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## Abbreviations

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<th>Description</th>
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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
</tr>
<tr>
<td>AH</td>
<td>Asian Highway</td>
</tr>
<tr>
<td>BTO</td>
<td>Build – Transfer – Operate</td>
</tr>
<tr>
<td>BOT</td>
<td>Build-Operate-Transfer</td>
</tr>
<tr>
<td>DBFOM</td>
<td>Design-Build-Finance-Operate-Maintain</td>
</tr>
<tr>
<td>EPC</td>
<td>Engineering Procurement and Construction</td>
</tr>
<tr>
<td>EV</td>
<td>Electric Vehicle</td>
</tr>
<tr>
<td>HGV</td>
<td>Heavy Goods Vehicle</td>
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<tr>
<td>MEF</td>
<td>Ministry of Economy and Finance</td>
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<tr>
<td>MOE</td>
<td>Ministry of Environment</td>
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<tr>
<td>MPWT</td>
<td>Ministry of Public Works and Transport</td>
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<tr>
<td>MRD</td>
<td>Ministry of Rural Development</td>
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<tr>
<td>NESAP</td>
<td>National Environment Strategy and Action Plan</td>
</tr>
<tr>
<td>NR</td>
<td>National Road</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>Operations and maintenance</td>
</tr>
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<td>OPBRC</td>
<td>Output and Performance-Based Road Contract</td>
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<tr>
<td>PPIAF</td>
<td>Public-Private Infrastructure Advisory Facility</td>
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<td>PPP</td>
<td>Public Private Partnership</td>
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<td>RGC</td>
<td>Royal Government of Cambodia</td>
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<td>RRSA</td>
<td>Roadside Rest and Service Area</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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</table>
Acknowledgements

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This study was conducted under the guidance of a World Bank team led by Sadig Aliyev (Program Leader, Senior Transport Specialist) and Hongye Fan (Transport Specialist) and comprising Mark Alexander Giblett (Senior Infrastructure Finance Specialist), Veasna Bun (Senior Infrastructure Specialist), Bowen Wang (Transport Specialist), Alexander Spernol (Transport Engineer/Consultant) and Xuanyi Sheng (Transport Consultant).

The study was executed by the consultant consortium, consists of EY Corporate Advisors Pte. Ltd., Ramboll Environ Singapore Pte. Ltd., VDB Loi Law Firm and Sustinet, contracted by the World Bank. The information contained in this Report has been prepared based on publicly available sources and documents shared by MPWT and MEF, which give us an understanding of the current PPP environment in Cambodia. No legal opinion or legal advice is provided by EY. Legal advice required for the preparation of this Report was obtained from VDB, the legal consultants subcontracted by EY. EY’s role in the review of the legal advice received was limited to critically analysing the key issues and recommendations presented.

The World Bank team gratefully acknowledges the cooperation with the General Department of PPPs of the Ministry of Economy and Finance and Ministry of Public Works and Transport during implementation of the study. The government counterparts are not, however, responsible for any of the conclusions in this report.

This report is a product of the staff of the International Bank for Reconstruction and Development/the World Bank. The findings, interpretations, and conclusions expressed in this paper do not necessarily reflect the views of the Executive Directors of the World Bank or the governments they represent. The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of the World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.
Executive summary
1. Executive summary

1.1 Objectives and scope

The World Bank (WB) has been actively undertaking projects to assist the Royal Government of Cambodia (RGC) in improving the quality and safety standards of road infrastructure in Cambodia. As part of its continuing efforts to support the RGC in the road infrastructure space, WB with the support of PPIAF has appointed a consortium led by EY to provide advisory services to support the implementation of a study on market-oriented integrated roadside rest and service areas (RRSAs).

The broader long-term objectives of the project are as follows:

► To increase private sector participation in the transport sector and create local employment opportunities for communities located along the roads; and
► Given that roads are the dominant mode of transport in Cambodia, to improve connectivity, modernise roads and provide ancillary services such as RRSAs to effectively manage road safety risks associated with driver fatigue.

In partnership with the Ministry of Public Works and Transport (MPWT) and Ministry of Economy and Finance (MEF) – General Department of PPPs, the consultant team has been engaged for the following tasks:

► Review the existing policy, procedures and practices and develop action plans to enhance private sector participation and financing in Cambodia’s road sector;
► Consult with stakeholders in relevant government institutions, development partners and private sector to consolidate the existing knowledge on private sector participation in the transport sector and RRSAs; and
► Review domestic and international practices in development and operation of RRSAs, conduct a market survey and provide recommendations on how best to structure RRSA projects with private sector participation.

This Final Report presents the findings and recommendations of the RRSA component of the study.

1.2 Approach

In preparing this report, the consultants have undertaken a review of the current state of RRSA provision in Cambodia, including the legal/regulatory framework, market condition and existing development and operational practices. A mix of ASEAN and global examples have been reviewed as international benchmarks to provide perspectives on how different countries have approached RRSA development. Issues explored include land ownership and acquisition, road infrastructure, right-of-way and access, environmental and social considerations, suitability of the PPP model for RRSA development and the role of the Government versus the private party, amongst others.

In addition, a survey was conducted on the current RRSA network in Cambodia to better understand the geographic distribution and typical services / facilities provided. The survey targeted representative road corridors among the Cambodia network of NRs, covering a broad spectrum of road users, inclusive of haulage / cargo routes, tourism routes, as well as local and regional traffic between major urban centres. The survey comprised the following components:
Observational survey involving inspection of RRSA facilities (including location, spatial distribution, type of facility, and each facility’s operational condition); and

Interviews with target groups of stakeholders (transient road users, RRSA owners / operators, roadside residents and logistics / bus companies) to determine the profile of stakeholders and needs and preferences of RRSA users.

1.3 Structure of this report

This report highlights the key findings from the project, including the technical, legal, environmental, and commercial issues that should be taken into consideration for the development and operation of integrated RRSAs. This report also makes recommendations for the immediate to long-term development of RRSAs, including potential implementation models, service standards and technical specifications.

Table 1. Structure of the report

<table>
<thead>
<tr>
<th>Section</th>
<th>Section title</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Executive summary</td>
<td>Summarises the background, purpose of the report and key findings.</td>
</tr>
<tr>
<td>2</td>
<td>Introduction</td>
<td>Provides an overview of Cambodia’s road network and highlights the importance of road safety in Cambodia’s context.</td>
</tr>
<tr>
<td>3</td>
<td>Current RRSA landscape in Cambodia</td>
<td>Summarises key findings from the observational survey and interviews with stakeholders, as well as the assessment of the current institutional and legal framework for RRSAs.</td>
</tr>
<tr>
<td>4</td>
<td>Considerations for RRSA development</td>
<td>Discusses the key commercial, technical, environmental, and social considerations behind the implementation of RRSAs in Cambodia.</td>
</tr>
<tr>
<td>5</td>
<td>Future Outlook</td>
<td>Sets out the immediate, medium-term, and long-term action plan for the RGC to realise the socio-economic potential of the RRSA sector.</td>
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1.4 Summary of findings

Based on a review of global practices for RRSA development, findings show that while there are numerous examples of successful RRSA models, there are no standard recommended frameworks or desired typology for RRSA development. RRSAs have been developed considering the specific needs of travellers, commercial opportunities available and relevant cultural and local practices and sensitivities across the different countries.

Cambodia has developed a network of RRSAs primarily along the NRs and the findings indicate the following:

- From the surveys and site assessments, both road users and bus / haulier companies interviewed indicated the need for improvements to existing RRSAs such as upgraded washrooms, improved road safety, improved facilities such as fuelling/café/restaurants, parking provisions especially for heavy goods vehicles (HGVs) which are lacking, and availability of WiFi. As such, there is a good demand and opportunity for RGC to prioritise improving the provision of essential services and facilities in the short term. Additional value-added services can be added in tandem with progress in economic development and evolution in the preferences of road users.
While the survey respondents along the NRs surveyed were generally satisfied with the current network of RRSAs, there could be benefits and opportunities to extend the coverage of RRSAs in the busier rural roads and incorporate RRSA development early into Cambodia's road program to achieve better synergies and scale. The establishment of an RRSA network should be considered together and integrated with the planned upgrades / upliftment to road quality and safety. Given that demand for RRSA facilities is directly tied to the traffic volume and travellers’ ability and willingness to spend, a comprehensive road upgrade and RRSA development programme would also signal to private investors the government’s commitment to providing the necessary trunk infrastructure, across both NRs and rural roads to ensure the project’s success. In addition, this approach should help mitigate the scenario of developing a premium-quality RRSA on a poorly developed / maintained road.

RRSA developments can be procured through various methods, including both public tenders and unsolicited proposals. Some possible implementation models include:

- Bundling a series of RRSAs along the same national highway under a single contract: Bundling would enable cross-subsidisation between profitable RRSAs and unprofitable RRSAs that may not be commercially viable on a standalone basis while delivering other safety/ social benefits. Such an approach would generate economies of scale and allow for standardised service provision across the entire network of RRSAs;

- Co-development of RRSAs with a road development and maintenance contract: Co-development would potentially provide adequate scale to attract private investors to bid for a PPP project. This is particularly suitable for major new road projects as the operator could possibly offset, subject to a value for money assessment, some of the construction costs with revenue from the RRSAs and/or toll revenue; and

- Upgrading the existing network of fuel stations to standardised RRSAs: Leveraging the existing RRSA network would probably be the easiest way for RGC to improve safety and upgrade facilities to offer a more comprehensive range of services / facilities.

