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Democratic Republic of Timor-Leste: Baucau to Viqueque Highway Project

Road Maintenance Fund Policy Paper

Prepared by

SMEC International Pty Ltd

Sydney, Australia

For Ministry of Planning and Finance, Development Partnership Management Unit; and Directorate of Roads, Bridges and Flood Control

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Preface

This document is prepared to guide the development of the road network in Timor Leste and achieve the key road sector objectives included in the Strategic Development Plan 2011-2030. It is the outcome of a technical assistance (TA) funded by the ADB to support the Government of Timor Leste in this effort. The TA was designed to develop the following:

- **Output 1a: Integrated national road network strategy and plan.** Support will be provided to DRBFC to draft a comprehensive national road network strategy and plan that will encapsulate the following: (i) 20-year capital investments and operation and maintenance (O&M) strategy, (ii) organizational reform plan to implement the strategy; (iii) defined levels of service (LOS) expected from the national road network that will include communication mechanism to the public for feedback and performance measurement; (iv) asset management plan linked to an appropriate asset management system to support network prioritization and intervention thresholds; (v) an operational manual and training for planning, budgeting, procurement, supervision, and monitoring and evaluation, and (vi) operational plan targeting development of national road contracting and consulting industry, human resources and capacity development, and financing instruments to support private sector participation. Suitable policy instruments would be considered to integrate the draft strategy and plan in the wider context of Transport Sector Master Plan currently under review and endorsement by the Government.

- **Output 1b: Concept design for a sustainable road maintenance program.** This output will build on road maintenance initiatives by donors including ADB, JICA, European Union and the Roads for Development program financed by the Government of Australia to deliver (i) a draft policy paper to introduce Road Maintenance Fund; and (ii) a design for donor-supported 10-year road maintenance and operation program. An initial concept proposal for the program has been shared with the government and development partners, and broad support has been received (see attachment 1). An extensive stakeholders' consultations and high-level policy dialogue will need to take place to draft the policy paper and the program suitable for donors' technical and financial support.

This document provides an executive summary of the output of this work. It presents the key recommendations for the sustainable development and maintenance of the road network and it will hopefully serve as a reference and guideline in formulating the Government of Timor Leste's future road sector strategies and plans. The list of reports summarized here in order are:

OUTPUT	DELIVERABLE
1	Road Subsector Assessment
2	Road Investment and Maintenance Strategy
3	Maintenance Program 2020-2030
4	Road Maintenance Fund Policy Paper
5	Organizational Reform Plan
6	DRBFC Training Program
7	DRBFC Manuals for Operations
8	Road Asset Management Plan
9	Levels of Service
10	Operational Plan for National Industry

The TA's conclusions and recommendations are based on the professional judgement and views of the TA consultants derived through a series of seminars, workshops, and consultations with various government agencies and offices, under the overall guidance received from the Ministry of Public Works, the Ministry of Finance and the Asian Development Bank.

The team is grateful for the support and information provided to it by the various units within the DRBFC and other government ministries.

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1 Introduction

1. This is the seventh report in the 2019 road sector assessment series of reports. The first report in the series, the *Road Subsector Assessment*, provided an overview of the structure of road finance in Timor Leste. It also considered a number of road user charges as sources of funding that could potentially be used to create a stable Road Maintenance Fund (RMF) structure in Timor Leste to be directed to maintaining the road asset base. This report lays out the issues to be addressed, the steps to be taken, the implication of the various sources of finance on the establishment of an RMF and the necessary legal instruments to support that establishment.

2. Timor Leste has embarked on a massive road upgrading exercise over the past 5 years and going forward for another 10 years. Most of the roads in Timor Leste are being rebuilt with funding from the Infrastructure Fund or from borrowing from international donors. The issue that has now become most important is not how fast the roads can be rehabilitated or rebuilt, but rather how the resulting network can be maintained. The 20-year *Road Investment and Maintenance Strategy* examined the cost of road maintenance as the system is completed, comparing this against potential sources of funding. Establishing an RMF is central to that analysis. But even with the RMF in place and working effectively, there will still be a maintenance funding gap and the development of some parts of the network will need to be delayed until adequate maintenance money is available.

3. A wide range of road funds have been established over the years. For a review of the current literature, the reader is directed to the experiences presented in the appendix at the end of this report. **Many of the road funds have not been successful**. They have been captured by the country's political class and they have just become one more source of money to be used for corruption and patronage. However, over the years, a consensus has developed about how best to structure the road funds to, if not guarantee, at least provide a decent chance that the funding will be administered with independence and the allocation of the monies collected by the road funds are directed to the purpose to which they are mandated. The characteristics of good road funds are described in what follows.

4. Organization establishment is important. The most effective organization model is one that uses the flexibility of the company's law to ensure that reporting is done on a timely basis, that the articles that establish the corporation are clear and open to review and that a clear fiduciary responsibility is in place to ensure a legal basis exists to monitor and control fund allocation and use.

5. The following chapter provides an overview of the characteristics of road funds based on international experiences. Chapter 3 looks at the required road maintenance funding and how this may be mobilized from different sources, including the introduction of road user charges. Chapter 4 describes the legal basis that exists in Timor Lest for the creation of the RMF and the allocation of funding to it. Chapter 5 provides some of the elements required in the documentation for the establishment of the RMF. The final chapter provides a summary of the findings and conclusions regarding the creation of the RMF in Timor Leste.

2 Characteristics of Road Funds

6. Road funds exist in many different types and forms. This chapter provides a brief overview of the characteristics of road funds in different countries, and identifies what choices need to be made for the introduction of a Road Maintenance Fund (RMF) in Timor Leste. When designing a road fund, the resulting design must satisfy three key principles.

- Establishment of a **consistent level of funding** for road maintenance to allow for multi-year planning and contracting and to ensure that essential asset management services can be provided by the responsible agencies at different levels of government
- Establishment of an **equitable means of charging for road services and allocating funding** among the various levels or organizations responsible for development and maintenance of road assets. This may involve different levels of government, different organizations within the same level of government, or different user groups
- Creation of an **efficient and effective implementation process** with sufficient accountability checks to ensure that the funding reaches the targeted areas and that works contracted are, in fact, completed.

2.1 Sources of Funding for Road Funds

7. Road funds are based on the concept of earmarking, whereby the money from various sources is dedicated to the road fund. This provides a means of channeling funding for the road sector. Traditionally funding for road maintenance comes from the appropriation of government funding, normally based on annual budget allocations approved by Parliament. Although some road funds receive annual allocations from the general budget, most road funds are financed from dedicated road user charges. These road user charges may include a fuel tax or levy, vehicle registration fees, tolls, heavy vehicle surcharges, etc.

8. The common use of dedicated road user charges is based on the fact that these provide **predictable funding** for the road fund. Annual budget allocations tend to vary as a result of competition with other sectors and with other needs within the road sector. Funding typically fluctuates based on the demands on the government of the moment. Major initiatives, such as the Tasi Mane development in Timor Leste, soak up a large amount of government funding and as a result, other areas of the economy make do with less budget. Such changes can have significant impact on the amount of the annual budget allocations for road maintenance, making it difficult to ensure proper maintenance and to introduce multiannual road maintenance contracts.

9. Another important aspect of road funds in this respect is that unused funds remaining at the end of the financial year can be carried over to the next year. This greatly simplifies multi-annual contracting and avoids that maintenance funds are lost due to delays in procurement, for instance.

10. The other benefit of road user charges is that it introduces an **equitable means of charging** for road services. Rather than taking money away from other sectors, it introduces new charges to fund the maintenance of the road. These charges are applied only to the road users, introducing a user-pays principle.

11. In Timor Leste the introduction of road user charges is supported by the Basic Law on the Road Transport System (2003). This introduces the concept of subjecting road users to a specific tax as a source of funding for the road sector. Further information on the possible types of road user charges is provided in the next chapter, while the legal basis for such charges is dealt with in more detail in chapter 4.

CHAPTER I - General provisions
Section 5 - Tax harmonisation

With the aim of doing away with disparities in treatment that may substantially falsify the competitive conditions of the various types of transport enterprises, including private transport, the specific tax regime to which they are subject shall be reformulated, in accordance with the following guidelines:

a) A uniform and permanent accounting system for expenditure pertaining to road transport infrastructure, as a basis of taxation predicated on infrastructure expenditure imputation, shall be adopted;

b) Owners of road transport vehicles, public or private, shall be subject to a tax on the use of their respective infrastructure, the basis of calculation on which wear and tear of that infrastructure, which is imputable to them, as well as external costs associated with such transport and supported by the community, shall be taken into account;

c) Revenues generated by the tax referred to in the preceding paragraph, as well as any revenues generated from the use of road transport infrastructure shall, in whole or in part, be earmarked for the expansion, modernisation and maintenance of its networks.

Source: Road Transport System Law, 2003

2.2 Scope of Road Funds

12. Although generally the focus of road funds lies on road maintenance funding, some road funds also include the funding of road safety improvements. In some cases, even rehabilitation of the road network is included. Where this is the case, the funding of road maintenance is generally prioritized allowing only excess funding to be used for rehabilitation. Alternatively, the usage of funds for rehabilitation is limited to a portion of the available funding. The scope of the road fund may also evolve over time as available funding increases. An example is Nepal, where the Roads Board Nepal initially only financed road maintenance. This was later expanded to allow usage of a portion of the funding for road rehabilitation.

13. In Timor Leste the Basic Law on the Road Transport System (2003) defines that the revenues generated by the road user charges shall be earmarked for the *expansion, modernization and maintenance* of the road network (see above). However, given the large road maintenance needs and the serious lack of funding, it is unlikely that the funding levels will exceed the maintenance needs any time soon. Expanding the scope of the RMF beyond that of road maintenance (and possibly road safety improvements) is therefore not considered appropriate at this stage.

