However, not all LGUs have their own PESO. In the absence of a PESO, the implementing national agency will be the one responsible in employing workers for their CBEP project. The wage of the workers is also determined by the implementing government agency (Artajo 2013).

Civil society participation in monitoring road projects

Electing the help of civil society organizations (CSO) in monitoring infrastructure projects is not new in the Philippine road transport sector. The World Bank initiated the *Bantay Lansangan* or Road Watch initiative in November 2007, as part of National Roads Improvement Management Program-Phase 2—project funded partially by World Bank through a loan, which aims to improve the maintenance and management of national road system in the country, as well as improve road user satisfaction. Bantay Lansangan is composed of multisectoral organizations from all over the country including nongovernment, private, and official development partners. It is primarily tasked to monitor if transport infrastructure projects meet the quality and design

benchmarks (ANSA-EAP 2010). Further, it is recognized by the DPWH as a partner in delivering transparent and efficient road network services in the country.

In 2011, the DPWH issued DO No. 14, series of 2011, which directs the creation of a committee that shall be the lead entity in promoting DPWH-CSO partnership in all levels of project development cycle. In relation to this, DPWH and Bantay Lansangan signed a budget partnership agreement in 2011, which states that the CSO shall be included not only in the monitoring aspects of transport infrastructure projects but also in the budgeting process.[35] DPWH will endorse budget documents to Bantay Lansangan for the former to submit its recommendations and comments. This increased transparency in terms of access to relevant information and data.

One of the interesting activities by Bantay Lansangan is coming up with the Road Sector Status Report Card (RSSRC). The RSSRC is a tool designed to measure the institutional and operational performance of DPWH using three key indicators: effectiveness, efficiency, and impact on the road user. Bantay Lansangan has also developed a Procedures Manual for Road Construction and Maintenance in 2008. The manual was designed for volunteers who will conduct the road monitoring tasks for the organization. The manual contains basic concepts of road construction and it includes standard definitions in the design, sample calculations of measurements, and corresponding pictures to help the volunteers understand technical specifications of the roads. For example, a concrete pavement will be given a good, fair, or bad rating. Each of the rating has a corresponding definition and a photo to help the volunteer assess the road in their respective areas. DPWH (2014), however, claimed that Bantay Lansangan has failed to submit the RSSRC since 2011 as sustainability of the World Bank-funded organization may be an issue.

Recommendations

Based on the results of our assessments, the following recommendations are put forward to improve the effectivity and efficiency of the MVUC fund.

[35] DPWH, Bantay Lansangan inks Budget Partnership Agreement. (Source: http://goo.gl/RQB7Vd)

Collection and deposit of MVUC monies

To improve the efficiency of MVUC collection, it is strongly recommended that serious effort be placed into automating the system of recording and encoding of collections and deposits to reduce human errors.

A recording procedure should also be enrolled for advance Friday deposits and Monday deposits or remaining Friday collection. This is already being done, albeit informally. Formal adoption of this procedure should be pursued.

Project identification and prioritization

Ideally, DPWH-RPO performs the planning and programming of projects funded by the MVUC funds for submission to the RBS. The RBS, in turn, is required to submit and present the MVUC plans and programs to the Road Board for deliberation and approval. However, in reality, DPWH ROs and DEOs directly submit project proposals to the RBS, rather than the DPWH-RPO, and the RBS, in turn, submits the project proposals to the DPWH-RPO so that the latter could validate funding status, accuracy of station limits, and existing road conditions. The DPWH-RPO, using the results of its validation, then exhorts the Road Board to approve only those projects validated as eligible. In this de facto approach, the planning and programming activities become diluted and the DPWH-RPO becomes reactive.

The study recommends advance planning, programming, and project proposal development be done within the DPWH itself and that these activities be in close coordination with the RPO and regional/district offices.

The process must also conform to the prescription of RA 8794 and its IRR wherein: (1) the district/regional offices submit proposed projects to the Central Office/RPO and 2) projects are prioritized using HDM-4.

The DPWH secretary issued a memorandum on December 14, 2015 directing all district engineers and regional directors to send all MVUC project proposals for "Asset Preservation and Additional Pavement Width" to the RPO-PS for evaluation and validation. This is deemed as a good intervention by the DPWH secretary. Following this initiative, the regional and district offices should direct their submissions to the DPWH Central Office and discourage direct submissions to the RBS.