A more detailed evaluation of each of the above, including the benefits and costs, will be needed as a next step. As part of determining the business case and the procurement approach and process, there are a number of preliminary actions which the RGC should consider to inform the most appropriate implementation and business model:

- **Demand Assessment**: The RGC should undertake a detailed assessment of the underlying demand for potential identified RRSAs (including willingness to pay, type and scale of services) amongst the various user groups, which would inform the site selection criteria and procurement approach. Demand assessment considering COVID-19 and post-COVID-19 to understand the sensitivity of footfall to external economic conditions is likely to be important assessment factors for lenders.

- **Regulatory and Contractual Framework**: Policy guidelines on RRSA implementation should also be developed to provide the governance framework to form the basis for undertaking such projects. Examples include circulars / guidelines on land acquisition for RRSA development, regulation of RRSA design and requirements for government permits to develop and carry out business operations in RRSAs.

- **Market Consideration**: The RGC should take into account any broader potential market impacts on existing businesses / industries. For example, assessment should consider how best to
incorporate small local businesses into RRSA facilities as appropriate, to potentially minimum spacing requirements to not crowd out local businesses, and/or how best to nurture the development of new businesses / opportunities within the RRSAs. A recent international example includes India, which has introduced a policy to guide the development of RRSAs across the country on a standardised basis. Initiatives to support local communities should also be considered while developing new projects. For example, the concession agreement could include minimum obligations for local community participation in projects developed by the government.

- **Market Testing:** As the RRSA market in Cambodia is nascent, as part of its appraisal of a suitable approach, market consultations / engagement will likely be helpful to inform the level of market capability, investors’ risk appetites and users’ ability to pay for services to help inform the choice of procurement model and associated opportunities and risk allocation. A market consultation process could also be a means to provide the private sector with better clarity with respect to regulatory requirements and any expected service standards and, equally, seek their feedback and new ideas. This could encourage private operators’ interest and potentially promote the submission of unsolicited proposals. The RGC could also consider developing pilot RRSA projects through partnerships with the private sector to test various business models and implementing arrangements.

- **Pipeline Development:** A vision for the sector and developing a plan for a pipeline of RRSA projects will help create and cultivate private sector interest and support scale and capability building in the industry. Creating a facilitative institutional environment could boost investors’ confidence by better understanding requirements, enhancing market competition and increasing the project’s potential benefits for both the government and the private operator.
Introduction
2. Introduction

2.1 Overview of Cambodia’s road network

An efficient transport network serves as a critical enabler for Cambodia's major growth drivers, including agriculture, tourism, manufacturing, and construction. Road transport is the largest transport subsector in Cambodia, with an estimated modal share of more than 90% for passenger and freight. The total road length in Cambodia is more than 61,000 km. The roads are classified as follows:

- Expressway numbers (E): The only expressway currently is the E4, a parallel expressway to National Road 4, currently under development;
- National Roads (NR):
  - 1-digit numbers radiate in counter-clockwise order from Phnom Penh;
  - 2-digit numbers are less important roads; and
- Provincial roads:
  - Numbers either have 3 or 4 digits, or one digit indicating the zone, a 2- or 3-letter province abbreviation and a digit.

However, many roads are unpaved, particularly provincial and rural roads, as shown below in Table 2. Although upgrading and rehabilitation of the road network are ongoing, overall, the conditions of Cambodia’s core NRs are currently not consistent with international standards. Appendix 1 includes an overview of the NRs. The critical development needs include upgrading the 1-digit national roads to asphalt concrete roads and increasing the lanes from two to four to meet increasing traffic demand, rehabilitating 2-digit national roads to meet the national standard, and increasing the proportion of paved sectors on provincial and rural roads. The Ministry of Public Works and Transport (MPWT) is the authority responsible for the development and management of the national and provincial road network, while the Ministry of Rural Development (MRD) manages rural roads, which make up 74% of the total road network.

Table 2. Road sector indicators

<table>
<thead>
<tr>
<th>Road type</th>
<th>Road length (m)</th>
<th>Share in network</th>
<th>Percentage paved</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>National (1 digit)</td>
<td>2,254</td>
<td>4%</td>
<td>100%</td>
<td>MPWT</td>
</tr>
<tr>
<td>National (2 digit)</td>
<td>5,007</td>
<td>8%</td>
<td>72%</td>
<td>MPWT</td>
</tr>
<tr>
<td>Provincial (3 and 4 digit)</td>
<td>9,031</td>
<td>15%</td>
<td>30%</td>
<td>MPWT</td>
</tr>
<tr>
<td>Rural</td>
<td>45,242</td>
<td>74%</td>
<td>5%</td>
<td>MRD</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>61,534</strong></td>
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As part of this report, strategic road corridors for regional connectivity have been selected for further survey and analyses, as shown in Table 3 and Figure 1.

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2 Paved with double bituminous surface treatment (DBST), asphalt concrete or cement concrete
<table>
<thead>
<tr>
<th>Road corridor</th>
<th>Comments</th>
<th>Main Road Users</th>
<th>Transport Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Road 1</td>
<td>Important route for transport of goods and connectivity along the Phnom Penh-Bavet Corridor; Aligned with the development plan of the Phnom Penh-Bavet Expressway project</td>
<td>Hauliers, Local drivers / passengers, Local RRSA owners / operators, Cross-border drivers / passengers</td>
<td>Bavet Border (Viet Nam Border) Suvannaphum Special Economic Zone</td>
</tr>
<tr>
<td>Phnom Penh – Vietnam Border</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Road 4</td>
<td>Important route for transport of goods from Sihanoukville seaport to the capital, Phnom Penh</td>
<td>Hauliers, Local drivers / passengers, Local tourists, Local RRSA owners / operators, International tourists between Phnom Penh and Sihanoukville</td>
<td>Sihanoukville Sea Port Sihanoukville Special Economic Zone Phnom Penh International Airport Phnom Penh Special Economic Zone Logistics Hub (Planned)</td>
</tr>
<tr>
<td>Phnom Penh - Sihanoukville</td>
<td></td>
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<tr>
<td>National Road 5</td>
<td>Important route for transport of goods and tourism; Connects Battambang to the capital, Phnom Penh</td>
<td>Hauliers, Local drivers / passengers, Local tourists, Local RRSA owners / operators, Cross-border drivers / passengers</td>
<td>Poi Pet (Thailand Border)</td>
</tr>
<tr>
<td>Phnom Penh - Thailand Border</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>National Road 6</td>
<td>Important route for transport of goods and tourism; Connects Kampong Cham to Siem Reap's Angkor Wat tourist hub</td>
<td>Hauliers, Local drivers / passengers, Local tourists, Local RRSA owners / operators, Cross-border drivers / passengers, International tourists between Phnom Penh and Siem Reap</td>
<td>Phnom Penh Airport Siem Reap Airport</td>
</tr>
<tr>
<td>Cambodia-Thailand</td>
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Source: “Cambodia Transport Financing, Roadside Rest and Service Area Survey Report, Cambodia” by Ramboll, Table 2. May 2022.
2.2 Funding of road infrastructure in Cambodia

Roads are critical to Cambodia’s social and economic development as the principal mode of movement for goods and people both within Cambodia and across neighbouring countries. However, Cambodia’s less developed road network and logistics infrastructure has restricted the country’s trade growth. In 2014, its export costs were about 30% higher than neighbouring countries, such as Thailand and Vietnam. Recognising these limitations, the Cambodian government has unveiled plans for the country to strengthen the quality of its transport infrastructure and become a regional logistics hub for goods warehousing and goods transportation in ASEAN, particularly between Vietnam and Thailand. In addition to road upgrading and rehabilitation, infrastructure is being developed along strategic road corridors. A key example of this is the 98-hectare Phnom Penh Logistics Complex (PPLC) logistics hub.

Cambodia’s transport budget receives funding from more than ten development partners, including China, Japan, Korea and multilateral development banks such as World Bank (WB) and Asian

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Development Bank (ADB). In recent years, the RGC and development partners have made significant investments in the transport sector, mainly in the area of road improvements. In addition, private sources of financing have been prominent in recent large road projects, such as the Phnom Penh to Sihanoukville Expressway PPP project, for which the China Road and Bridge Corporation had invested USD 1.8 billion under a Build-Operate-Transfer (BOT) arrangement.

Figure 2. Funding source for national and provincial roads in Cambodia, 2014 – 2018 (USD m)$^5$

2.3 Road safety in Cambodia

Road traffic accidents are a leading cause of death in Cambodia. An average of 5.4 people die every day from traffic accidents in Cambodia, making it the sixth leading cause of mortality. A report by United Nations Development Programme (UNDP) has estimated the cost of road traffic accidents in Cambodia to be USD 466.8 million in 2019, equivalent to 1.7% of the annual GDP, of which 88.8% is due to loss of life and associated lifetime earnings.$^6$

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From 2014 to 2019, the number of road traffic accidents along the one-digit National Roads was higher than those along the two-digit National Roads and three-digit Provincial Roads. These roads, which were built to transport goods between the capital and borders and to the ports by heavy trucks and containers, are considered the most dangerous roads in Cambodia due to the occurrence of traffic accidents and limited management by authorities. Amongst the one-digit National Roads, National Road 5 recorded the highest number of accident cases from 2014 to 2019, as shown below in Figure 4. Discussions with MPWT in April 2022 indicate that improving road safety and user experience on the road network is a key priority of the government and a focus area for new infrastructure projects.