14. The law does not specify the kind of tax on users that will be used to sustain the road network. In some countries, the tax is based on vehicle registration fees (Vietnam). In others on a road maintenance fee paid annually by all vehicle owners (China pre 2008). In others the tax is levied on fuel use (China,post 2008). If the fund is well managed and provides strong transparency and accountability for the use of the funding and has a strong impact on the condition of the road network, other support for road maintenance as for instance from development partners or as direct government budget commitment may be channeled through the fund because of its high standard of administration and management.

2.3 Allocation of Funding from Road Funds

15. The allocation of funds from the road funds is generally defined in the policy documents of the fund. The scope of the road fund defines which kind of activities can be funded from the road fund. The allocation to different parts of the country or to different levels of government responsible for different parts of the road network will also be defined in the principles of the road fund. Sharing of funds between different parts of the country may be based on different principles, such as the size of the population or the length of the road network in each of the areas, or the amount of road fund revenue collected in each area.

16. Where the management of the road network is the responsibility of multiple entities and/or levels of government, funding is generally shared between the different entities. This is generally defined as a specific portion of the total funding for each road network. In Laos, for instance, all roads are managed by the Ministry of Public Works and Transport - 80% of the funding from the Road Maintenance Fund is allocated to national roads, with the remaining 20% for local roads. In Nepal, 70% of the funding from the Roads Board Nepal is

allocated to the national highway and feeder road network managed by the Department of Roads, with the remaining 30% allocated to urban municipalities and districts for the maintenance of urban and rural roads[1].

17. In Timor Leste all roads are formally managed by DRBFC. However, rural roads are de fact o managed by the municipalities and their Road Departments, which are also becoming more involved in the management of urban roads. A proper sharing arrangement will need to be defined for the usage of funding from the RMF.

2.4 Organizational Modality of Road Funds

18. Early funds were largely setup to be administered directly through the ministries responsible with input from the Ministry of Finance or its equivalent. These were basic bank accounts managed by the Minister of Finance together with the ministry responsible for the road network. However, over time, these funds were considered to be unsuccessful in that they remained prone to political pressure rather than following the guidance on priorities provided by economic or technocratic advice. As a result, many of the later road funds have been established at arms-length from the government as state-owned companies with Boards of Directors which include senior government officials, but are preferably led by an independent Chairman and have a strong or majority board representation from user groups. These funds essentially act as financial institutions similar to corporations with fiduciary responsibility, annual reports, independent audits and a clear commitment to the mandate that they are given.

19. The management cost of the road fund can either be taken from the road fund itself or the management cost can be supported through a normal annual budget appropriation from government. This purpose is quite standard and accords with the objectives of other international road funds. Given that the plan is to provide incremental funding, the existing budget can best be supplemented by the road fund and not replace the current government budget.

20. For Timor Leste a decision needs to be taken whether to immediately introduce the RMF as a state-owned company at arms-length from government, or to initially introduce it as a simple bank account managed by the Minister of Finance together with the Minister of Public Works. Further information on this is provided in chapter 5.

[1] This has changed with the introduction of provinces and palikas under the new constitution.

3 Road Maintenance Funding

21. This chapter looks briefly at the required maintenance funding, before focusing on the possible sources of funding to address these needs. It is based largely on the findings of the *Road Subsector Assessment* and the *Road Investment and Maintenance Strategy* prepared under this TA.

3.1 Maintenance Costs

22. Roads are not static. They do not sit quietly and just continue to function as originally built. In a country like Timor Leste, the land moves constantly. Heavy rains erode hillsides and slips are common. Pavements deteriorate as a result of traffic and climate. That will not stop. The day after road construction stops, there is a need to begin maintenance. Without regular maintenance and repair, the road will inevitably decay and conditions will begin to deteriorate, increasing the volume and costs of future repair work. That is normal. If we are not to lose the benefits that have been gained with the recent and planned investments in the road network, then maintenance of the completed roads needs to be a priority. However, this comes with a price tag.

23. The unit costs of routine and periodic maintenance are indicated in Table 1 below. These unit costs are based on a review of recent DRBFC contract data and estimates in the DRBFC five-year plan. The last column of the table indicates the average costs per kilometre of routine and periodic maintenance as used in the *Road Investment and Maintenance Strategy* (RIMS).

Table 1 Costs per kilometre of road maintenance

MAINTENANCE TYPE	ROADS	AVERAGE	MAXIMUM	MINIMUM	RIMS
Routine (national/municipal)	13	$3,885	$5,000	$3,000	$4,000
Routine (rural)	117	$5,695	$18,474	$2,366	$4,000
Periodic (urban)	1	$70,575	$70,575	$70,575	$70,000
Periodic (rural)	49	$29,095	$144,933	$3,676	$25,000

Source: DRBFC contract data and FYP

24. Using the average periodic maintenance costs from Table 1, the periodic maintenance of the currently completed roads is estimated to require a minimum average annual investment of $5.0 million, based on a cycle of 7 years. For the periodic maintenance of bridges and related flood control works as well as larger emergency maintenance, an additional 30% is added to the costs, bringing the total cost to $6.4 million. With the completion of the ongoing contracts in the next couple of years, the average annual periodic maintenance costs will increase to $15.3 million. As the upgrading and rehabilitation works for FYP projects and remaining roads are completed, the average annual periodic maintenance costs will increase further as more and more roads are put under maintenance. Putting all national, municipal, urban and core rural roads under a periodic maintenance regime with a 7-year cycle and including periodic maintenance of bridge and river training works as well as larger emergency maintenance, will cost an **estimated $45 million per year**.

Table 2 Annual costs of periodic maintenance

ROAD TYPE	UNIT COST ($/KM)	COMPLETED ($ MILLION)	ONGOING ($ MILLION)	FYP ($ MILLION)	REMAINING ($ MILLION)	TOTAL ($ MILLION)
National roads	$70,000	$2.2	$5.8	$4.2	$1.8	**$14.0**
Municipal roads	$70,000	$0.1	$0.9	$4.4	$2.3	**$7.7**
Rural roads	$25,000	$2.0	$0.1	$1.7	$3.3	**$7.1**
Urban roads	$70,000	$0.7	$0.0	$2.7	$2.7	**$6.1**
Bridges/Emergency	30%	$1.5	$2.0	$3.9	$3.0	**$10.4**
Total		**$6.4**	**$8.8**	**$16.8**	**$13.2**	**$45.2**

Source: Consultant's processing of data

25. Routine maintenance of the currently completed roads is estimated to cost $2.9 million per year, assuming that 15% of the roads will be under periodic maintenance in any given year. For the routine maintenance of bridges and related flood control works as well as smaller emergency maintenance activities, an additional 30% is added to the costs, bringing the total cost to $3.7 million. With the completion of the

ongoing contracts in the next couple of years, the periodic maintenance costs will increase to $6.7 million per year. As the upgrading and rehabilitation works for FYP projects and remaining roads are completed, the routine maintenance costs will increase as more and more roads are put under routine maintenance. Putting all national, municipal, urban and core rural roads under a routine maintenance regime (assuming 15% of the network is under periodic maintenance in any given year) and including routine maintenance of bridge and river training works as well as smaller emergency maintenance activities, will cost an **estimated $20 million per year**.

Table 3 Annual costs of routine maintenance

ROAD TYPE	UNIT COST ($/KM)	COMPLETED ($ MILLION)	ONGOING ($ MILLION)	FYP ($ MILLION)	REMAINING ($ MILLION)	TOTAL ($ MILLION)
National roads	$4,000	$0.7	$2.0	$1.4	$0.6	**$4.8**
Municipal roads	$3,500	$0.0	$0.3	$1.3	$0.7	**$2.3**
Rural roads	$4,000	$1.9	$0.1	$1.6	$3.1	**$6.7**
Urban roads	$4,000	$0.2	$0.0	$0.9	$0.9	**$2.1**
Bridges	30%	$0.9	$0.7	$1.6	$1.6	**$4.7**
Total		**$3.7**	**$3.0**	**$6.8**	**$7.0**	**$20.6**

Source: Consultant's processing of data

26. Once the reconstruction of the national roads nears completion, a well-developed maintenance program will be essential. That program can develop in steps. Currently it will cost around $10 million per year to maintain only the recently completed roads (this does not include the costs of keeping poor roads passable). Once the ongoing contracts are completed in the next few years, the cost will increase to $22 million per year. If all national, municipal, urban and core rural roads are upgraded and rehabilitated, the maintenance cost will amount to **$65 million per year**. The estimated cost is equal to 2.5% of the total road asset value, which is used by the World Bank to estimate road maintenance needs. This number then is considered robust and truly represents the longer-term maintenance budget need of Timor Leste.

3.2 Sources of Funding

27. Road maintenance may be financed from different sources. Appendix A provides an overview of some international experiences, indicating the sources of funding used for road maintenance. In the case of Timor Leste, the following potential sources of funding for road maintenance have been identified. This includes allocations from existing government revenues as well as the introduction of new road user charges. These are discussed in more detail in the following sections.

a) General State Budget
b) Infrastructure Fund
c) Fuel Tax
d) Vehicle Registration Fee
e) Heavy Vehicle Surcharge
f) Road Tolls

3.2.1 General State Budget

28. Currently road maintenance costs are financed from the General State Budget allocations as part of the budget line for goods and services. For 2019 a budget allocation of **$11.4 million** has been approved for road maintenance. This is a considerable increase from previous years. For future years, an annual increase of 4% per year is foreseen in the 2019 Budget Book. This is sufficient for the current maintenance needs of the recently completed roads, assuming that all available road maintenance funding will be allocated to these roads (for the rural roads this is happening, but for other roads this is not necessarily the case). As the ongoing contracts are completed in the next few years, however, the funding from the General State Budget will quickly be insufficient to meet the annual demand of $22 million. An increase the General State Budget allocation to road maintenance is possible, but this is subject to strong variation by year, as road maintenance has to compete with other funding needs of the government. This has been evident in previous years, where budget allocations have been reduced as a result of problems in approving the annual budget.