For the special account under the DOTC, a more vigorous project development activity is recommended. SVPCF has the highest underutilization rate among the four special accounts at 28.9 percent (cumulative, 2001–2014).

No document was found in the course of the study stating that only LTO can implement SPVCF projects. However, the LTO is the only agency under DOTC that is mandated to ensure that emissions from land transportation are reduced through vehicle inspection. Inasmuch as the SVPCF was created to support the implementation of the Clean Air Act through the reduction of pollution from mobile sources, there should be greater effort to involve regional LTOs in project identification and implementation.

The coordination, and possibly project development partnerships, with DENR must also be explored. Including DENR in the VPCC can institutionalize the partnership and facilitate coordination activities.

Approval and implementation of guidelines for project identification and prioritization under the SVPCF are also recommended. A multiyear funding scheme may also ensure sustainability of programs and maintenance of facilities.

Funding approval and release

Underutilization rate for SLRF (cumulative, 2001–2014) was also high at 26.5 percent. It has been raised that the current process for SLRF release is cumbersome and open to political interference. One recommendation is to download SLRF like the internal revenue allotment. But the institutional repercussions of this need to be examined further given that control on information flow to the DILG and DPWH about good planning/ programming may be lost/weakened. At present, the process flow requires LGUs to submit their proposed work programs corresponding to the amounts allocated by the Road Board to the DPWH, through the DILG. Upon approval of the work program, the LGU and the DPWH-RO enter into a MOA in order to delineate each party's responsibilities; a MOA for every fund release. And finally, the LGU opens a trust account for the fund releases.

Downloading the funds to the LGU may indeed fast track the utilization and the allocation formula, i.e., 30 percent for LGU good performance, 20 percent for vehicle population index, 50 percent for road length index may still be used. At this point when delay in

budget spending is a big issue in government, experimenting on a method that could fast track implementation is worthwhile. Legal and the institutional repercussions, however, need to be studied more thoroughly.

As an alternative, the current SLRF process can be fast-tracked through a combination of strategies. On the RBS side, fast-tracking can be through advance forecasting of the likely shares of LGUs in SLRF and advance communication of eligibility conditions that are yet to be satisfied (e.g., no unliquidated balances). The process can be fast-tracked on the LGU side through advance programming of rolling work programs for possible SLRF funding. It will also be necessary to strengthen the information system and communication channels with LGUs regarding conditionalities and eligible work categories. A monitoring system that aims to facilitate project implementation, monitor early warning signals on possible implementation problems, and recommend ways to fast track implementation should also be in place. It is also recommended to strengthen the auditing system done by the RBS and/or explore a third-party audit setup.

These activities will need resources and a portion of the SLRF could be set aside for establishing these systems and procedures. Hiring RBS personnel or outsourcing some of the RBS' work may also be charged under the special fund.

Monitoring

Road Board monitoring is heavily dependent on the reports submitted by the DPWH, the DOTC, and the LGUs. As discussed by the RBS, implementing agencies in the past did not submit the required reports regularly and this may be due to the fact that there are no sanctions for nonsubmission.

Transparency of process

To improve the transparency of the whole process, it is suggested that:

1) information on projects undertaken for the last five years be published in the Road Board website;
2) clear timeline from submission of project proposal to Road Board decision (approval or disapproval) be formulated; and

3) online verification of the status of project proposals be made available at the Road Board website.

Establishment of impact evaluation system

An appropriate impact evaluation plan, where expected outputs and outcomes are stated, should be a requirement in the application for funds. Further, we recommend that the impact evaluation and outcomes monitoring be institutionalized. Performance indicators and baseline data for the following categories must be identified and included in project proposals:

1) travel time savings
2) vehicle operating costs savings
3) frequency and severity of accidents reduction
4) increase in comfort, convenience, and reliability of service

Institutional reforms

MVUC administration is in dire need of institutional reforms given the mismanagement issues it faced during the Arroyo (see Section 1.1) and Aquino administrations, as discussed in the process evaluation and the five case studies. MVUC performance raked poor feedbacks that the Road Board was even recommended for abolition in the Sixteenth Congress, as manifested in Senate Bill 3131, which aimed to amend the MVUC law or RA 8794 particularly for the purpose of abolishing the Road Board.

However, it is worth emphasizing that there is a need to continue earmarking national fund for the roads sector; given that the demand for resources is huge and earmarking is a stable source of resources. It is a second-best solution until the time that, like Japan, the general fund becomes great enough to accommodate competing claims and we can afford to discontinue the MVUC. Part of the key design of an earmarked road fund, as we have seen in the successful country cases, is an oversight body. The Road Board is supposed to provide such oversight function, but it seems that it is not performing it that well given the past issues and the fact that its secretariat is also into project implementation.