**Figure 4. Number of accidents along each National Road, 2014 – 2019**

An RRSA is a facility located next to major roads where drivers and passengers can rest, eat, or refuel without exiting onto secondary roads or incurring major disruptions to their travel journey. One of the key functions of RRSAs is to increase motorists’ safety by providing them with a convenient and secure facility to stop, rest and refresh. Research suggests that driver fatigue has an influence in 13%

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7 WHO Global Status Report on Road Safety 2018, 2018, World Health Organisation, [https://extranet.who.int/roadsafety/deaths-on-the-roads/#deaths](https://extranet.who.int/roadsafety/deaths-on-the-roads/#deaths)

to 41% of all heavy vehicle crashes. To illustrate the impact of RRSAs on road safety, a review of Walker County rest area on Interstage Highway 45 in the US demonstrated a 33% reduction in fatalities and a USD 23 million annual safety benefit after renovation in 2007.

In Cambodia, there have been developments of modern rest areas along the road network, including both purpose-built RRSAs as well as investments by the retail fuel sector into expanding their network of forecourt-style retail fuel stations with co-located cafes and other services. The two purpose-built RRSAs along NR5 are located at stretches of road which have been recently upgraded, illustrating the potential for road improvement projects to also consider rest area provisions at strategically important locations. Notably, the RRSA developments thus far have mainly arisen from the initiative of the private sector or development partners rather than as part of a coordinated programme by the RGC.

The following chapters review the current landscape for RRSAs in Cambodia and the legal framework governing the development of the sector.

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Section 3

Current RRSA landscape in Cambodia
3. Current RRSA landscape in Cambodia

3.1 Overview

An RRSA is a roadside facility safely removed from the route with parking and such facilities to meet the motorist’s needs for rest, relaxation, comfort and information. There are no internationally recognised standard definitions for RRSA, including the composition and structure. The nomenclature is usually defined by countries based on the strength and size of their individual networks. For the purpose of this report, RRSAs in Cambodia have been categorised as follows:

- **Major** (primarily utilised for long rest breaks, offering a range of facilities and separate parking areas for heavy and light vehicles):
  - Purpose-built rest areas with a range of facilities.

- **Minor** (primarily utilised for shorter rest breaks, providing sufficient parking space for both heavy and light vehicles):
  - Mixed services, primarily retail fuel with other complementary services;
  - Restaurants catering to long-distance travellers;
  - Retail fuel stations; and
  - Purpose-built rest areas for trucks.

- **Truck parking bays / roadside parking** (primarily for drivers of heavy vehicles to conduct short stops):
  - Planned roadside parking areas.

Other than regulatory requirements for operating a retail fuel station, there are no specific guidelines or practices for RRSA design or operations in Cambodia. Consequently, practices vary across the RRSA network, although in general, it can be observed that facilities do not meet international standards in terms of availability, range and quality of facilities, and roadside safety measures.

3.2 RRSA network in Cambodia

As part of this review, a survey was conducted on RRSAs in Cambodia to better understand the distribution of the network and typical services / facilities provided. A detailed survey was launched for the first time to gather data and establish a comprehensive understanding of the current RRSA landscape in Cambodia. RRSAs along the selected NRs, namely NR1, NR4, NR5 and NR6, were first identified through desktop research and subsequently ground-truthed during the observational survey. Appendix 2 presents an overview of the RRSAs observed on the four selected NRs. The ground-truthing exercise screened out many of the RRSAs identified by desktop research, due to the small size of the operations and recent closure or scaling back of operations due to the COVID-19 pandemic. In addition, interviews were conducted at selected RRSAs with users, operators / employees and other relevant stakeholders.

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11 The review was carried out in Q4, 2021, following a period of travel restrictions in Cambodia related to the COVID-19 pandemic. Many RRSAs were observed to be closed during the survey, possibly due to the effects of reduced road traffic during the pandemic period.

12 Interviews were conducted at 39 out of 117 RRSAs encountered along the selected NRs.
Based on the observational survey, RRSAs can be found at various locations along the NRs, such as villages or tourist spots, nearby factories, or urban centres of population, with a range of different services being provided. However, many are small in size, with only two major RRSAs observed, both of which were closed at the time of the survey. The locations of RRSAs identified during the observational survey are depicted on Figure 1 Error! Reference source not found. below.

The survey report prepared as part of this study includes the findings and data gathered in detail. Key focus areas of the survey include:

- Quantity and location of RRSAs and the distance between RRSAs;
- Existing facilities available;
- User needs and preferences;
- Frequency of usage and level of financial spending; and
- Recommendations for improvements.

Appendix 3 presents the summary of findings from the RRSA survey.
Figure 5. Locations of RRSAs surveyed, with RRSA clusters highlighted in red
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While the RRSA locations appeared to be more evenly distributed along NR1 and NR4, RRSAs along NR5 and NR6 were observed to be located in clusters, e.g., two or more retail fuel stations along a short stretch of road, with nearby shops and restaurants catering to passing traffic.

Overall, most of the RRSAs observed were minor, i.e., designed for shorter rest breaks. Figure 6. Purpose-built RRSA on NR5 (closed during the observational survey), with a variety of facilities in the main building (left photo) and parking for heavy and light vehicles (right photo) below shows the two major RRSAs that were observed to be closed along NR5.

Figure 6. Purpose-built RRSA on NR5 (closed during the observational survey), with a variety of facilities in the main building (left photo) and parking for heavy and light vehicles (right photo)

![Images of purpose-built RRSA on NR5](image)

Across all the NRs, there was a lack of purpose-built rest areas for trucks, and a number of hauliers were observed to be stopping along the roadside during the observational survey.

Figure 7. Interviews with haulier drivers who had stopped to rest along the roadside

![Images of interviews with haulier drivers](image)

The reasons for the popularity of certain RRSAs vary among the types of transient road users and across the NRs. For example, on NR4, the popular ‘Grandmother Mao’ stopping point (as depicted in Figure 8) is located at a place of worship with nearby facilities catering to passing traffic. The RRSA at this location comprises a stretch of facilities along the roadside, including retail fuel stations, cafes / restaurants and shops. While passing traffic utilises a road layby area for parking, no demarcated, safe parking lots are available. At other locations along NR4, hauliers typically stop and rest on the roadside.
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Figure 8. “Grandmother Mao” stopping point with various facilities and layby parking

In contrast to NR4, where hauliers stop mainly along the roadside, a popular stopping point for hauliers along NR1 comprises a large off-road open space adjacent to an animal food factory at Stueng Village (note that this land is not defined as an RRSA). The space is used by both hauliers servicing the factory as well as others passing HGVs along the NR. The preferred RRSAs for passenger cars and taxis on NR1 are typically fuel stations. These are generally unsuitable for hauliers to stop at, given the lack of parking for HGVs.

Figure 9. Typical fuel station (left) versus vacant land used as a truck stop along NR1 at Stueng Village (right)

In general, the survey respondents appeared to be largely satisfied with the current level of RRSA provision (in terms of the quantity of and intervals between formal rest stops) in urban areas. However, respondents indicated that the RRSAs are lacking in terms of quality of the facilities and road safety aspects and inadequate coverage of RRSAs in rural areas. Key findings from the survey are set out in the following table.

Table 4. Summary of key issues related to the current network

<table>
<thead>
<tr>
<th>Issue</th>
<th>Current provisions and recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network</td>
<td></td>
</tr>
</tbody>
</table>
3.3 Service provisions at RRSAs

The survey has established that there is an existing network of RRSAs in Cambodia providing a range of facilities/services, such as rest areas, toilets, vehicle parking areas for cars and heavy vehicles, cafes and restaurants, shops and vendors, fuel pumps and filling stations, and accommodation.

Table 5. Current and emerging RRSA services

<table>
<thead>
<tr>
<th>Typical existing services</th>
<th>Emerging services encountered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services that are typically encountered at RRSAs:</td>
<td>Services that are primarily at purpose-built RRSAs or modern retail fuel stations:</td>
</tr>
<tr>
<td>➤ Fuel station</td>
<td>➤ Fast-food outlets, on-the-go style cafes</td>
</tr>
<tr>
<td>➤ Toilet facilities</td>
<td>➤ Public telephone or internet connection</td>
</tr>
<tr>
<td>➤ Car parking space</td>
<td>➤ Services such as bank/Automated Teller Machine (ATM)</td>
</tr>
<tr>
<td>➤ Food and drink retail</td>
<td>➤ HGV parking space (purpose-built RRSAs only)</td>
</tr>
<tr>
<td>➤ Restaurants</td>
<td></td>
</tr>
</tbody>
</table>

Based on the survey observations, the private sector tends to develop retail fuel stations serving the private vehicle market. Retail fuel stations, particularly those of branded networks, tend to follow standardised layouts on relatively limited land areas, with a lack of HGV access, egress, fuel filling or
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resting areas. Pavement loading capacity at these stations are also not designed for HGVs.