Table 4 General State Budget allocations to DRBFC

YEAR	BUDGET	SALARIES	GOODS/SERVICES	MAINTENANCE
2023 (planned)	$14,490,000	$536,000	$13,954,000	$13,321,000
2022 (planned)	$13,933,000	$516,000	$13,417,000	$12,809,000
2021 (planned)	$13,397,000	$496,000	$12,901,000	$12,316,000
2020 (planned)	$12,882,000	$477,000	$12,405,000	$11,842,000
2019 (planned)	$12,386,000	$458,000	$11,928,000	$11,387,000
2018	$2,697,192	$501,373	$2,195,819	$1,980,000
2017	$3,930,900	$478,701	$3,452,199	$3,097,199
2016	$2,013,000	$699,000	$1,314,000	$1,015,000
2015	$996,000	$606,000	$390,000	$20,000
2014	$1,010,000	$746,000	$264,000	$50,000

Source: Budget book data

3.2.2 Infrastructure Fund

29. The Infrastructure Fund is financed from withdrawals from the Petroleum Fund and forms the main source of government funding for the road sector. In recent years, the average annual budget allocation from the Infrastructure Fund to roads and bridges is $230 million (this excludes allocations to the expressway that tend to very greatly from year to year).

Table 5 Road sector projects and past budget allocations from the Infrastructure Fund

IF PROGRAMME	PROJECTS		TOTAL VALUE	IF BUDGET			
	Total	Roads		2016	2017	2018	2019
	#	#	$million	$million	$million	$million	$million
Roads	472	472	$818.9	$104.2	$160.6	$128.8	$127.5
Bridges	42	42	$54.9	$6.5	$10.5	$10.6	$10.0
External loans	19	19	$417.8	$107.0	$48.4	$61.6	$87.0
Rehabilitation & Maintenance	116	101	$27.4	$16.0	$8.1	$12.5	$13.0
Total IF	**1,576**	**634**	**$1,319.0**	**$233.7**	**$227.6**	**$213.5**	**$237.5**

Source: Budget books 2016-2019

30. The Road and the Bridge Programmes of the Infrastructure Fund focus on national and municipal roads, with many road projects already initiated in 2013. The External Loans Programme includes counterpart funding for the road projects financed by ADB, World Bank and JICA, and from 2019 onwards will also include counterpart funding for works in Dili financed by the China EXIM Bank. The Rehabilitation and Maintenance Programme includes 9 rehabilitation projects for national roads, but most of the projects (92) are for the rehabilitation of rural roads under the rural road project.

31. Currently the Infrastructure Fund does not provide any road maintenance funding. A reallocation of part of the road investment funding to road maintenance could quickly generate sufficient funding to cover a large portion of the road maintenance needs. The Rehabilitation and Maintenance Programme under the Infrastructure Fund would appear to be a suitable programme for providing this funding. It must be noted, however, that the programme is not focused exclusively on the road sector, and also includes several water projects and in the future potentially also for other sectors.

32. Another option for mobilizing funding from the Infrastructure Fund for road maintenance is by including the cost of maintenance in the original contract for road upgrading or rehabilitation, and to finance this contract from the Infrastructure Fund. This is already being applied in most development partner projects, where the initial upgrading is followed by a one-year defect notification period and a subsequent 2-4 years of performance-based maintenance. In the government-funded projects this is not the case, and the contractor is only responsible during the one-year defect notification period. The inclusion of a 5-year maintenance period in all upgrading projects could already cover a significant portion of the maintenance

needs. This could be followed by similar contracts where periodic maintenance (seals and overlays) are combined with a number of years of performance-based maintenance, and financed from the Infrastructure Fund.

33. Apart from allowing the use of funding from the Infrastructure Fund, such contracts also have clear benefits in ensuring that contractors pay more attention to the quality of their construction works with the aim of reducing the subsequent maintenance costs. It also ensures that maintenance funding is in place for the period immediately after completion of the construction works. Lastly, the longer duration of the maintenance period allows contractors to invest in equipment and materials, reducing their overall costs.

3.2.3 Development Partners

34. To date, the development partners have been active in supporting the upgrading of the key north coast road and the link roads north to south across the central mountain spine of Timor Leste. The total contracts let to date through International Financial Institutions (IFI) funding amount to $368 million covering the period 2011 to the present. This represents an average expenditure of approximately $50 million per year.

35. Although these contracts are for road upgrading, they tend to also include a number of years of subsequent performance-based maintenance that is financed as part of the original contract amount. Some development partners have also financed maintenance in the past. World Bank is planning to provide $1 million of financing for routine road maintenance in its new project, while ADB is planning to support a 10-year road maintenance programme. As such, development partner funding may form an additional source of financing for road maintenance. It must, however, be stressed that such funding will be temporary in nature, and will serve mainly to fill funding gaps as additional (more sustainable) funding for road maintenance is mobilized from other sources.

3.2.4 Fuel tax

36. Many road funds rely on fuel tax which is paid by all fuel users. In some countries, users such as fishermen and farmers who use fuel for non-road applications argue for exemption from the tax. However, the complications resulting from that approach may offset the benefits achieved, and compensation of the affected groups is considered a better option if the impact is significant. In China the funding is collected by the Ministry of Finance as an excise tax and transferred to the general state budget, from where it is reallocated. This runs the risk of political variability and irregular budgets which goes against the provision of the current law. In other countries the fuel tax is earmarked for direct allocation to the road fund, avoiding this issue. As will be explained in the next chapter, the earmarking of revenue in Timor Leste is not allowed under the Law on Budget and Financial Management (Law No 13/2009) that prohibits consignment, with the exception of "*revenues that due to any special reason must be allocated to certain expenses by express legal or contractual provision*".

37. The amount of fuel tax that can be raised depends on the fuel usage and the level of tax imposed. Table 6 presents the fuel usage in Timor Leste. Current volumes of petrol and diesel imported for automotive use added up to 113.6 million litres in 2018. Introduction of a fuel tax of $0.10 per litre (similar to the tax rate in China) would raise **approximately $11.4 million annually**. This is equivalent to the current allocation from the General State Budget to road maintenance, but falls far short of expected future budget needs which, after the network has been updated, will total $65 million annually. However, as the economy grows and fuel usage increases, so too will the fuel tax revenue. To enable the economy and users to adjust to the fuel price rise as a result of the introduction of a fuel tax, an incremental approach is often used. For instance, a one cent per liter tax could be imposed every six months to allow the price rise to be spread over five years.

Table 6 Fuel import data for automotive use (litres)

FUEL TYPE	2016	2017	2018
Automotive diesel	59,620,978	74,684,071	72,723,376
Automotive gasoline	36,136,247	39,671,918	40,895,060
Total	**95,757,225**	**114,355,989**	**113,618,436**
Potential Fuel Tax revenue ($0.10/litre)	$ 9,575,723	$ 11,435,599	$ 11,361,844

Source: Autoridade Nacional do Petróleo e Minerais (ANPM)

3.2.5 Vehicle registration fees

38. The National Transport Sector Master Plan (2016) assesses the impact of new vehicle registration fees as a means of providing funding for road maintenance. The comparison of Timor Leste with other countries in Asia and the Pacific is provided in Table 7. As shown in this table, the initial charges for the import, purchase and registration of new vehicles are very low in Timor Leste, forming approximately 10% of the average for the region. The potential for increasing these fees is clear and could be expected to raise significant funding over the coming years.

Table 7 New vehicle charges for comparator countries

COUNTRY	IMPORT DUTIES	*AD VALOREM* TAXES	FIRST TIME REGISTRATION	INITIAL REGISTRATION CHARGES	ANNUAL REGISTRATION CHARGES
Fiji	47%	3% - 15%	$37	$8,437	$56
Indonesia	0%	25% - 65%	$1,500	$8,250	$300
Malaysia	0%	75% - 105%	$64	$13,564	$64
New Zealand	15%	0%	$393	$2,679	$393
Philippines	15%	14% - 40%	$32	$8,207	$18
PNG	40% - 110%	10% - 10%	$79	$12,829	$79
Tonga	0%	15% - 15%	$164	$2,414	$69
Thailand	7%	30% - 50%	$90	$11,940	$90
Vietnam	0%	50% - 50%	$1,875	$9,375	$300
Regional average				**$8,050**	**$140**
Timor-Leste	**2.5%**	**2.5%**	**$88**	**$853**	**$10**

Source: Draft Timor Leste Transport Sector Master Plan (2016), Global Automotive Tax Guide (2014); US Department of Commerce (2011). Compilation of Foreign Motor Vehicle Import Requirements; and various web sites.

39. The number of new vehicles registered in Timor Leste from 2010 to 2014 is indicated in Table 8. Based on the numbers of new vehicles registered each year, the application of higher fees for new vehicle registrations could provide up to $15.8 million annually (see Table 8). This estimation is based on increasing the registration fees for new vehicles to the same level as the nearest comparator countries, Tonga and New Zealand, thus still remaining well below the average for the region. Estimated net revenue will also need to contribute to the cost for management of the road network by MOTC – DNTT, and allocation to road management and maintenance may therefore be limited to **approximately $6 million annually**.

Table 8 Potential revenue from higher new vehicle registration fees

VEHICLE TYPE	NEW VEHICLES REGISTERED	ASSUMED VEHICLE VALUE	INITIAL CHARGES	ESTIMATED GROSS REVENUE	ESTIMATED NET REVENUE
Personal vehicles	1,060	$15,000	$2,500	$2,650,000	**$2,385,000**
Public transport vehicles	1,090	$3,000	$2,100	$2,289,000	**$2,060,100**
Trucks	2,060	$20,000	$3,000	$6,180,000	**$5,562,000**
Motorcycles	18,977	$1,000	$340	$6,452,000	**$5,806,800**
Total Annual Revenue				**$17,571,000**	**$15,813,900**

Source: Draft Transport Sector Master Plan

3.2.6 Heavy vehicle surcharge

40. Heavily loaded trucks over time create severe damage to the roads. The repetition of heavy truck axle loads is one of the main causes of pavement damage. Trucks aim to mitigate this impact by increasing the number of axles for a specific load, thereby spreading the load over a larger area. Trucks with only two axles carrying large loads of gravel and sand are examples of trucks having very high negative impact on pavements.