While attempting to abolish the Road Board, Senate Bill 3131 does not propose an oversight arrangement for the MVUC. Rather than abolish the Road Board, oversight capability and transparency must be strengthened through at least three measures.

One is through restructuring and inclusion of other road users aside from transport and motorist organizations. In featured country experiences, there is usually a strong representation of the road users in the oversight body. At present, three of the seven board members are supposed to be coming from transport and motorist organizations. This can be restructured by requiring only one representative from the motorists group and two slots be given to the business users (such as a representative from chambers of commerce or a business organization with nationwide following) and the supply chain and logistics sector.

Another measure is to make the Road Board reports easily accessible to the public. Despite the requirement that the annual reports of the Road Board be made "publicly available and widely disseminated in a popular form", this is not strictly implemented. It is therefore recommended that the Road Board increase its transparency by publishing its annual reports regularly and posting these on its website.

Lastly, the Road Board needs to reorient its secretariat as a fund manager and not an implementing agency. Or, if the intent of the Senate Bill proponent is to abolish the RBS rather than the Road Board and then distribute the secretariat tasks to DPWH for the SRSF, SLRF, and SRSaF, and to DOTC for the SVPCF, then a legislative bill will not be necessary because the creation of the secretariat was not made through the law but through the IRR. In any case, there should be strong units in charge of fund management, project monitoring, technical and financial audits of projects, and impact evaluation. These should be the requirement whether the RBS functions, resources, and plantilla allocations would be distributed between the DPWH and the DOTC or the secretariat should be retained as is.

Moreover, the following institutional reforms are put forward to improve the efficiency and transparency of the processes:

1) *Strengthening oversight through audits.* Given the presence of an oversight body in the form of the Road Board, it is strongly suggested that a body to provide additional oversight be created/identified for the MVUC. One option put forward is the Internal Audit Office under the Office of the President. This is to ensure constant improvement of process and procedures as well as adherence to the essence of RA 8794 in terms of prudent and effective utilization of the funds.

2) *Inclusion of monitoring of project implementation and evaluation of project outcomes in the roles of the RBS.* Including procurement and project implementation to the roles of the RBS has the potential to duplicate the functions that are part of the DPWH mandate. It is recommended that the RBS refocus its roles to its tasks outlined in RA 8794 and develop a monitoring and evaluation system for projects implemented under MVUC to promote efficiency and adherence to the law.
3) *Strengthening the use of community-based employment in road maintenance projects and the participation of CSOs in monitoring and increasing transparency in road projects.* Communities are critical actors in the development of the locality. Hiring of community organizations and local units are beneficial in terms of work efficiency and economic advancements. Given the experiences of community-based labor approach on road maintenance from other countries and the experience in the Philippines, the community-based approach in road maintenance has potential for mainstreaming. However, the local communities in our country have not yet reached the stage where they can be the outright implementer of the project. This must be initiated by the government or a private entity, coupled with a program that could capacitate the communities into sustaining such efforts.

The Bantay Lansangan experience proves that there is indeed space for CSO participation in the road monitoring aspect. DPWH has shown willingness to work with CSOs in order to increase transparency. As the chairperson of the Road Board, it would be best if the DPWH-CSO partnership can be replicated for the monitoring of the MVUC fund. The Road Board can release a resolution similar to DO No. 14, Series of 2011, where the RBS can take the lead in giving policy directions to promote greater CSO participation in MVUC fund management. This could mean CSO participation not only in project implementation but also in identification and prioritization.

One important activity that should be adopted for the MVUC fund is the RSSRC. The RSSRC is a great tool that does not only consider the physical components of the project but, more importantly, it also measures impact to the road users. Although impact to the road user indicators such as road safety,

flow of traffic, and road surface is mainly perception rating, it is a great step toward measuring MVUC outcomes. It is also suggested to add more information to the survey so that more advanced impact evaluation methodologies may be employed in the future.