RRSAs encountered along the four NRs surveyed are categorised as follows:

Table 6. Categories of RRSAs encountered during the observational survey

<table>
<thead>
<tr>
<th>Main Purpose</th>
<th>Description of RRSA</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Major</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primarily utilized for long rest breaks, offering a range of facilities and separate parking areas for heavy and light vehicles</td>
<td>Purpose Built RRSA</td>
<td>▶ Two such RRSAs were observed, both of which were closed during the observational survey; ▶ Constructed at suitable locations, potentially as part of road improvement projects.</td>
</tr>
<tr>
<td><strong>Minor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primarily utilised for shorter rest breaks, at a minimum providing sufficient parking space for both heavy and light vehicles</td>
<td>Mixed Services – typically retail fuel stations with other nearby facilities</td>
<td>▶ The most common type of RRSA observed, and gaining popularity among road users; ▶ Operated by private owners; ▶ Most cater to smaller vehicles only; HGV parking typically not provided or is limited.</td>
</tr>
<tr>
<td></td>
<td>Restaurants with large parking areas – often providing incentives for buses to stop</td>
<td>▶ Many located near popular tourist destinations such as Siem Reap; ▶ The facilities are generally clean and better maintained compared with other minor RRSAs.</td>
</tr>
<tr>
<td></td>
<td>Retail fuel Station - standalone</td>
<td>▶ Typically very small with limited facilities and few customers; ▶ Many were closed during the Covid-19 pandemic.</td>
</tr>
<tr>
<td></td>
<td>Purpose-built HGV Parking/ Rest Area</td>
<td>▶ None encountered</td>
</tr>
<tr>
<td><strong>Truck Parking Bays / Roadside Parking</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primarily for drivers of heavy vehicles to conduct short stops</td>
<td>Planned Roadside Parking Areas</td>
<td>▶ Only one encountered, opposite the Grandmother Mao stopping point. ▶ Lacking in road safety measures such as signage, demarcation and safe road crossing.</td>
</tr>
</tbody>
</table>

RRSA provision for HGVs

In general, there is a lack of provisions at existing RRSAs suitable for the use of hauliers. During the surveys, it was observed that HGVs parked along the roadside at various stretches of the NRs.

▶ Most of the NRs have very few RRSAs with designated HGV parking. In addition, those with HGV parking typically allocate only a few spaces for hauliers due to the large vehicle size;
▶ Several RRSA clusters were observed to have only a few parking spaces that are suitable for large vehicles (per cluster);
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Some RRSAs with designated HGV parking lots are close to urban areas, particularly at the Phnom Penh conurbation; hauliers commencing their trip from Phnom Penh are unlikely to stop at these RRSAs for rest breaks.

Demand for RRSA services

User needs and preferences, based on the survey findings, are summarised as follows:

- The main purposes of stopping at RRSAs are toilet facilities, food and beverage (F&B), rest, and fuel, which are common for both hauliers and other transient road users;
- Improved basic services at existing RRSAs, such as better toilet facilities and more food and beverage stalls, ranked highest in desired outcomes;
- There is a strong preference for RRSAs with branded retail fuel stations with toilets, shops and a variety of co-located facilities; and
- Most transient users indicated a willingness to use additional paid services if available.

Safety concerns

While the majority of male survey respondents did not indicate any significant safety concerns, over half of female respondents expressed that they had concerns over safety during both daytime and nighttime. The two key areas of concern are roadside safety (risk of traffic accidents) and personal safety (theft). Bus and haulier companies also cited roadside safety as a concern. Given that Cambodia’s road transport fatality rate is high\(^{13}\), initiatives to enhance road safety necessitate a consideration of the services required to support road users, including RRSAs.

Observations related to road safety aspects of current RRSAs are summarized as follows:

- Limited safe stopping points (especially for hauliers) and passengers to rest and recharge through dedicated facilities and improved amenities;
- Limited signage or attractive facilities to encourage frequent breaks during the journey, thereby reducing the risk of driver-fatigue related accidents; and
- Lack of demarcation of parking spaces pose additional traffic safety concerns.

During discussions in April 2022, MPWT indicated that road safety is a key government priority. Road accident fatality makes up the largest chunk of the economic cost of road traffic accidents, which was estimated to cost Cambodia USD 466.8m per annum.\(^{14}\) The National Road Safety Committee strives to implement road safety programs across Cambodia to address the issue. The development of RRSAs with appropriate safety provisions, particularly those with adequate HGV parking provisions, would contribute to these efforts.

Key takeaways

While modern, integrated RRSA can have a range of facilities, the short-term focus in Cambodia should be to ensure adequate provisions of essential services, such as toilets and F&B facilities.

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\(^{13}\) WHO estimated the fatality rate/100,000 population for Cambodia to be 17.8 in 2016, Road Safety Country Profile: Cambodia, GRSF, 2020, [https://www.roadsafetyfacility.org/country/cambodia](https://www.roadsafetyfacility.org/country/cambodia)

The current network also lacks parking provisions for HGVs, which poses severe risks to road safety. In addition, user feedback suggests that the subnational and rural roads do not have adequate facilities with reasonable spacing to service the needs of road users.

Market-oriented RRSA facilities could be developed with targeted services for different user groups based on the potential user profiles, such as certain branded retail fuels which are popular for each type of road user. The network should provide a mix of major RRSSAs, minor RRSSAs and truck parking bays depending on user needs. In addition, an independent quality award scheme to recognize good service standards and promote good practices could be considered as a low-cost means of encouraging and recognising improvements in the RRSA sector.

As RRSSAs are developed, there should be an ongoing review of provisions and consideration of ways to improve safety for all road users, encourage high standards in the welfare of drivers, increase competition and improve service innovations.

### 3.4 Legal framework for PPP projects

**Changes in the laws regulating PPP projects in Cambodia**

The RGC promulgated the Law on Public Private Partnership on 18 November 2021 (the “PPP Law”) to substitute the Law on Concessions, 2007 (LOC), which primarily regulated PPP projects in Cambodia. However, the PPP Law is not a major departure from the LOC.

The PPP Law aims to address and consolidate issues that were not covered or covered only to a limited extent under the LOC. For example, unsolicited proposals (USP) that were not particularly regulated in the LOC or other published regulations are now included in the PPP Law. Further, the PPP Law refers to PPP projects rather than concessions, which suggests a potentially wider range of risk allocations may now be permissible.

The key features of the PPP Law are enumerated in the table below:

<table>
<thead>
<tr>
<th>Key features of the PPP Law</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outlines the project cycle and involvement of the RGC agencies in every step</td>
</tr>
<tr>
<td>Outlines the type of financial support that the RGC may provide to private partners</td>
</tr>
<tr>
<td>Provides guidelines on the assets that can be used by the private partners as collateral to raise finance for the project</td>
</tr>
<tr>
<td>Allows private partner to apply for investment incentives as per the investment laws</td>
</tr>
<tr>
<td>Provides guidelines on purchase of foreign currency from local banking system to pay overseas suppliers, or repay interest to overseas lenders or other capital payments offshore in connection with PPP projects</td>
</tr>
</tbody>
</table>

The RGC also promulgated a new Law on Investment on 15 October 2021 (LOI) which is intended to substitute the Law on Investment, 1994. The new LOI aims to, among other things, do the following:

- ease the process of investment application as a first step towards streamlining the overall investment licensing process. For example, it introduces the option of e-filing of investment applications to potentially reduce the administrative hassles involved with filing applications in person;
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- introduce new technological implements such as a QR code built into the investment registration certificate – which an investor can use to apply for other necessary permits without having to resubmit documents for information already contained in the QR code;
- introduce a list of specific sectors of the economy where private investment will be eligible to enjoy certain incentives listed thereunder; and
- increase investor confidence by providing a detailed outline of various investment incentives and guarantees.

In terms of substance, both the PPP Law and the new LOI are more advanced than their predecessors and aim to set a modern foundation for private investments in Cambodia.

3.5 Legal framework for RRSA projects

The following are some of the key observations from the review of the legal and regulatory landscape for RRSA projects in Cambodia:

- The general laws and regulations are reasonably robust and aligned with similar legal regimes in this region.
- There is no separate legal and regulatory regime that applies to RRSA businesses specifically; legislations that regulate the licensing and operation of businesses generally apply equally to businesses within an RRSA.
- There is scope to make qualitative supplements in the laws currently used to regulate RRSAs (and other related aspects) to attract private investments to develop modern RRSAs and enhance user experience.

This section discusses the potential qualitative supplements in laws (and other aspects) pertaining to four key areas of the RRSA framework such as (i) land acquisition; (ii) road infrastructure / right of way and access; (iii) business operations in RRSA – permitted types, operating licences and (iv) environmental permits, community engagement and gender inclusivity, for the consideration of the RGC. The recommendations are not intended to suggest major regulatory reform or overhaul but to provide directional guidance to clarify the market on MPWT’s expectations and strategy for the sector.