41. Heavy trucks are mainly used for construction, general goods movement and port loading and unloading. The development of Tibar port will have a large impact on the roads serving the port. The estimates for throughput of the port are 110,000 TEUs by 2020, 170,000 by 2025 and 230,000 by 2030.[2] Current traffic at the main Dili hub port is estimated at 85,000 TEU per year in 2014[3]. General cargo estimates in the above report are a total of 270,000 tonnes per year from Dili Port in 2020 and 300,000 in 2025. Data on traffic from the border with Indonesia is not available but can be expected to be limited, in the range of 25,000 tonnes per year. There are no statistics on movement of construction related trucks or internal general cargo trucks, but this is estimated at approximately 100,000 tonnes per year.

42. It is common in other countries for the heavy vehicles to pay a road surcharge based on the total vehicle weight and distribution of axles. While it is not possible to be definitive in the mechanism for charging heavy vehicles, a range of methods have been developed in different countries. This may involve an annual registration fee for trucks and trailers as applied in Australia, a vignette system for heavy trucks as applied in Switzerland, or a levy for heavy trucks as applied in the United Kingdom. In European countries, the average charge for a 40-tonne truck travelling 400 kilometres is approximately $100. In Timor Leste the distances will be less so the average could fall to approximately $25 per TEU or per 20 tonnes of general cargo. The total revenue to be gained by applying these levels of fees would be **approximately $4.8 million per year** (see Table 9).

Table 9 Potential revenue from heavy vehicle fees based on 2025 tonnage estimates

VEHICLE TYPE	CARGO TRANSPORTED	20-TONNE EQUIVALENT CARGOS	FEE PER TRIP	ESTIMATED GROSS REVENUE
Container traffic	170,000 TEU	170,000	$25	$4,250,000
General cargo port	300,000 tonnes	15,000	$25	$375,000
General cargo Indonesia	25,000 tonnes	1,250	$25	$31,250
General cargo and construction	100,000 tonnes	5,000	$25	$125,000
Total Annual Revenue		**186,250**		**$4,781,695**

Source: Consultant's processing of data

43. It must be noted that the introduction of a heavy vehicle surcharge will be more complicated, as it will require the development of a heavy vehicle registration system and a system for checking that registration fees, vignettes or levies have been paid.

3.2.7 Maintenance toll charges

44. Prior to the introduction of the fuel tax for road maintenance, China charged maintenance tolls on both Class 1 and Class 2 highways. Class 1 highways are often 4 lanes but are not controlled access and they allow for turning through the median to intersecting roads and for U-turns. They are similar to Comoro Road through Dili. Class 2 highways are 2-lane roads that are of decent standard, often have turning lanes at intersections and allow for average travel speeds of up to 80 kph but they are not controlled access. The tolls charged on those roads were earmarked for the maintenance of the roads in which they were collected. There was normally not an easily accessible alternative road to use – which is often the criteria attached to whether a road is suitable for tolling or not – but the tolls were set to just cover maintenance costs rather than all costs including capital and debt cost as is the case with expressways.

45. As we consider alternative sources of funding for capital and maintenance for the Timor Leste road network, there is an option to impose maintenance only tolls, particularly along the northern coastal road from Batugade to Baucau. This road carries large traffic volumes, and carries a large portion of the heavy vehicles related to the border crossing in Mota'Ain, Dili Port and the future Tibar Port. Tolls on these road sections would be earmarked specifically for the maintenance of those roads. The likely revenue that could be raised from those tolls has not been estimated since the number of toll booths, the level of tolling and the allocation of toll revenue will have a large impact on the total revenue collected. However, it is mentioned

[2] See www.mof.gov.tl/wp-content/uploads/2014/03/Leaflet_for_General_Public_English.pdf. However, the timetable for port construction is falling behind expectations and the timing of achieving these target volumes will slip.
[3] See open_jicareport.jica.go.jp/pdf/12146866.pdf

here as one of the possible user charges to be taken into consideration. In must be noted that the collection of tolls generally has a higher cost than for instance a fuel tax, often in the order of 20% of collected revenue (more in the case of low traffic volumes).

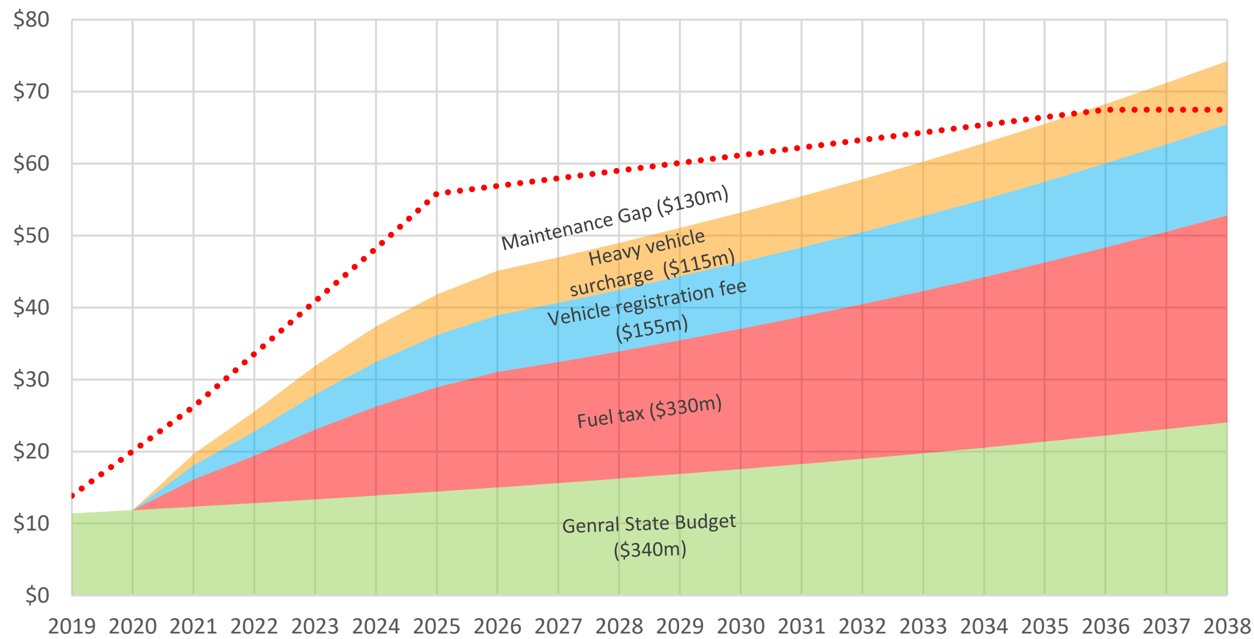
3.3 Coverage of Needs

46. The Road Investment and Maintenance Strategy has identified how the maintenance needs will grow over time in function of the ongoing and planned road investments. This is indicated in Figure 1 below. The total cost of maintenance over the twenty-year period amounts to $1,070 million. The current allocation to road maintenance of $11.4 million from the General State Budget provides only $330 million during this period (assuming a 4% annual increase), leaving a large maintenance gap of $730 million. The introduction of a fuel tax may provide an additional $330 million, while the vehicle registration fee and the heavy vehicle surcharge may raise $155 million and $115 million, respectively.

47. The remaining gap of $130 million would need to be covered from an increase in the allocation from the General State Budget or from an allocation from the Infrastructure Fund. This assumes that all three proposed road user charges can be successfully introduced. Should this not be the case, then the amount of funding to be provided from the General State Budget and the Infrastructure Fund will need to be increased accordingly. The required allocation may therefore range from approximately $130 million over the 20-year period (if all road user charges are successfully introduced) to as much as $1,079 million (if no road user charges are introduced).

48. Since the road user charges as well as any increase in the funding from the General State Budget and from the Infrastructure Fund may take some time to introduce, there will likely be a funding gap during the next 5-10 years as many roads are completed and require immediate maintenance. For this initial gap, maintenance funding from Development Partners may form a suitable option.

Figure 1 Road maintenance needs and funding sources ($ million)



4 Legal Basis for a Road Maintenance Fund

49. There is no standard approach for implementing a Fund. The best option is the one that fits the policy and the needs and structure of Timor Leste. Wholesale importation of Law and practice from another country is not good practice because it is likely to introduce inconsistencies between key elements like budget law and practice or road maintenance budget allocations and decision-making. In fact, this conflict is often the reason for the ineffectiveness of established road maintenance funds.

4.1 Road Transport System Law

50. There is no parliamentary law in Timor Leste for road sector management. The Basic Law on the Road Transport System established in 2003 is secondary Law at Government Decree Level. For the RMF to have a logical platform, a Road Law would normally be required. Such a parliamentary law would substitute the Basic Law on the Road Transport System Law and provide for all the aspects of road management, including road maintenance and its implementation. This approach would take around 2 to 3 years to complete and involve government, business and community consultation.

51. However, the analysis of the Law on Budget and Financial Management (Law No 13/2009) shows that a parliamentary law is not required to establish a Road Maintenance Fund (RMF). The Budget and Financial Management Law specifically provides for Special/Independent Funds and the range of provisions that are applicable to their establishment, management and accountability. In tandem with the Basic Law on the Road Transport System, there is sufficient primary and secondary law and policy principles to establish either a Trust Fund under MOF and MPW control, or a State Single Shareholder company under the Company Law comprising MOF as the shareholder.

52. The Basic Law has all the elements for the establishment of an RMF. This is indicated by the following provisions of the Road Transport System Law.

CHAPTER I - General provisions
Section 5 - Tax harmonisation

With the aim of doing away with disparities in treatment that may substantially falsify the competitive conditions of the various types of transport enterprises, including private transport, the specific tax regime to which they are subject shall be reformulated, in accordance with the following guidelines:

a) A uniform and permanent accounting system for expenditure pertaining to road transport infrastructure, as a basis of taxation predicated on infrastructure expenditure imputation, shall be adopted;
b) Owners of road transport vehicles, public or private, shall be subject to a tax on the use of their respective infrastructure, the basis of calculation on which wear and tear of that infrastructure, which is imputable to them, as well as external costs associated with such transport and supported by the community, shall be taken into account;
c) Revenues generated by the tax referred to in the preceding paragraph, as well as any revenues generated from the use of road transport infrastructure shall, in whole or in part, be earmarked for the expansion, modernisation and maintenance of its networks.