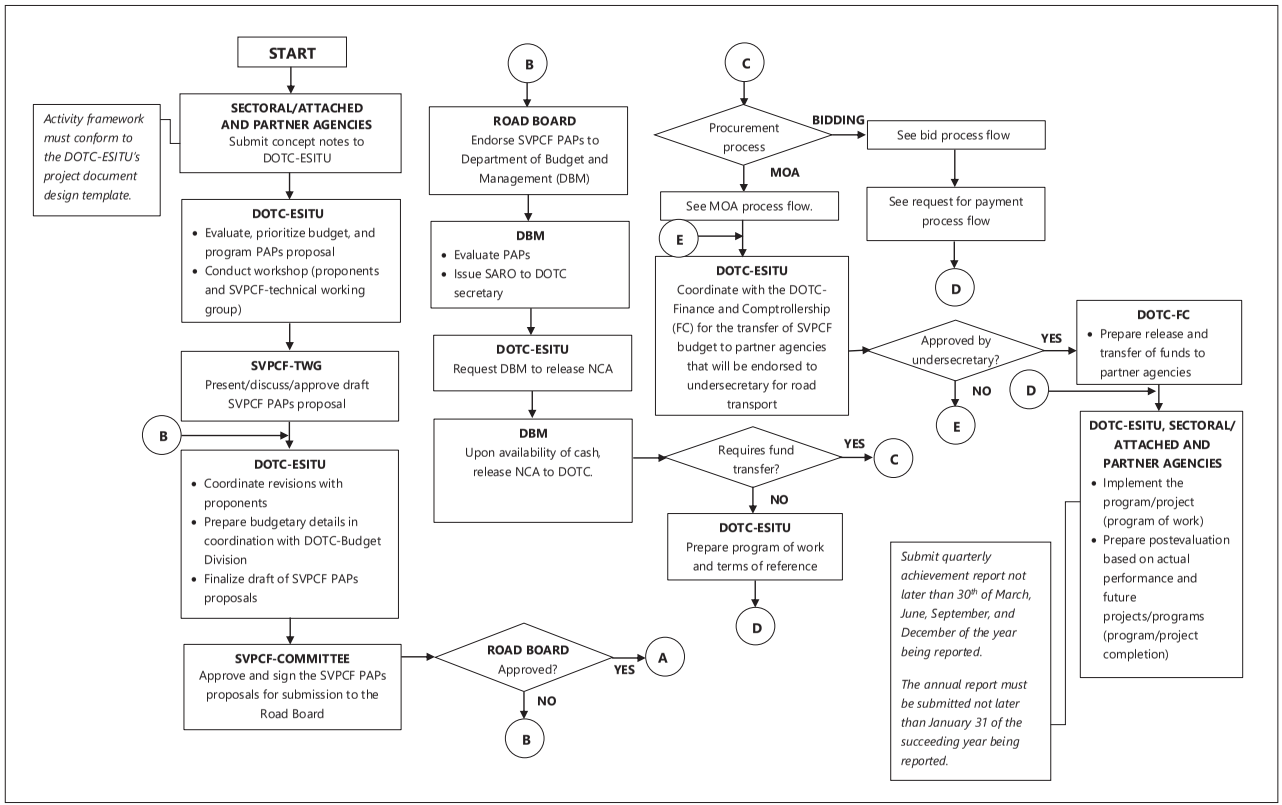
Finally, closely related to the RSSRC is the need for the DPWH to capacitate volunteer CSOs. Road construction and engineering is a technical craft. Thus, the issuance of a Procedures Manual for monitoring may not be sufficient. Continuous capacity-building activities must be undertaken, and the manual must be updated to reflect current standards. The Procedures Manual developed for Bantay Lansangan in 2008 may serve as the template, or it may be further upgraded, simplified, or even translated into vernacular terms for the volunteers.

Increase in rates

Section 3 of the law states that the president of the Philippines may adjust the MVUC rates not more than once every five years. Given that the next administration will need greater fiscal space to implement projects, it will only be a matter of time before the increase in MVUC rates is viewed as one source of additional resources and this will be achievable as stipulated in the law.

At this point, there is a need to demonstrate first that an overhaul of the institutional setup can make the MVUC more effective and efficient. Consequently, the public must be informed of the improvements and effect of implemented reforms in order to gain the public's support to any increase in the MVUC rates.

Appendix A. Proposed work flow for project identification and development under the SVPCF funding



Source: Authors' rendition

References

Affiliated Network for Social Accountability in East Asia and the Pacific (ANSA-EAP). 2010. The Bantay Lansangan (Road Watch) experience: Improving the Philippine road sector through vigilant monitoring and volunteerism. Quezon City, Philippines: ANSA-EAP.