Land acquisition

In Cambodia, privately owned land may be acquired by way of expropriation or agreement with the private landowner only for public purposes. The expropriation process can be commenced after the landowner has been compensated in advance. The government shall estimate the compensation amount by relying on the formula provided in the law.

The Expropriation Law, 2010 (Expropriation Law) lists the type of public infrastructure projects (which includes ‘roads and accompanying infrastructure’) for which private land may be expropriated.

Post-acquisition processes, if any required, such as land use conversion, are also regulated. For example, the Land Law, 2001 and the regulations thereunder regulate the reclassification of land and conversion of the purpose of land use (i.e., from agricultural land to constructible land) as well as long term lease of land (from 15 years up to 50 years). In addition, foreign investors are only permitted to enjoy leasehold rights to the land but not its ownership.

It is understood that these laws do not apply specifically to RRSA projects. Furthermore, it is not clear whether the rights of the private investor to the land is absolute, given that the private landowner has
the right to contest the expropriation even after receiving compensation from the RGC in accordance with the law.

Internationally, in countries such as Vietnam, Malaysia, New Zealand, it is seen that there are clear-cut and uniform legal frameworks for acquiring land for constructing roadside amenities. The legal framework in these countries mentions, among other things

► the grounds on which a government may acquire land (which include the development of roadside infrastructure such as service areas) and
► the mode of acquisition (whether by expropriation or agreement); and
► the type of rights (ownership or possessory e.g., land use) that foreign investors may have on such land.

Key takeaways:

Cambodia already has substantial legislation with respect to land acquisition for public purpose projects. These laws may be applied, in the short term, to RRSA projects already committed by the RGC – for example, the Expropriation Law may be used to regulate land acquisition for RRSA projects.

However, to ensure clarity to investors, it would be beneficial if the RGC expanded the ambit of the existing laws to cover RRSA projects as well. This could be achieved by MPWT in the medium to long-term through departmental circulars or notifications, or explanatory notes clarifying the process of acquiring land (including rights of way) for RRSA development. These circulars should outline the practice and procedures of land acquisition and investor rights to provide more certainty and confidence to investors and private partners in RRSA projects.

Road infrastructure / right of way and access

The Law on Roads, 2014 (Roads Law) regulates road networks and infrastructure in Cambodia.

The term ‘Road Service Station’ as defined under the Roads Law includes ‘petrol stations’, ‘rest areas’, and the term ‘Rest Area’ includes ‘hotels’, ‘restaurants’, ‘toilets’ and so on.

The Roads Law regulates, among other things, the following aspects of road infrastructure in Cambodia:

► prescribing the distance from the road alignment where the ‘Road Service Station’ and ‘Rest Areas’ may be constructed to ensure the safety of traffic movement along the road;
► setting restrictions regarding the construction of permanent structures in the right of way; and
► mandating that construction of any entry or exit into and out of the road would require prior permission from the road authorities.

The Roads Law sets the background for further regulation of RRSAs. A draft decree on technical standards and provisions regarding vehicle parking stations and RRSA services is currently under review by the MPWT and will likely supplement the Roads Law in the future when it is promulgated.

However, the Roads Law in the form it is currently drafted does not specify regulation of certain critical aspects of RRSA such as its design and relevant permit requirements. Investors might have to rely
substantially on certain undocumented practices to obtain permits and licenses to operate an RRSA.

Internationally, in countries such as the UK, New Zealand and India, it is seen that regulation of road networks includes legislation for the set-up of RRSAs. They authorise road management authorities to establish RRSAs to benefit the traffic utilising the road infrastructure. Further, these laws provide

- detailed rules on the type of services that may be provided in such areas;
- guidance on RRSA design, construction and accessibility based on the target traffic profile; and
- specific requirements for RRSA developers to apply for and obtain access-related permits from the relevant road management authorities.

**Key takeaways:**

While the Roads Law sets the background for regulating RRSAs, there is still a potential to address certain critical elements in the law which are usually regulated in other countries. These elements, as described below, can be developed by the RGC in a phased manner.

In the short term, the RGC could contractually agree on the following aspects with the private party implementing the project in the PPP contract or O&M contract:

- Demarcation of areas for various services, such as hotels, restaurants, fuel stations, parking areas in an integrated RRSA setup;
- Limiting the distance between consecutive RRSAs, to ensure that there is adequate provision for road users along the entire road alignment; and
- Clearly setting out the process for obtaining access permits.

However, it would be beneficial for investors if the RGC were to standardize the above aspects by considering the development of road networks and traffic volume in the near future. This could be achieved by MPWT in the medium to long term by publishing departmental circulars or notifications or explanatory notes describing the above aspects in substantial detail.

**Business operations in RRSA – permitted types, operating licences**

The setting up and licensing of businesses in Cambodia is generally regulated under several legislations.

For example, the construction of infrastructure in Cambodia is regulated under the Construction Law, 2019 and the sub-decrees enacted in connection therewith. Under this law, a licensed builder should obtain several permits during the lifetime of the construction, such as a construction permit, a site opening permit, an ongoing work certification, an occupancy certificate and so on. There are sub-decrees that set out the responsible authority for issuing permits based on specifications on the size and area of operation of a business. An investor thus needs to be cautious about such regulations to be able to apply for and obtain relevant licenses in alignment with its business objectives and timelines.

The Roads Law stipulates the type of businesses that are permitted to be set up in an RRSA. For the purpose of this report, we have looked into three categories of businesses such as: (i) fuel oil and gas stations; (ii) retail outlets; and (iii) hotels, restaurants and lodging premises.

Each of the above businesses requires specific licenses to operate anywhere in Cambodia, including
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an RRSA. The list of relevant licenses is provided in the following table:

### Table 8. Required permits by type of business

<table>
<thead>
<tr>
<th>Type of business</th>
<th>Required permits</th>
</tr>
</thead>
</table>
| Fuel oil and gas stations | ▶ Access permit from the MPWT / Ministry of Rural Development / Provincial or city level governments;  
▶ Construction permit from the MLMUPC / Provincial/District authority; and  
▶ Fuel station operating certificate and a technical safety certificate issued by the Ministry of Mines and Energy. |
| Retail outlets, hotels, restaurants and lodging premises | ▶ Access permit from the MPWT / Ministry of Rural Development / Provincial or city level governments;  
▶ Construction permit from the MLMUPC / Provincial / District authority;  
▶ Hotel/restaurant licence from the Ministry of Tourism;  
▶ For hotels, approval of the hotel rating classification, reflecting the quality and amenities of the hotel;  
▶ Fire prevention and firefighting certificate issued by the Ministry of Interior; and  
▶ Food hygiene certificate for restaurants issued by the Ministry of Health. |

Internationally, in countries such as Australia, the UK and India, it is seen that such countries have

▶ specific permit requirements for storage of fuel in dispensing premises;  
▶ specific laws on handling of hazardous substances;  
▶ licensing requirements for hotels and similar accommodations; and  
▶ standards of hygiene to be maintained by restaurants.

These laws apply to fuel stations, restaurants and lodging premises established in RRSAs in these countries with additions made to the scope of their coverage by local level government institutions.

**Key takeaways:**

The regulation of licensing aspects for businesses is currently scattered across several legislations. As an effort to encourage private investment, investors would welcome a single set of guidelines on the licensing and allied aspects for businesses in an RRSA. Such guidelines should provide the market with a broad process to be a starting point without placing the obligation of ensuring completeness and/or necessitating the RGC to undertake any legal reform.

In the short term, the RGC could confirm (via a circular or explanatory notes or otherwise) that the laws that generally apply to businesses outside of RRSAs also apply to businesses within RRSAs.

However, apart from licensing aspects, it would be beneficial for investors if the RGC were to summarise the applicable laws and specific requirements for investors intending to invest in RRSA projects. This could be achieved by MPWT in the medium to long term by way of publishing departmental circulars or notifications or explanatory notes essentially summarizing general and specific requirements that investors may need to comply with for setting up their business in an RRSA.

**Environmental permits and community engagement**
Cambodia currently has an environment licensing framework. The laws set out which businesses are required to carry out an initial Environment Impact Assessment (EIA) and which are required to perform a full EIA. The relevant sub-decrees stipulate specifications for businesses that make them eligible for the applicable type of EIA procedure.

The laws also place obligations on the project owner to obtain additional permits pertaining to the discharge of pollutants from the property. For example, the discharge or transport of wastewater from any sources of pollution such as transport facilities or service areas is subject to a permit from the Ministry of Environment (MOE).

There are laws in Cambodia that regulate community participation prior to implementing a project. For example, the Expropriation Law sets out the legal obligation of the government to consult the landowners and other persons having rights to the land prior to expropriation for public purpose projects. In addition, it provides avenues for landowners to obstruct the expropriation on several grounds, including non-payment or inadequate compensation. This is pursuant to the individual and collective right to own property guaranteed by the Constitution of Cambodia.

The laws on environment also regulate this aspect. For example, upon public request, the MOE is required to provide information on its activities upon request by the public to that effect.

In terms of gender inclusivity, the Cambodian legal landscape is still evolving. The Constitution of Cambodia protects the rights of women and imposes certain duties on the state in that regard as follows:

► It specifically protects the rights of women, such as their rights to equality in opportunity, right to equal pay for equal work, right against discrimination, right against exploitation in employment and so on.