CHAPTER II - Road transport
Section 10 - Road infrastructure

1. *The national road network, which is part of the State's public domain assets, is defined in the National Road Plan.*
2. *The National Road Plan and district and local road networks shall be the subject of a specific instrument.*
3. *The instrument referred to in subsection 10.2 above shall establish the disciplinary rules on categories and technical characteristics of the roads of the national, district and local networks, which shall be adapted to the traffic nature and foreseeable traffic volumes.*

Section 11 - Construction, maintenance and operation of infrastructure

1. *It is incumbent upon the central administration to construct, maintain and operate the national road network.*
2. *The construction, maintenance and operation of district and local road networks are incumbent upon the local authorities of the area where they are situated.*

Source: Road Transport System Law, 2003

4.2 The Budget and Financial Management Law

53. It is critical to examine the Law on Budget and Financial Management (Law No 13/2009) to establish what rules apply to funds that are external to central budget and what constraints/blockages there might be to the efficient operation of the RMF. The Budget and Financial Management Law has been prepared in an insightful fashion. There are specific and extensive provisions for the establishment of 'Independent Funds' that operate outside the normal central budget arrangements. Those provisions of the Budget and Financial Management Law can be allocated to three categories:

- General policy provisions for budgets and funds
- Specific provisions for Independent Funds and how they are to be set up and managed
- Operating provisions relating to government budget arrangements that apply to Independent Funds

54. The following table analyses the Budget and Financial Management Law for an RMF on the basis of these three categories and makes a short assessment of whether they form a constraint or blockage to the effective operation and management of the RMF.

Table 10 Clauses related to general policy provisions for independent funds

GENERAL POLICY PROVISIONS FOR BUDGETS AND FUNDS	BLOCKAGE	BRIEF ASSESSMENT
Article 2 - Scope 1. This law applies to …….. independent services and funds as well as their respective accounts. 2. Independent services and funds fulfil the following requirements: a) Do not have the nature or format of a company, foundation or public association, even if they are subject to the regime applicable to either by another statute; b) Have administrative and financial independence; c) Have their own revenue to cover their expenses, pursuant to the law.	✓	Inability to establish as a company may lessen the level of transparency and accountability (Note: later in the Budget and Financial Management Law, companies with independent funds are allowed)
Article 3 - Budget Principles and Rules 3. The Government Budget may include programs, measures or projects or activities that may involve multi-annual charges that show the total expense forecast for each one and an indicative charge for at least the two following years		Allows for the RMF to establish road maintenance programs for multiple years
7. All budget appropriations for a fiscal year shall lapse after December 31 of this fiscal year	✓	May inhibit forward planning and commitments.
Article 4 – Unit and Universality The Government Budget is a single unit and encompasses all revenues and expenses of the Government services that do not have administrative and financial independence as well as independent services and funds	✓	A plus and potential minus depending on the practicality of the procedures for budget.
Article 6 - No Consignment 1. Revenues cannot be allocated to cover certain expenses. 2. The following are excluded from the provisions of the previous item: revenues corresponding to subsidies, donations or legacies from private individuals that at their own will must be allocated to cover some expenses as well as the ***revenues that due to any special reason must be allocated to certain expenses by express legal or contractual provision.***		Allows for the allocation of funds for special purposes. (Note: The Basic Road Law hypothecation provisions may assist establishing an RMF arrangement under the Budget and Financial Management Law)
Article 9 - Inter-managerial Equity The Government Budget is subordinated to the principle of equity in distributing benefits and costs among entities.		The principle of equitable sharing of funds between levels of government is one of the principles for the allocation of RMF funds

55. The general policy provisions of the Budget and Financial Management Law largely support the establishment of an RMF. Combined with the Basic Law on the Road Transport System, there is sufficient

legal policy support. There are issues to discuss with MOF, especially on the establishment of the RMF as a single shareholder government company under the Company Law.

Table 11 Clauses related to specific provisions for independent funds

SPECIFIC PROVISIONS FOR INDEPENDENT FUNDS	BLOCKAGE	BRIEF ASSESSMENT
Article 17 - Accounts of Specifically Allocated Revenues 1. It is incumbent on the Minister of Finance to create separate accounts for specifically allocated revenues and he/she must ensure that the budget appropriations made from these accounts be used solely for the purpose they are intended for. 2. The Ministry of Finance can delegate to the Treasury Department Director the authority mentioned in the previous item. 3. Interest or any revenues generated by investment of the specifically allocated revenues are subject to the same rules that apply to the originally allocated revenues.		Specifically allows for Special Funds and separated administration, but fund accountability remains with MOF. Critical accountability for the RMF is: • Funds accountability allocated to MOF • Program/delivery accountability allocated to Minister of Public Works (MPW)
Article 18 - Revenue Allocated to Independent Funds Revenue allocated to independent funds must be used only for the purposes of the same.		Fundamental principle of the RMF
Article 27 - Specification of the budget for autonomous services and funds 1. In the budget of the sub sectors for autonomous services and funds, including the budget for each one of these services and funds, the revenues and expenses are specified as follows: a) Aggregate revenues; b) Aggregate expenses.		Transparency of budget total transactions.
Article 32 - Special Funds 1. The Minister of Finance may, when authorized by law, establish special funds that are not part of the Consolidated Fund. The purpose of the Fund is to be specified. 2. The revenues, earnings and proceeds of these funds shall not be transferred at the end of the year to the Consolidated Fund and must be retained by the funds in order to serve the purposes for which they were established. 3. The Minister of Finance shall be responsible for management and monitoring of the funds established according to this article.		Allows for the basic structure of the RMF. These principles will be applied.
TITLE VII: PROVISIONS REGARDING THE INDEPENDENT FUNDS **Article 49: Capitalization of the Independent Funds** A budget appropriation to capitalize an independent fund may be established when said fund is converted into a public company, in the following cases: a) When the independent fund issues shares or any other evidence of participation in the shareholding capital of a public company to the government; b) When the law that creates the independent fund provides that the Government is entitled to receive the entire capital and accrued reserves of said fund after its liquidation; c) When the law that creates the independent fund specifies its purpose and determines that the fund apply its capital and returns solely to this end and forbids the issuance of new shares to shareholders other than the Government. **Article 50 - Acquisitions from Independent Funds** A budget appropriation may be made for the purchase of goods and services from an independent fund in the cases where the amount to be paid does not exceed the market value of these goods and services.		All the provisions will facilitate an RMF. The potential to create a single shareholder (Minister of Finance) government company under the Companies Law is facilitated by these provisions. Transparency and accounting provisions are in line with current policy thought.

SPECIFIC PROVISIONS FOR INDEPENDENT FUNDS	BLOCKAGE	BRIEF ASSESSMENT
Article 51 - Loans contracted by the independent funds The provisions of article 20 of this law shall apply to a loan granted by the Government to an independent fund. **Article 52 - Accounting Practices** 1. The financial year of an independent fund must coincide with the calendar year. 2. The independent funds must keep their accounts and financial records according to the International Accounting Standards, duly recording and explaining their transactions and financial situation and must keep these records so as to: a) permit preparation of financial statements required by this law; b) permit that these financial statements be appropriately and duly audited in accordance with this law. 3. The Government, through the Minister of Finance, may allow the use of cash-based provisional accounting standards for the financial accounts and records pertaining to the first financial year of an independent fund. 4. Independent funds must keep their financial accounts and records for at least seven years after completion of the transactions related to them. 5. The independent funds must make their records available for inspection and oversight purposes. **Article 53 - Reports** The independent funds shall report according to chapter II of Title VI, with the necessary amendments.		

56. These special provisions are acceptable and will facilitate a transparent and well managed RMF. The use of these provisions eliminates the need to establish a Parliamentary Law for the RMF. The Basic Law on the Road Transport System plus these provisions are sufficient to establish an RMF that will be designed for Timor Leste and that will have:

- Fiscal control over the RMF by the MOF
- Delivery and program control over the RMF by MPW

57. If a decision is taken to establish a Company with the Minister of Finance as the sole shareholder, the same fiscal and transparency controls will apply with the added value of corporate reporting, auditing and corporation transparency.

Table 12 Clauses related to implementation controls

IMPLEMENTATION CONTROLS	BLOCKAGE	BRIEF ASSESSMENT
There are a number of implementation controls within the Budget and Financial Management Law that are appropriate for the RMF. Actual implementation approaches will need to be further discussed with MOF. The implementation controls are: • **Article 10 - Management Tools:** Public administrative sector entities are subject to the Public Accounting Official Plan • **Article 14 - Public Money Spending**: Money shall be spent only after the Treasury Department Director has issued Expense Authorization Notices • **Article 15 - Official bank Accounts**: The Minister of Finance is responsible for opening one or more official bank accounts • **Article 16 - Investment of Government Money:** The Minister of Finance can authorize the temporary investment of public money in short term financial instruments • **Article 23 - Content of the Government Budget and Compulsory Expenses:** Budget appropriation for the payment to an independent fund, it must indicate the amount allocated to		

IMPLEMENTATION CONTROLS	BLOCKAGE	BRIEF ASSESSMENT
capitalization, the loans granted as well as the expenses related to procurement of goods or services • **Article 46 - Responsibility for Budget Execution:** The holders of political offices are politically, financially, civilly and criminally liable for actions and omissions they perform in discharging their duty to execute the budget, pursuant to the Constitution and other laws applicable that typify the criminal and financial violations as well as the respective penalties, whether intentional or not		This provision has stronger accountability principles than for Directors under a Company. Higher standard of propriety is agreed.