Alderman, H., M. Babita, G. Demombynes, N. Makhatatha, and B. Ozler. 2003. How low can you go? Combining census and survey data for mapping poverty in South Africa. *Journal of African Economies.* 11(2): 169–200.

ALMEC Corp. 2014. Roadmap for transport infrastructure development for Metro Manila and its surrounding areas (Regions III and IV-A). Final Technical Report No. 1, Environment and Hazard Risk Reduction Analysis. Japan International Cooperation Agency and National Economic and Development Authority. Metro Manila, Philippines: ALMEC Corp.

Antiporda, J. 2013. Senate panel starts probe on road user's tax. *The Manila Times.* October 20. http://www.manilatimes.net/senate-panel-starts-probe-on-road-users-tax/46314/ (accessed on August 28, 2014).

Artajo, M.D. 2013. A rapid assessment of the Community-Based Employment Program. Manila, Philippines: Institute for Labor Studies.

Asian Development Bank (ADB). 1997. Philippine transport strategy study. Mandaluyong City, Philippines: ADB.

———. 2011. *Community-based routine maintenance of roads by women groups: Guide for communication bureaus.* Mandaluyong City, Philippines: ADB.

———. 2015. *Reforming the financing system for the roads sector in the People's Republic of China.* Mandaluyong City, Philippines: ADB.

Commission on Audit (COA). 2009. Motor Vehicle User's Charge Fund. Special Audits Office Report No. 2009-02, Sectoral Performance Audit. Quezon City, Philippines: COA.

———. 2010. Consolidated Annual Audit Report on the Road Board (MVUC Funds). Executive Summary. Quezon City, Philippines: COA.

———. 2012. Consolidated Annual Audit Report on the Road Board (MVUC Funds). Quezon City, Philippines: COA.

de Silva, S. 2000. Community-based contracting: Review of stakeholder experience. Washington, D.C.: The International Bank for Reconstruction and Development/World Bank, Washington D.C.

Department of Public Works and Highways (DPWH). 2012. *Highway safety design standards Part 2: Road signs and pavement markings manual.* Manila, Philippines: DPWH.

———. 2014. Annual Report. Manila, Philippines: DPWH. http://goo.gl/w0jNtT (accessed on December 26, 2015).

Department of Transportation and Communications (DOTC). 2012. Mega Manila Planning Transport Support System. Quezon City, Philippines: DOTC.

International Labour Organization (ILO). 2008. Maintenance of community-built roads: A review of community maintenance on rural roads built under the Kecamatan Development Programme in NAD Province, Indonesia. Geneva, Switzerland: ILO.

Japan Ministry of Finance (MOF). 2008. Current Japanese fiscal conditions and issues to be considered. Tokyo, Japan: MOF. https://www.mof.go.jp/english/budget/budget/fy2008/cjfc2008.pdf (accessed on 23 December 2015).

Katahira & Engineers International, Schema Konsult, Inc., and DCDD Engineering Corporation. 2011. Republic of the Philippines: Road Sector Improvement Project. Technical Assistance Consultant's Report. February 2011. Mandaluyong City, Philippines: Asian Development Bank. http://www.adb.org/sites/default/files/project-document/61897/41076-01-phi-tacr-02.pdf. Accessed December 28, 2015.

Lontoc, A.R. 2007. Projects in review. Paper presented at the 6th Road Safety Conference, August 31, 2006, Hotel Philippine Plaza, CCP Complex, Pasay City, Manila.

Mashiri, M., D. Thevadasan, and R. Zukulu. 2005. Community-based labour-intensive road construction: Findings of an impact study of the Amadiba Road. Proceedings of the Southern African Transport Conference. Pretoria, South Africa: Built Environment, Rural Infrastructure, Council for Scientific and Industrial Research. https://repository.up.ac.za/bitstream/handle/2263/7022/099.pdf?sequence=1 (accessed on April 15, 2016).

McCutcheon, R.T. 1999. Southern African muscle-power: A great force in nature. Dpeartment of Civil Engineering Working Paper No. 99/004. Johannesburg, South Africa: University of Withwatersrand.

National Statistics Office (NSO). 2012a. Philippines in figures 1202. Quezon City, Philippines: NSO.

———. 2012b. *Philippine Yearbook 2012*. Quezon City, Philippines: NSO.

New Zealand Ministry of Transport. 2014. Future funding: Uses of hypothecated revenue. Wellington, New Zealand: Ministry of Transport. http://www.transport.govt.nz/assets/Uploads/Our-Work/Documents/ff-uses-of-hypothecated-revenue.pdf (accessed on April 18, 2016).