► It imposes certain duties on the State towards women, such as providing employment opportunities to women, especially those living in rural areas who do not have adequate financial support.

However, at present, no law specifically relates to or regulates their participation in public projects.

Internationally, in countries such as the UK, New Zealand, and India, it is seen that there is a robust environmental licensing landscape for infrastructure projects in general. The licence requirements are regulated by a mix of legislation and policy guidelines in these countries.

For community engagement, these countries also have substantive laws and regulations that set out the requirements for project proponents to confer with stakeholders during the initial stages of their projects to encourage overall economic development while minimising adverse social impacts. Furthermore, these countries are members of international conventions on the rights of women and the prevention of discrimination, including the UN’s Sustainable Development Goals. Therefore, they have issued policy guidelines on gender-inclusive economic growth to honour their commitment under these conventions.
Key takeaways:

Cambodia has an environmental licensing regime. However, there is scope to make a few qualitative supplements aimed at businesses in the RRSA. In the short term, the RGC could clarify by circulars / guidelines / explanatory notes or otherwise if the current environment legislations apply to businesses in an RRSA and if any additional permits would be required.

In the medium to long term, the RGC should consider clarifying certain aspects in this regard for investor clarity. For example, this can be achieved by the relevant department of the Ministry of Environment by issuing certain explanatory guidelines or circulars or notifications with respect to environmental permitting requirements to provide better clarity over whether businesses in RRSA require any additional environmental clearances.

For gender inclusivity aspects in road infrastructure projects, the Ministry of Women’s Affairs may issue policy guidelines jointly with the MPWT to set out the requirements for considering the potential impacts of road infrastructure projects on women and other vulnerable groups and develop action plans to reduce any adverse impacts on such groups.

Some of the requirements need not necessarily be implemented through the law, but can also be incorporated through technical requirements in the tender documents developed for the procurement of RRSAs.

In summary, the current legal and regulatory framework permits the development of RRSAs both as public investment and through private sector participation. RRSA development is governed by various laws, as discussed above. Based on a review of global practices for RRSA development, findings show that while there are numerous examples of successful RRSA models, there are no standard recommended frameworks or desired typology for RRSA development. RRAs have been developed considering the specific needs of travellers, commercial opportunities available and relevant cultural and local practices and sensitivities across the different countries. A broad comparison of prevailing policies across is included in Appendix 8.

To encourage private sector participation and as part of MPWT’s concerted effort to commercially develop RRSAs, the RGC could consider developing a set of guidelines / explanatory notes to provide the overarching framework for RRSA development, including high-level process and procedures for RRSA approval and permits, key requirements around environmental and social, and applicable minimum standards of performance concerning food and safety, fuel etc.
Section 4

Considerations for RRSA development
4. Considerations for RRSA development

4.1 Key commercial considerations

The commercial structure of an RRSA project is dependent on several factors, such as scope of services offered, allocation of roles and responsibilities between government and private sector, and economic and financial feasibility, all of which eventually feed into the risk allocation and implementation model. The overall vision for the sector, government budgetary priorities and market interest should also inform the commercial considerations.

Figure 10. Key commercial considerations behind RRSA development

The volume and mix of traffic passing an RRSA site, and the spending capacity / propensity of that traffic are key factors driving the technical design and economic / financial viability of an RRSA. For example, an RRSA targeting hauliers should be focused on having adequate facilities for HGVs like large parking bays, toilets, and resting areas. On the other hand, an RRSA targeting passenger cars should be designed to offer both basic facilities (e.g., restrooms, vending machines) and value-added services (e.g., restaurants, souvenir shops). Similarly, the users’ capacity to pay will drive the potential revenue that can be generated at an RRSA, and, consequently, the inherent commercial viability of the project. The underlying commercial potential at an RRSA will drive the choice of the economic model and commercial structure for an RRSA project.

While stand-alone analysis should be done considering the feasibility and project structure for an individual RRSA project, sector-wide considerations and planning are necessary to ensure a consistent approach to risk allocation, roles and responsibilities, and technical requirements.

The volume and mix of traffic will also influence other key determinants of the economic value of a given RRSA project, such as the potential impact on road safety. For example, traffic accidents involving motorcycles and bicycles have a higher likelihood of fatality. Hence roads with a higher proportion of such vehicles could reap greater socio-economic benefits from enhanced road safety measures. Also, amongst the different types of national roads, the number of road traffic accidents is highest along the one-digit National Roads, which were built especially for transporting goods between the capital, borders, and port, and suffer from congestion and inadequate maintenance.
Beyond these commercial and road safety benefits, RRSAs can have knock-on effects on the community, such as enhancing tourism potential, promoting local culture, and revitalising the local community. Hence, an analysis of non-financial benefits is critical to understanding the economic value proposition of RRSAs.

**Case study: The evolution of Japan’s “Michi no Eki” as community hubs**

- Japan launched its network of RRSAs known as michi no eki in 1993. By 2019, there were more than 1,150 stops around the country.
- In 2015, michi no eki attracted 210 million visitors and generated JPY 210 billion (USD 1.75 billion) in sales.
- Besides providing motorist services, such as free 24-hour parking, restrooms, and rest facilities, michi no eki also include popular features such as markets offering regional goods and restaurants serving dishes made from locally sourced ingredients. In addition, locals and visitors buy fresh fruits, vegetables, and seafood direct from producers.
- Often located in rural areas with dwindling populations, the michi no eki also serve as important community hubs for local residents, including offering local residents information on medical and administrative services and assisting during natural disasters by providing reports on road closures and relief services.
- In addition, michi no eki are convenient stop-offs for passing motorists to learn about what to do and see in an area. This has led to increased investment by operators in leisure services. In 2018, 82 michi no eki offered overnight accommodations and 143 had hot spring spas.

Other business risks include competing facilities within close proximity. According to a study by the United States NATSO (previously the National Association of Truck Stop Operators) and Virginia Tech Transportation Institute in 2011, the commercialisation of RRSAs in the 611 counties with non-commercial RRSAs could potentially lead to a decrease in annual sales of USD 55 billion for existing gas, restaurant and truck service businesses. Hence, in assessing the suitability of sites for RRSAs, the RGC should also consider the potential impact on local communities, particularly small businesses subsisting on providing services to motorists and truck drivers. Further, the RGC should consider providing contractual protections / non-compete clauses to private operators to protect them from the risk of competing facilities. Section 3.2 has proposed a suggested spacing of 50-80 kms between two RRSAs to limit the risk of competing facilities.

**Case Study: Shuttering of traditional RRSA in Florida**

In Florida, the Department of Transportation tore down a traditional RRSA on a local road off I-75 in Punta Gorda in 2015 because it didn’t get much use. Travelers were choosing instead to pull over at a truck stop, gasoline station and fast-food chains off nearby exits. The department had also built a new, superior rest area the year before about 100 miles away on I-75.

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Given these considerations, this section discusses potential implementation models for developing RRSAs with the involvement of the private sector.

The World Bank and the consultant team met with MPWT and MEF to present the findings of the project and gather the RGC’s views on the commercial considerations for RRSA development.

The directions of MPWT and MEF inform the commercial considerations and drive the decision-making on the implementation model. Broadly, the guidance from MPWT is briefly summarized below:

- Any implementation model should work within the current legal framework and changes in legal framework may not be possible in the short term;
- It is desirable for the private sector to assume most of the responsibility and/or risk for RRSA development. The RGC has limited capacity to assume a significant risk and financial burden from RRSA projects. Hence privately led projects are ideal; and
- Any project structure proposed should be compliant with the new PPP Law and associated framework.

### 4.2 Commercial implementation models

A range of implementation options can be considered for RRSA development in Cambodia, differentiated primarily by the treatment of revenue risk and financing responsibility. These implementation models proposed are conceptualised primarily by the consultant for this study. RRSAs as a sector is not as mature for PPP projects compared to more traditional sectors like roads, airports, and other hard infrastructure. Hence, there are limited international precedents / case studies for each model.

<table>
<thead>
<tr>
<th>Risk/ model</th>
<th>Concession model</th>
<th>Availability payment model</th>
<th>Upgrade of existing private RRSAs</th>
<th>Co-developed with other infrastructure projects</th>
<th>EPC + O&amp;M model</th>
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<tbody>
<tr>
<td>Design Construction</td>
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<td>Operations</td>
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<td>Public or Private (through a service contract)</td>
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<td>Finance</td>
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<td>Revenue</td>
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</table>
The above models may be implemented through public tenders, solicited or unsolicited proposals considering project-specific factors. The PPP Law allows for various implementation structures and provides for several procurement models covering the entire spectrum of solicited and unsolicited proposals. When considering RRSA projects, the RGC should follow the process outlined in the PPP Law and SOPs, which set out a multi-step process for project identification, appraisal, and procurement. Each of the models discussed below could be implemented under the provisions of the PPP Law, subject to a viable business case and value for money assessment. Inferences based on discussions with MPWT are also incorporated in the following sections to reflect the RGC’s current opinions and preferences.