58. The implementation provisions of the Budget and Financial management Law are largely appropriate to the RMF as a set of principles. There needs to be a specific review with the MOF on the actual arrangements that are in place for providing funds to the RMF and the payment arrangements that will be put into place for RMF disbursements. The application of the following principles will enhance the RMF's operation, cost effectiveness and efficiency in applying good standard road maintenance:

- Performance based contracts – but ones that are capable of being implemented by the private sector and managed by the Government
- Payment systems that do not overly delay payments to contractors. Application of the FIDIC standard of 65 days for payment is a commercial reality that has to be the target. Costs of overdraft funds will reflect in pricing to the RMF and the quality of the services provided under road maintenance contracts.

59. Accountability and transparency are critical factors and Article 46 on accountability for budget execution is a key clause in the management of and accounting for the RMF.

4.3 Conclusion

60. The combination of the Budget and Financial Management Law and the Basic Law on the Road Transport System will enable an RMF to be established that is designed specifically for Timor Leste. The legal arrangements will not need to 'borrow' specific drafting and arrangements from other jurisdictions that may not fit what is needed in this country. To establish a RMF in this way, the following legal documents are needed:

a) A Bank Account with a policy established for its use, rules of access and payments, including signatories and accounting and audit procedures (mostly dictated by the Budget and Financial Management Law);
b) A Decree issued by the Minister of Finance to specify the funding sources for the RMF: excise tax on fuel (percent of funds collected), general state budget contribution, allocations from the Infrastructure Fund, IFI contributions. The annual State Budget Law would form the basis for the allocation of funds to the RMF;
c) If a Single Shareholder Company is to be established, then the Company structure and Articles of Incorporation (these would be similar to the documents required under paragraph a);

61. This approach would take approximately **6 to 12 months** to establish and have in place with operating procedures attached to the RMF. The actual establishment documents and operating rules for the RMF are not part of the current technical assistance and will require a specific task to undertake in conjunction with MOF and the DRBFC. This task would be commenced when the structure and method of RMF establishment has been agreed by Government.

5 Establishing a Road Maintenance Fund

62. The Budget and Financial Management Law clearly states that the owner of Independent Funds is the Minister of Finance. The RMF would therefore be established by the Minister of Finance and its actual operation would be conducted through the MOF with the MPW as the actual implementing agency. The development of documentation for the RMF will start from the following premises:

- The institutional modality for the RMF
- The policy objectives and underlying principles of the RMF
- The allocation of RMF financing

63. These premises will be required in the documentation establishing the RMF no matter what form is adopted to establish the RMF.

5.1 Institutional Modality for the RMF

64. The institutional approach to establish the RM Fund has broadly two options:

- Establish the RMF as a dedicated **bank account** and prepare a management and policy document that applies to the creation of a road maintenance program, its procurement and payment and performance review.
- Establish the RMF as a **Single Shareholder Company** under the Company Law with the Minister of Finance as the shareholder. The Minister would appoint an expertise-based Board as the sole shareholder. The Board would include financial expertise, engineering expertise and community representation. A representative of the Minister of Finance would also sit as a Board member. The MPW would not sit on the Board but rather provide proposals for Board approval[4].

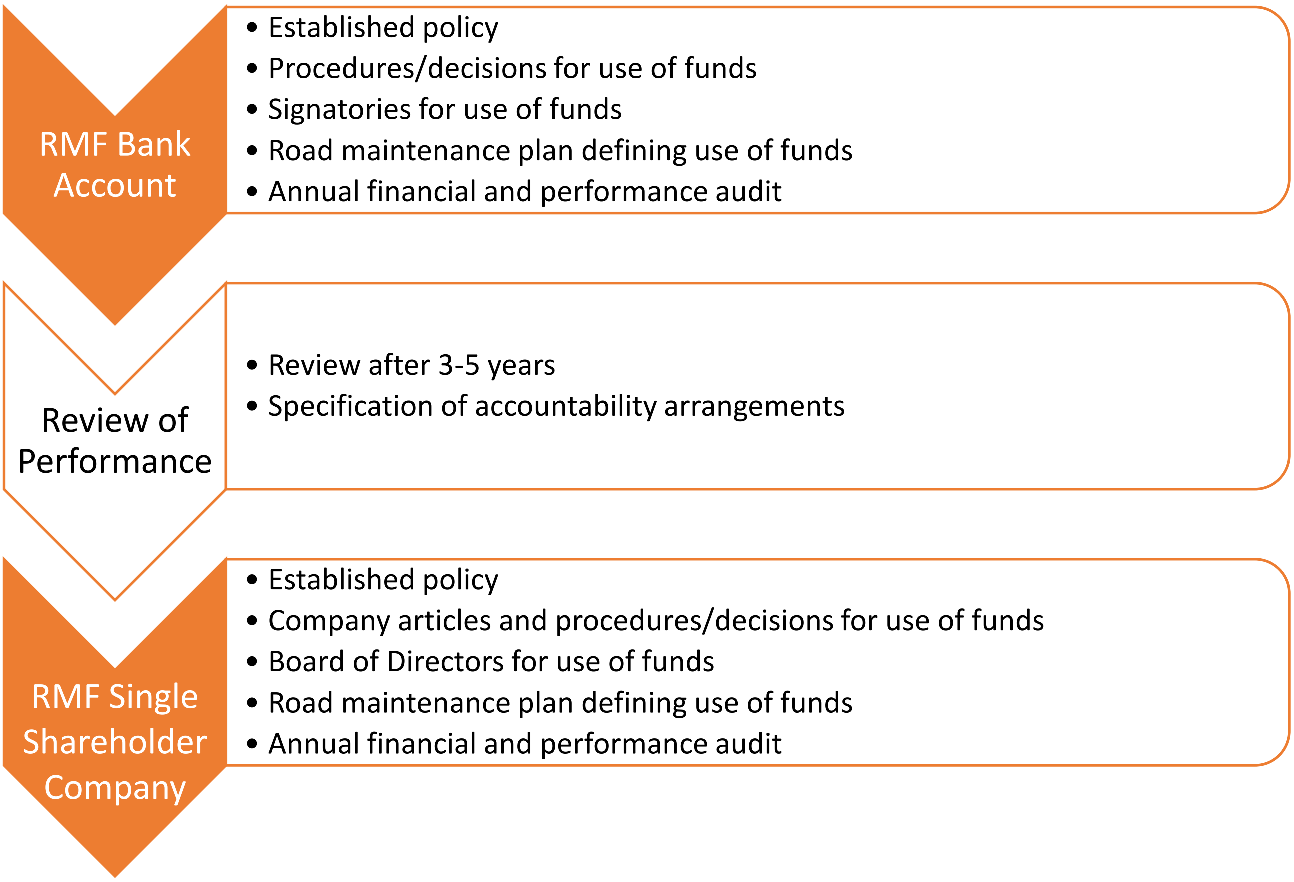
65. Developing a committee or a corporate body (not a company) has not been included in the options listed above. That approach has been adopted in a number of jurisdictions and has resulted in a fundamental flaw during implementation. The implementation problems include issues such as: the lack of executive power to implement programs; problems of inconsistency with Budget Laws; failure of representative-based bodies to act independently of their source of nomination.

66. The institutional approach suggested in this document is a progressive one that follows the path of careful development and decision-making. The following diagram in Figure 2 shows the simple progressive path and movement from an RMF Bank Account to an RMF Single Shareholder Company. This process indicates that documentation to establish the RMF is largely the same regardless of the institutional modality. It is the level of formality that changes when the RMF moves from a Bank Account into a Company with Articles of Incorporation and establishment of a Board with corporate accountability.

[4] This structure is largely compliant with the OECD structure for parastatal bodies established by Government (2015). Key aspects of the OECD policy principles and Guidelines are:

- MOF is the shareholder on behalf of government
- Implementing Agencies are not part of the Board structure because they submit and implement plans
- Expertise is required instead of 'representative' members that have vested interests

Figure 2 Steps in RMF development



67. The key decision-making steps and who will be accountable for them will vary slightly based on the method of implementing the institutional arrangements for the RMF. The following table sets out the structure based on an RMF Bank Account established by the Minister of Finance and operated administratively between the Minister and the MPW; and an RMF established under the Company Law and owned by the Minister for Finance with the MPW as the implementing agency.

ADMINISTRATIVE ACTION	BANK ACCOUNT	SINGLE SHAREHOLDER COMPANY
Road Maintenance Plan (based on RAMS)	DRBFC preparation and submission to RMF	DRBFC preparation and submission to RMF
Approval of Road Maintenance Plan	Ministers of MOF and MPW according to RMF Management/ Policy Document	RMF Board according to Articles of Incorporation
Procurement of Works	DRBFC through MPW and NPC	DRBFC through MPW and NPC
Payment and Release of Funds	MOF according to RMF the Management/Policy Document and the Budget and Financial Management Law	RMF Board according to the Articles of Incorporation and the Budget and Financial Management Law
Audit of Fund: funding and performance	RMF Funds: MOF with Auditor General. RMF Performance: Independent Non-government provider engaged by MOF/MPW	RMF Funds: RMF Board according to Articles of Incorporation and the Law on Audit. RMF Performance: Independent Non-government provider engaged by the RMF

5.2 Policy Objectives and Underlying Principles of the RMF

68. The policy objectives of the RMF would define what it will target. An example of a policy objective for the RMF is the following:

The RMF will fund only emergency, routine and periodic maintenance of national, municipal, urban and rural roads

69. Rehabilitation and new capital works would be specifically excluded from the scope of the RMF. Emergency, routine and periodic road maintenance would need to be defined in the Road Standards issued by the MPW and those standards should reflect international standard practice for the concepts of routine and periodic road maintenance.

70. The objectives and underlying principles of the RMF may provide further information on the structure of the RMF. Examples are provided below.