Philips, M. 2014. The gas tax is running on empty. *Bloomberg.com*. July 14. http://www.bloomberg.com/news/articles/2014-07-17/gas-tax-cant-fill-up-federal-highway-trust-fund (accessed on December 27, 2015).

Road Board. 2013. Operating Procedures Manual. Quezon City, Philippines: Road Board.

———. 2015. Organizational chart. Quezon City, Philippines: Road Board. http://www.roadboard.gov.ph/LS/theroadboard~chart/Organizational_Chart.html (accessed on March 20, 2015).

Santiago, M. 2009. Apocalyptic corruption: The P60.5 billion Road Fund. Sponsorship speech at the Senate of the Philippines, November 9. http://www.senate.gov.ph/press_release/2009/1109_santiago2.asp (accessed on November 3, 2015).

Sisante, J. 2008. Solons eye abolition of Road Board. *GMA News Online*. September 26. http://www.gmanetwork.com/news/story/123179/news/nation/solons-eye-abolition-of-road-board (accessed on November 15, 2015).

World Bank (WB). 1999. Better roads Philippines. Draft final report. Washington, D.C.: WB.

———. 2004. Summaries of Road Fund administrations in Japan, New Zealand, and USA. Washington, D.C.: WB. http://siteresources.worldbank.org/INTROADSHIGHWAYS/Resources/338993-1115316562809/24-road_fund_summaries.pdf (accessed on December 23, 2015).

———. 2009. Philippines: Transport for growth, an institutional assessment of transport infrastructure. Washington, D.C.: WB. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/08/05/090224b0828ca0cf/1_0/Rendered/PDF/Philippines0000sport0infrastructure.pdf (accessed on December 28, 2015).

———. n.d. Road financing and road funds. Washington, D.C.: WB. http://www.worldbank.org/transport/roads/rd_fnds.htm (accessed on December 23, 2015).

Virata and Associates. 2005. Road Board assistance on road user charges law implementation. Technical report prepared for the Road Board Secretariat, Road Board, and Republic of the Philippines under the USAID-funded EMERGE Project, Pasig City, Philippines.

Umeda, S. 2014. National funding of road infrastructure: Japan. Washington, D.C.: The Library of Congress. https://www.loc.gov/law/help/infrastructure-funding/japan.php (accessed on December 23, 2015).

The Authors

Ma. Sheilah G. Napalang is the director of the University of the Philippines (UP) National Center for Transportation Studies. She holds a PhD in Engineering from the Tokyo Institute of Technology and specializes in transportation equity from the social and regulatory perspectives and infrastructure economics.

Pia May G. Agatep is an international freelance consultant specializing in transport-related projects. She holds a Master's degree in Urban and Regional Planning from the UP School of Urban and Regional Planning.

Adoracion M. Navarro is the undersecretary for regional development of the National Economic and Development Authority and a former senior research fellow at the Philippine Institute for Development Studies (PIDS). She has a PhD in Economics from the UP School of Economics and specializes in infrastructure-related research.

Keith C. Detros is an economic analyst at the Embassy of the United States and a former PIDS research analyst. He obtained his Bachelor's degree in Political Science at UP Manila. He is currently involved in entrepreneurship, digital economy, cybersecurity, and transportation projects.

Road funds like the Motor Vehicle User's Charge (MVUC) fund in the Philippines are earmarked funds that ensure a stable flow of resources, particularly for public road development projects. However, shortcomings from project identification to fund disbursement hamper effective implementation of the MVUC funding scheme. In assessing the different MVUC processes, this paper finds that transparency and efficiency in collection should be improved through automation and accurate recording. Project identification and investment programming must also adhere to the recommended procedures in the operating manual. As the study finds indications of fund underutilization, it suggests accelerating fund utilization through advance project development and investment programming. Looking at five MVUC-funded projects, it observes that only one of the five projects had an impact monitoring system. Nevertheless, findings from field visits and interviews with beneficiaries reveal that there are positive benefits from the MVUC mechanism. A closer look at successful cases in other countries also reveals good practices that are worth noting.

Philippine Institute for Development Studies
Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas

18th Floor, Three Cyberpod Centris - North Tower
EDSA corner Quezon Avenue, Quezon City, Philippines
Tel.: (+632) 372-1291; (+632) 372-1292
Email: publications@mail.pids.gov.ph
Website: http://www.pids.gov.ph