4.2.1 Implementation model 1: RRSA developed on a concession-basis

Under this model,

- The Authority identifies the land parcels for RRSA development and leases them to a private party for RRSA development under a long-term lease;
- The private party assumes the entire responsibility to design, build, finance, operate and maintain the RRSA. (There could be some variations with some funding support from the government if the project is not viable on a standalone basis);
- The private party also bears the responsibility for revenue risk and collection; and
- The Authority would be compensated through payments from the private party. The payments could be structured in several ways ranging from a fixed annual lease, lease payments with escalations, additional payments like an upfront payment for the site and/or revenue sharing over a threshold, etc.

Case study: RRSA development Thailand

The rest areas for the Bang Pa-in – Nakhon Ratchasima Intercity Motorway, Bang Yai – Kanchanaburi Intercity Motorway, Intercity Motorway No.7, Chon Buri – Pattaya Intercity Motorway and Nakhon Pathom – Cha'am Intercity Motorway are deemed as high priority PPP
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Projects, with contract terms of 30 years.

- The eight sites of rest areas on the motorway include five rest stops, two service areas and one service centre.

- Under the Build – Transfer – Operate (BTO) model, the Government will be responsible for land rights and main route construction, while the private party will design, build, operate and maintain the rest areas. The private party will also have ownership of the assets and bear the revenue risk of the project.

Under this model, RGC’s primary contribution is the land for the project. The private sector bears the entire risk of development. The Authority also has the potential to earn revenues from the concession through a lease revenue and/or a revenue share. Given the risk transfer, such a model could be successful only in scenarios with a high underlying commercial potential.

Case Study: Connecticut Service Plazas (United States)

- Originally built in the 1940s and 1950s, Connecticut’s service plazas had no significant capital investment in 25 years.

- In December 2009, Carlyle Group and the parent company of SUBWAY Restaurants were awarded the Design-Build-Finance-Operate-Maintain (DBFOM) concession to redevelop, operate and maintain Connecticut’s 23 highway service areas over a 35-year period.

- Over the initial redevelopment period of five years, three of the existing service plazas were replaced entirely, and the remaining 20 underwent an array of renovations, costing the private operator an estimated amount of USD 178 million.

- The project generated USD 500 million in economic benefits over the life of the concession for the State of Connecticut and saved Connecticut more than USD 150 million in construction costs. It also created 375 construction and permanent jobs.

As land is identified and provided by the Authority, the RGC should adopt a solicited procurement approach through qualification and a detailed tender process. However, if sufficient market interest is not generated, or if there are limited participants in the tender process, a direct negotiation approach could be adopted per the provisions of the PPP Law. However, there should be sufficient market interest and risk appetite to implement such a concession-type model. Given that Cambodia is still in the initial stages of implementing its new PPP framework, such a model may be quite challenging for both implementing agencies and investors. However, this model could be explored when the Cambodia investor market matures in tandem with greater economic prosperity over the medium term.

4.2.2 Implementation model 2: Availability payment-based structure

Under this model,

- The Authority identifies the land parcels for RRSA development and leases it to a private party for
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RRSA development under a long-term lease;
- The private party assumes the responsibility to design, build, finance, operate and maintain the RRSA. However, unlike model 1, the Authority takes the revenues from the project and therefore takes the demand risk / revenue risk. The private party receives an availability payment for operating the RRSA at desired performance levels; and
- An availability-based model would be particularly useful for roads with limited or unpredictable traffic but with a strong socio-economic need for an RRSA. As such an availability payment-based model is less risky for the private sector compared to model 1.

Considering that the PPP sector is in the early stages of development in Cambodia, the market may prefer a model where the Authority takes the demand risk. Such projects may be bid more competitively and could have a lower cost of capital than projects with demand risk. Before launching specific projects, RGC may carry out detailed market sounding and / or expression of interest rounds to test market appetite on demand risk.

As the Authority bears the revenue risk for the project, the RGC should adopt a solicited procurement approach through qualification and a detailed tender process. However, if sufficient market interest is not generated, or if there are limited participants in the tender process, a direct negotiation approach could be adopted per the provisions of the PPP Law.

Unlike Implementation Model 1, the revenue generation and maximisation risk lies with the Authority and may not be the preferred risk allocation from the Authority’s point of view. Discussions with MPWT indicate that the government is not inclined to assume significant responsibility over revenue risk and would prefer structures that provide greater risk / responsibility transfer to the private sector. Hence this implementation model may not be a suitable fit in the short term.

4.2.3 Implementation model 3: Upgrading of existing private RRSAs

Under this model,
- Existing facilities such as fuel stations would be upgraded for services required or desired by the government, with the development led by the private sector;
- The Authority’s role is limited to enforcing regulatory standards, providing access to the RRSA, other trunk infrastructure and ensuring that competing facilities are not developed within close proximity of the RRSA; and
- From a risk allocation perspective, the private sector assumes the majority of the risks around development and operations.

Case study: RRSA operators in the US
- Pilot Flying J is a North American chain that manages truck stops across the US and Canada. They provide parking, truck washes, public laundry, showers, game rooms, payphones, ATMs, restaurants, fast-food outlets, and lounges with big-screen televisions etc. In addition, such private operators routinely undertake refurbishments and upgrades for their facilities. Pilot Flying J currently operates and manages 765 RRSAs across the United States and Canada.
Given that this model involves the development / upgrade of existing RRSAs, it is likely that the development of such RRSAs would be on an unsolicited basis, with the existing RRSA sponsor initiating the project and bearing the majority of the technical-commercial risks from development. On top of minimising fiscal outlay from the government, this approach is also relatively easy to implement within the existing regulatory framework. However, it is dependent on the level of market interest from existing private operators to commit additional investment. Discussions with MPWT indicate that the government prefers such private sector-led models where the private sector assumes greater initiative and responsibility.

There is an extensive network of retail fueler stations across Cambodia (see details in Appendix 4). Commonly encountered along the NRs surveyed, it was observed that popular stopping areas often
had a number of retail fuel stations in close proximity to each other, such as three or four stations along a 500 m to 1 km stretch of road. Many of these retail fuel brands have announced plans to extend their network in Cambodia. For example, Chevron has announced plans to open up to 100 new Caltex service stations in Cambodia over the coming years. Through timely and early engagement, the RGC could encourage the development of RRSAs co-located with these fuel stations. However, a potential challenge of this model is that the Authority has limited ability to govern technical standards and enforce requirements, given that the project would be fully developed and funded by the private sector on their own initiative.

To ensure that RGC’s objectives with respect to road safety are met and that these RRSAs facilities adhere to a standardised set of minimum service standards, the RGC could consider the option of limiting the free development of existing RRSAs, so that further significant development is not undertaken without the government’s permission. This could also open the door to the government extracting some of the value from the private sector that is being created by the proximity to a publicly funded and managed asset.

In addition, the RGC could partner with the retail fuelers to introduce new services at some RRSAs that the private sector may consider commercially unfeasible but have socio-economic benefits, such as dedicated parking provisions for HGVs. In this case, some specific services could be contracted to the private operator under an availability payment model. The financing of any significant expenditures would need to be considered, and the implications of undertaking a sole-sourced negotiation with an existing operator would also require further evaluation. Alternatively, the RGC could also explore providing a guarantee to limit the development of competing facilities within close proximity of the RRSA in exchange for the private sector taking on less profitable facilities / services.

However, most of the country’s retail fuel stations are located in urban areas like the Phnom Penh conurbation and the NRs. The majority of branded fuel stations are designed to cater to smaller vehicles such as private cars, taxis and motorcycles and have inadequate provisions for access by HGVs. In addition, local, non-branded retail fuel stations were observed during the survey to offer lower fuel prices than the branded retail fuel stations and are thus preferred by hauliers for refuelling their HGVs. This may limit the potential of leveraging on the existing retail fuel station network to cater to the needs of this group of users.

4.2.4 Implementation model 4: Co-development of RRSAs with other infrastructure projects

Under this model,

► RRSA development is not undertaken in isolation but along with the development of other related infrastructure like the development of greenfield roads, upgrade of existing highways etc. The RRSA forms a small component of a bigger project rather than being the main subject in its own right;

► In a combined road and RRSA project, the private sector can be responsible for the design, build, finance, operations and maintenance of both the road and all RRSA assets;

► Depending on the project structure, the private party may assume partial or entire demand risk. Thus, the risk of revenue is not linked to RRSA operation alone but may be distributed across the

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21 Chevron plans to open up to 100 new Caltex service stations in Cambodia, Khmer Post Asia, 2021, https://en.khmerpostasia.com/2021/02/25/chevron-plans-to-open-up-to-100-new-caltex-service-stations-in-cambodia/
The Authority’s role is limited to enforcing regulatory standards, providing access to the RRSA, other trunk infrastructure and ensuring that competing facilities are not developed within close proximity of the RRSA.

**Case study: RRSA development in Japan**

- Expressways along with RRSAs are constructed using government funding.
- Under the PPP model, private parties are solely responsible for toll collection and O&M of the RRSAs (e.g., West Nippon Expressway Company, Central Nippon Expressway Company, and East Nippon Expressway Company). Private parties do not make a profit through toll O&M but only through the O&M of RRSA services.
- Some benefits include:
  - Enhancement of services provided at RRSAs;
  - Development of additional areas leased to the private services; and
  - Enhanced user experience.
- Risk-sharing between the private parties and Government over a lease period of 45 years.