- The Road Maintenance Fund will be managed by a Board of Directors including both government officials as well as a minimum of 30% road users or other non-government members. The Road Maintenance Fund will be autonomous and will report directly to the Minister of Finance (as the RMF owner) and the Minister responsible for roads;
- All road sections for which the capital investments have been completed, will immediately be put under a routine and periodic maintenance regime following their handover back to the government. For this purpose, the government will ensure sufficient maintenance funding is made available from different funding sources;
  (i) The Road Maintenance Fund will receive annual allocations for road maintenance from the General State Budget and from the Infrastructure Fund as decided in the annual State Budget Law;
  (ii) The Road Maintenance Fund will receive revenue from the following road user charges: a tax on fuel, vehicle registration fees, a heavy vehicle surcharge, and selected road tolls where appropriate;
  (iii) The Road Maintenance Fund will hypothecate the monies received to be used to repair or maintain the road network to an appropriate quality of service standard depending on the road class and design standards.

5.3 Allocation of RMF Financing

71. The RMF owner is the Minister of Finance. The implementation agency for the RMF is the MPW. Both need to sign off on the road maintenance program and the RMF budget on an annual basis. The actual working of the RMF is based on identifying the priority roads that will be maintained at the standard applicable to the classification of road[5].

72. The decision approach for road maintenance will be based on the Road Asset Management System (RAMS) that is currently being developed in DRBFC. It is an evidence-based system that analyses data on the condition of the road network and develops priority targets for road maintenance over the whole road network. The RAMS will be able to produce a Road Maintenance Plan that is limited by available budget and identifies:

- The priority roads
- The proposed treatments per road
- The proposed road maintenance budget per road

73. This output becomes the Road Maintenance Plan to be implemented in a financial year. It is the Plan that is to be measured for successful implementation. It is the Plan to be audited for procurement compliance.

[5] The classification of roads in Timor Leste has 7 technical road classes and each class of road has a standard for construction and performance. Class R1 is the highest and applies to national roads with high traffic volumes. Class RR2 is the lowest and applies to low level rural roads.

6 Summary and Conclusions

74. This *Road Maintenance Fund Policy Paper* assumes a positive decision to establish a Road Maintenance Fund. At time of writing, full discussions have been carried out with the Ministry of Public Works and the Ministry of Finance on the options and steps needed for formal establishment of the RMF. A draft decree law has been prepared as a separate document in English, but it will need to be translated into Portuguese and then approved through the Council of Ministers. As of December 2019, that step is still pending.

75. The RMF is based on the following principles:

- The allocation of funds from an excise imposed on fuel in Timor Leste (petrol and diesel) and later on other sources of revenue such as vehicle registration fees and heavy vehicle charges;
- The potential for the Government to continue providing an allocation from the general state budget and/or the Infrastructure Fund;
- The demonstrated need to apply funds to road maintenance and have a dedicated and accountable road maintenance fund for that purpose;
- Commencing with a simple form of fund that is established as an independent fund under the Budget and Financial Management Law. The RMF would commence as a Bank Account owned by MOF and jointly administered with the MPW.
- The RMF would be reviewed over a period of 3 to 5 years and move to a more sophisticated institutional arrangement as a Single Shareholder Company (Minister of Finance) under the Company Law. Higher levels of accountability would then apply.

76. The legislation that is needed to create the RMF largely exists now. There is no need to develop a specific Law for the RMF. The combination of the **Budget and Financial Management Law** and its specific provisions for Independent Funds, together with the **Basic Law on the Road Transport System** with its policy position for road maintenance and funding arrangements for it, are sufficient to establish an RMF as a Bank Account owned by the Minister of Finance.

77. If the Government wishes to move to a more sophisticated arrangement, the **Company Law** can be readily used to establish a Single Shareholder Company with a Board of Directors (expertise based) that represent the Shareholder. Articles of Incorporation will be required, and Appendix B contains a basic set of terms that would be required for the Articles of Incorporation.

78. To ensure the specific allocation of excise revenue to the RMF, a **Government Decree** will be needed to specify the amount. That amount can be either a fixed amount or a percentage of the revenue. If Government wishes to match that revenue from the consolidated budget, then the annual budget can provide for direct government contributions. The **Law for the Annual Budget** can be used to provide for this.

79. The requirements for setting up the RMF as a simple bank account are indicated in the table below. This shows that the Budget and Financial Management Law and the Basic Road Law are the authorizing Laws for the RMF. The Revenue for the RMF will be designated via a Government Decree under the Budget and Financial Management Law and the revenue will automatically be transferred to that fund on the basis of what the Decree provides (a fixed amount per litre, a percentage of total revenue as examples). That Decree will create budget certainty and clarity for the road maintenance program to be developed under RAMS. It will determine budget affordability.

Figure 3 RMF structured on simple bank account

RMF STRUCTURE	RMF REVENUE
Budget and Financial Management Law Establish the RMF as an Independent Fund with related process **Basic Law on the Road Transport System** Policy for the RMF • Targets • Road Maintenance Plan • Performance monitoring	**Law for the Annual Budget** Government Decree specifying the amount of funding to be allocated to the RMF

80. If the RMF is created as a Single Shareholder Company, the requirements are largely the same as the simple bank account structure. The additional requirement is the Company Law that authorizes the establishment of a Single Shareholder Company to manage the RMF established under the Budget and Financial Management Law. The RMF revenue will be designated via a Decree under the Budget and Financial Management Law and the revenue will automatically be transferred to the RMF on the basis of what the Decree provides (a fixed amount per litre, a percentage of total revenue as examples).

Figure 4 *RMF structured on company*

RMF STRUCTURE	RMF REVENUE
Budget and Financial Management Law Establish the RMF as an Independent Fund • Process **Basic Law on the Road Transport System** Policy for the RMF • Targets • Road Maintenance Plan • Performance monitoring **Company Law** Establish the RMF Single Shareholder Company • Articles of Incorporation • Board of Directors • Process	**Law for the Annual Budget** Government Decree specifying the amount of funding to be allocated to the RMF

Appendix A Funding road maintenance in various countries

COUNTRY	LEGAL BASIS	OVERSIGHT AGENCY	TYPE OF ENTITY	BOARD COMPOSITION	TYPE OF WORK FINANCED	SOURCES OF REVENUE
Lao People's Democratic Republic	Draft Prime Ministerial Decree for the Establishment of a Road Maintenance Fund (RMF) 2001	Ministry of Communication Transport, Post and Construction (MCTPC)	Department within the MCTPC will be formed to administer the RMF.	7-member Steering Committee (public and private sectors) appointed by the Prime Minister from Ministry of Finance, MCTPC, provincial authorities, Chamber of Commerce and Industry, road and passenger transport operators, and the general public. Chairperson to be nominated by MCTPC.	• Routine maintenance, emergency and periodic maintenance works and administration • Renewal works (after all maintenance works have been provided for) • Road safety projects and activities • Other expenses incurred in administering the RMF • Other activities as the Minister may approve • In practice all roads are managed by MPWT, but nearly all funding goes to the national network • Recently this was changed and 80% is for main roads, with most of the remaining 20% going to provincial roads, and almost nothing going to district and village roads	• Surcharge on the prices of gasoline and diesel fuel (over and above ordinary import duties, general sales taxes, and other charges on fuel) • Heavy vehicle surcharge • Tolls on roads wholly publicly financed • International transit charges that might be introduced • Any other road user charges assigned by the National Assembly The charges listed below are out of date and need to be reconfirmed and updated. • Fuel levy on gasoline at the kip (KN) equivalent of US$0.02 per litre; • Fuel levy on diesel at the kip equivalent of US$0.02 per litre; • Annual heavy vehicle charge at the kip equivalent of US$60 on vehicles with unloaded mass greater than 3,500 kg • No vehicles exempt from paying road user charge
Nepal	Roads Board Nepal was established in 2002 under the Roads Board Act	Autonomous Board, majority private sector with public sector representatives	RBN is a self-governing, self-sustaining and organized entity based on Public-Private Partnership [PPP] model.	11 members: 5 from the Government, the rest from the private sector	• Allocates 70% of funding to the main roads managed by DOR, 15% to urban roads managed by municipalities and 15% to rural roads managed by districts • Also included are road safety projects • Enforcement work (implementation of standards) • Research relating to maintenance and Rehabilitation Administration	• Road user charges • Levy on fuel used by transport vehicles • Fines for overloading • International transit fees • Direct road toll • Vehicle registration fee

COUNTRY	LEGAL BASIS	OVERSIGHT AGENCY	TYPE OF ENTITY	BOARD COMPOSITION	TYPE OF WORK FINANCED	SOURCES OF REVENUE
Philippines	**REPUBLIC ACT NO. 8794** imposes a Motor Vehicle User's Charge (MVUC) on owners of all types of motor vehicles. Law includes creation of Road Board and of 4 special trust accounts in National Treasury for (i) Special Road Support Fund, (ii) Special Local Road Fund, (iii) Special Road Safety Fund, and (iv) Special Vehicle Pollution Control Fund	Public-private Board (to be organized by the President)	Separate administrative unit called the Road Board.	7-member Board composed of the secretaries of DPWH (ex-officio head), Finance, Budget and Management, and Transportation and Communications (DOTC) (as ex-officio members). Remaining 3 to come from transport and motorist organizations to be appointed by the President upon recommendation of DPWH and DOTC.	• Use of MVUC: • Road maintenance and improvement of drainage Installation of traffic lights and road safety devices • Air Pollution control. • Special Road Support Fund – 70% of funds to be used exclusively for the maintenance of, and improvement of drainage of, national primary roads. Remaining 30% for maintenance and improvement of drainage of national secondary roads throughout the country. • Special Local Road Fund – to be apportioned to provincial and city governments in accordance with vehicle population and size of road network, to be used exclusively for maintenance of local roads, traffic management, and road safety devices.	• Vehicle charges • Penalties for overloading stipulated in the draft act, imposing an amount equivalent to 25% of MVUC on overloaded trucks and trailers.

COUNTRY	LEGAL BASIS	OVERSIGHT AGENCY	TYPE OF ENTITY	BOARD COMPOSITION	TYPE OF WORK FINANCED	SOURCES OF REVENUE
Vietnam	The joint circular No.230/2012/TTLT-BTC-BGTVT 'Guiding Regime of Management, Use, Payment and Settlement of Road Maintenance Fund' of the Ministry of Transport and the Ministry of Finance, was issued on the 27th of December 2012 to define the process, requirements and responsibilities to collect funds from road users and manage use of those funds for road maintenance in Vietnam (Road Maintenance Fund).	Central Management Council which controls disbursements from the Central Fund and Local Management Council which manages disbursements from the local Provincial Funds. Councils are established by the Prime Minister for the Central Fund and the Provincial People's Committees for the local funds.	Autonomous unit established separate from the Ministry of Transport and Departments of Transport in the provinces.	Composition of board comprised of - Chairman Minister of Transport; - Deputy Prime Minister (for information) - Ministry of Finance - Ministry of Home Affairs - Ministry of Planning and Investment - Provincial People's Committees - Agencies under Ministry of Transport	• National Highway maintenance and management and for maintenance and management of rural roads under provincial responsibility through the People's Councils • Routine and periodic maintenance; emergency and other repairs to ensure safe operation of the road network • Road management services needed for road maintenance • Operational expenses and repair and upgrading of vehicle weight inspecting stations • Supplemental cost for operation of ferries or pontoon bridges where revenue from users cannot sustain the service • Financing of the offices of the Road Management Unit including staffing, special operations and irregular expenses • Expenditure for operation of the Offices of the Fund, including staffing for specialized tasks and expenditures to operate the Fund Management Board or other expenses authorized by the Fund Management Board.	The sources of funding for the road fund include road user registration fees to be collected directly from vehicles, including: cars, trucks, trailers, semi-trailers and two-wheeled and three-wheeled motorcycles. These fees will be supplement by an annual allocation from the central state budget or provincial budget. The road fund may also collect other revenue related to road use fees such as signage fees or concession fees along national highways and other revenues, as regulated by Vietnam law. All monies collected from motorcycles is allocated to the local fund. Other fees collected from vehicles is allocated 35% to the local fund and 65% to the central fund.

COUNTRY	LEGAL BASIS	OVERSIGHT AGENCY	TYPE OF ENTITY	BOARD COMPOSITION	TYPE OF WORK FINANCED	SOURCES OF REVENUE
Japan	The road improvement special account was set up under the existing budget law. The first law was passed in 1953 and was known as the Temporary Measure Law for the Budget for Road Improvement. In 1958 this was replaced by the Road Improvement Special Account Law	Japan Road Council. The role and duties of the Council were laid down in article 77 of the Road Law which provides for a Road Council to be established by the Ministry of Construction at the request of the Minister. Management consisted of a chairperson and twelve other members.	The earlier Road Council has now been converted into a Roads Committee under a broader Infrastructure Council.	The members were proposed by the Director General of Roads and are appointed by the Minister of Construction. The chairman was traditionally the President of Japan Road Association who was always a former under-secretary from the Ministry of Construction. However, this arrangement was changed a few years ago and the last two chairmen have been independent.	Japan prepares 5-year highway development plans, with the national government establishing national investment priorities and targets. National projects are selected through a programming process that includes cost–benefit analysis. Costs for toll road construction and maintenance are borne by expressway companies (national expressways), and costs for other roads are shared between the national government and the relevant subordinate government levels based on the type of facility.	• Established hypothecated revenue in 1954. • Dedicated funding includes a diesel tax liquefied petroleum gas (LPG) tax, motor vehicle purchase tax, and motor vehicle tonnage tax. • All the revenue from the gasoline tax (about \$0.41 per litre) is transferred to the road improvement special account. Up to a quarter of this can be donated to local governments for local road development. • Half the motor vehicle LPG tax (\$0.14 per kg) is paid into the special account. The remainder is transferred to local government as motor vehicle LPG transfer tax. Seventy-five percent of the motor vehicle tonnage tax (\$51 per half ton per year) is paid into the special account. The remainder is transferred to local government as motor vehicle tonnage transfer tax. • At the local government level, additional revenues are collected from two further taxes: i. A diesel fuel tax which is collected at the local level only (\$0.31 per litre); and ii. A motor vehicle purchase tax, also collected at the local level (5 percent of purchase price for private motor vehicles).

COUNTRY	LEGAL BASIS	OVERSIGHT AGENCY	TYPE OF ENTITY	BOARD COMPOSITION	TYPE OF WORK FINANCED	SOURCES OF REVENUE
New Zealand	The national road fund was created in 1953, but the arrangements have been restructured a number of times. July 1995, the Transit New Zealand Amendment Act was passed which provided for the establishment of an independent Road Fund Administration (Transfund) to manage the National Land Transport fund (NLTF)	The NLTF is managed by the NZTA, a statutory entity with a board that makes independent decisions on allocating and investing funds from the NLTF in accordance with government policy. The NZTA also administers road user charges and vehicle registration and licensing, and monitors the road system and implementation of activities funded from the NLTF.	Independent statutory agency with independent Board.	Transfund is overseen by a management board which consists of five members: (i) two represent TNZ (either employees or members of the TNZ Authority); (ii) one represents local government; (iii) one represents road users; and (iv) one represents other aspects of the public interest.	The NLTP provides 100% of the funding for national highways, an average of 50% for local roads, 50% for public passenger transport services and infrastructure, and 100% for road policing. Local authorities provide the remainder of the funding for local roads and public passenger transport. Local authorities sometimes carry out road projects outside of the NLTP. Local funding comes from local rates and other local sources such as developer contributions. New Zealand is currently the only country that allocates central government road maintenance funds on the basis of a standardized road asset management system. All road controlling authorities are required to maintain such a system.	In New Zealand, all revenues from road user charges (after administration costs) are dedicated for land transport purposes since 1978. From July 2008 all of the excise duty on motor vehicle fuel (gasoline, compressed natural gas [CNG], and LPG) has been hypothecated. For gasoline, this is currently $0.39/litre. There is no excise duty on diesel because diesel-powered vehicles pay road user charges.

COUNTRY	LEGAL BASIS	OVERSIGHT AGENCY	TYPE OF ENTITY	BOARD COMPOSITION	TYPE OF WORK FINANCED	SOURCES OF REVENUE
United States	Surface Transportation Assistance Act of 1982. The companion Highway Revenue Act of 1982 added \$0.05 to the gas tax (the first such increase since 1961), four cents dedicated to restore interstate highways and bridges, and one cent for public transit.	There is no independent oversight board. Oversight is provided by two committees of Congress: one in the House of Representatives and the other in the Senate. Their main role is to handle the authorizing legislation which regularly continues the Federal-Aid Highway Program. Implementation of the program is then delegated to the Secretary for transportation.	Government Agency	Secretary of Transportation	With the system now relatively complete, the allocation process has shifted to a focus on fairness and has become contentious. Complex formulas allocate nearly all national road funds to states and, to a much more limited degree, local governments. These formulas vary by funding program but generally consider overall factors such as national system length, fuel and truck tax contributions, traffic volumes, and population, along with program-specific factors such as pollution levels and number of border crossings. In addition, the US program typically includes discretionary funding pools that are distributed by the Secretary of Transportation. A major criticism of the US approach is the lack of a relationship between allocations and performance.	Hypothecated fuel tax at the federal level for highway purposes since 1956. Truck user fees (heavy vehicle use tax, truck and trailer sales tax, and truck tire tax) have been added, although fuel taxes still provide about 90% of the revenue. The rate of dedicated fuel tax has been increased over the years but has not been increased since 1993. The current rate for gasoline and gasohol is \$0.0486/litre and for diesel, \$0.0645/litre. A litre of fuel costs 86 cents in the US. Proceeds from fines and penalties imposed for violation of motor carrier safety requirements, and proceeds of certain penalties imposed by the Internal Revenue Code related to highway-user taxes, are also dedicated for highway purposes. Revenue is \$US 35.2 billion from both gasoline and diesel fuel.

Appendix B Issues for Articles of Incorporation for the RMF

The Articles of Incorporation of the RMF will need to include the following matters:

Constitution of the RMF Company

1. Prior to registration under the Companies Law, the Minister of Finance must ensure that the constitution of the RMF Company provides for:
    a. A company focus on transport infrastructure management and service delivery;
    b. The government shareholding of the company, including paid up capital;
    c. The expertise required of a Chairman and board members;
    d. The number of board members, which must not exceed 7 including the Chairman.
    e. The power of the Minister of Finance to appoint, reappoint and dismiss a Chairman and board member;
    f. The adoption of transparency guidelines that include:
        i. The obligation to advise the people of Timor Leste on road maintenance programs and their intended impacts and benefits.
        ii. Guidelines for public awareness of road maintenance programs and access by the people of Timor Leste to information and documents, including public documents.
    g. The requirements for business and financial planning, establishing and meeting key performance indicators and return on capital invested;
    h. The approval procedures by the Board of Annual Road Maintenance Programs and their funding
    i. The financial and activity reporting to the Minister of Finance;
    j. The power of the Board to make financial and budget decisions;
    k. Establishing business based commercial accounting principles and practices which comply with the standards of the International Accounting Standards Board;
    l. Establishing three governance committees: risk management and audit committee, business development and ethical practice committee and staff and board remuneration committee;
    m. Appointing company auditors with qualifications that meet international audit standards;

Tenure of Chairman, Board members of the RMF Company

2. The appointment of a Chairman or a board member of a transport services company must not exceed 5 years.
3. A Chairman or a board member is eligible for one reappointment for up to an additional 5 years.

Financial Support for the RMF Company

4. The Minister of Finance, after considering the advice of the Minister of Public Works, may provide financial support the RMF Company.
5. “Financial support” means whole or partial budget support, the injection of additional capital, the provision of loan funds or a combination of them.
6. Financial support provided under Article 5 must be formalized by a contract signed by both parties and:
    a. In the case of whole or partial budget support, a specification of the period of the for which budget payment will be made (not being more than 2 years) and the key performance indicators.
    b. In the case of a capital injection, a specification of the purpose of the capital injection and the key performance indicators;
    c. In the case of a loan, a specification of the purpose of the loan, the key performance indicators and the payback period.
7. A contract made under this Article is a public document.

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