Under this model, the RRSA forms a small component of a large project both in terms of costs and risks. The procurement model for the RRSA will follow the procurement model of the primary project component. For example, when MPWT tenders out a road development / rehabilitation project, such as upgrading Siem Reap – Ratanakiri road, the tender specifications could include the development of an RRSA along the road to address unmet demand from road users where appropriate. The risk allocation for the RRSA would hence follow the risk transfer adopted for the primary road project, and the demand risk and overall viability would be a function of the larger project considerations.

As the investor would be managing the operations and maintenance of the entire road project, including potentially collecting toll revenues, the increase in cost to develop and operate the RRSA would likely be marginal. Therefore, such an approach could de-risk the project to a certain extent on the concerns of RRSA project viability and scale, making it more attractive to the investor market than implementing an RRSA project on a stand-alone basis. However, depending on the complexity of the RRSA (e.g., services included), the developer may need to subcontract service operators for the RRSA. For example, a typical road operator/maintenance provider may not have the expertise to operate an RRSA with services like fuel stations, which may require specialist experience from a safety perspective. However, running an RRSA with basic facilities toilets, parking spaces, basic food and beverage shops is likely to be within the remit of typical road operators and could lend itself easily under a bundled structure. On the other hand, bundling fuel services under a road project could potentially result in additional costs. A typical road operator would need to subcontract a retail fuel provider to render these services. Hence careful project appraisal and feasibility should be undertaken to assess the value for money of the structure prior to procurement. Other than road projects, other relevant infrastructure projects that could benefit from the development of RRSAs include logistics hubs and SEZs, cross-border facilities and tourist facilities at ports, airports or major tourism centres.
Discussions with MPWT suggest that this model could be a good fit for Cambodia’s context, considering that improving road conditions and expanding the road network remain a priority for MPWT. The co-development approach could therefore accelerate the development of RRSAs. Road projects tend to get support and assistance from other development partners. Hence expanding the scope to include RRSA development could help the RGC benefit from leveraging the expertise of these development partners to improve the quality of project appraisal and development.

4.2.5 Implementation model 5: EPC / O&M Service contracts

Under this model,

- The Authority retains ownership and control of the development and operations of RRSAs;
- Private sector participation is limited to specific activities (such as construction and/or operations and maintenance) and governed by construction or service contracts similar to traditional procurement models;
- The contract duration under such models is expected to be shorter (typically ~5-10 years) than other implementation models discussed above; and
- The long-term financing responsibility for the development of RRSA is expected to be retained by the Authority.

Case study: RRSA development in Arizona, United States

- The Arizona Department of Transportation’s (ADOT’s) first PPP project aimed to provide enhanced facilities to travellers.
- While the ownership of the rest area facilities remained with ADOT, the O&M of 14 rest areas in Arizona was contracted under a single contract to Infrastructure Corporation of America (ICA) in 2013. The contract period was initially for five years, with the option to extend for another five years.
- Under the PPP, the private operator took on the revenue risk for the project and introduced new features such as Wi-Fi access, dog-walking areas, charging stations for electric vehicles and ATMs. ICA also implemented a sponsorship and advertising program to increase revenues. Part of the advertising revenue is also shared with ADOT. The contract excludes adding food and beverage shops within the rest areas as, under federal law, the ADOT is prohibited from adding restaurants and stores to rest area facilities.
- ADOT is guaranteed at least USD 1 million over the next ten years from revenues generated, which will go into the State Highway Fund for other transportation projects.

The RGC can follow the process it currently adopts for service contracts to adopt this model. Generally, under an EPC contract, the private party’s investment would be expected to be reimbursed through milestone payments. Where O&M is outsourced, capital investment is expected to be relatively limited, and hence the payments are expected to be linked to operations and maintenance.

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of the RRSA. Under a service contract model, the contract duration is also generally lower (typically 5-7 years) than in other implementation models (typically 10-15 years or more).

While this model is the easiest to implement, the extent of risk transfer is the least among all the models. In addition, separating the responsibilities for development and operation under different contracts would also place an additional burden on the government for RRSA development / management, which is not the RGC’s preferred position for the sector.

4.2.6 Recommendation

- In Cambodia’s context, given that there is an extensive network of existing retail fuel stations, the RGC could partner with these major retail fuel owners to expand the service offerings at the retail fuel stations and cater to the needs of road users. In addition, as many of these retail fuel owners have plans to expand their network in Cambodia, the RGC could leverage their plans to negotiate the range of facilities or services to be provided. In exchange, the RGC could facilitate access to land, permits, and associated trunk infrastructure and ensure that competing facilities are not developed within close proximity of the RRSA.

- In addition, when MPWT implements major road projects, whether greenfield or brownfield, RRSA requirements could be included as part of the contract scope. With the development of RRSA forming a small component of a bigger project, rather than being the main subject in its own right, it could improve the financial viability for the private operator. In addition, such a structure could also attract a wider pool of investors who may be inclined to only participate in projects exceeding a certain minimum investment size.

- The RGC may also explore a bundling approach, such as a certain number of RRSA s along a particular national highway, such that locations with high demand can cross-subsidize locations that may be less commercially viable (e.g., rural areas). This will minimise the need for the RGC to provide viability gap funding to incentivise the private sector to take on some of these RRSA s that may not be financially viable but are nevertheless desirable from a socio-economic standpoint.

- All the above approaches align with MPWT’s priorities and preferences and would work within the current legal framework.

4.3 Site selection for new or upgraded RRSA s

The recommended types of locations for RRSA s differ according to the user group, as set out in Table 10:

- Hauliers – close to logistics hubs, borders and at appropriate intervals along the national roads, especially strategically important routes such as Asian Highways (AHs) or NR5 or NR1;
- Local and international tourists – close to airports and at appropriate intervals along the national roads, especially strategically important routes such as Phnom Penh to Siem Reap (NR6); and
- Local drivers – close to urban areas as well as planned out along the road network.

Table 10. Summary of site selection criteria and recommendations
## Site selection for new and existing RRSAs (catering to tourists and local drivers)

- High traffic density corridors;
- Away from existing similar facilities;
- Proximity to scenic / historical / tourist spots;
- Availability of suitable land parcels for development;
- Co-location with other facilities;
- Potential to co-locate renewable power sources;
- Potential to co-locate EV charging points, etc.

## Site selection for new RRSAs (catering to hauliers)

- Availability of sufficient land;
- High traffic density corridors;
- Planning of necessary land acquisitions, including sufficient space to minimise the risk of future encroachment into buffer land and community spread;
- Long-term planning for larger freight and vehicular movements in future years, including the safeguarding of land to support future RRSA developments;
- Balancing of the network across both urban areas (potentially higher demand) as well as outside of urban areas, at a reasonable buffer distance from local communities;
- Integrating the network with existing or planned infrastructure such as logistics hubs, ports, airports, borders and SEZs.

Based on the site selection criteria above, potential locations to improve existing RRSAs and develop new RRSAs are further analysed. In particular, the main factors considered include the availability of land, the geographical distribution of RRSAs to balance the network, and the ease of implementation.

### Suggested locations

Whilst provisions on shorter NRs (e.g., NR1, NR4) are considered adequate, there is generally a lack of RRSAs on NR5 and NR6, both longer roads with significant stretches located in rural areas (see Appendices 1 and 2). In addition, it is recommended that each NR have at least one RRSA with designated parking lots for HGVs, such that hauliers can safely stop to rest and carry out vehicular checks or other necessary tasks. This could be achieved by improving existing RRSAs or developing new RRSAs with provisions that cater to HGVs. Besides providing HGV parking, these RRSAs should also provide basic facilities for hauliers, such as washrooms and hand-washing facilities.

Among the implementation models presented above, upgrading existing private RRSAs is considered an important way of improving the network of RRSAs along Cambodia’s national roads with relative ease of implementation compared to the other models. Accordingly, four categories of existing private RRSAs suitable for potential upgrading are listed below:

- RRSAs with sufficient land area within existing boundaries to accommodate minor upgrading or provision of new facilities such as retail or car parking;
- RRSAs without sufficient land area within existing boundaries but the potential to expand the footprint to accommodate minor upgrading or provision of new facilities such as retail or car parking;
- RRSAs with sufficient land area within existing boundaries to accommodate designated HGV parking lots and associated safe access and egress for HGV vehicular movements; and
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- RRSAs without sufficient land area within existing boundaries but the potential to expand the footprint to accommodate designated HGV parking lots and associated safe access and egress for HGV vehicular movements.

Potential locations for new or upgraded RRSAs are depicted in Figure 13, based on desktop and site survey observations (e.g. potentially vacant or agricultural land on adjacent properties to existing RRSAs). Refer to Appendix 5 for a detailed description of the suggested locations and rationale. Note that land acquisition considerations should be reviewed in further detail for each RRSA. Potential upgrading and/or expansion to accommodate designated HGV parking lots should also consider the associated necessary land area for safe access and egress of HGVs, provision of facilities for HGV drivers, road signage and markings etc.
Figure 13. Potential locations of new RRSAs or existing RRSAs to upgrade
4.4 **Suggested technical guidelines for RRSAs**

Currently, Cambodia does not have guidelines or regulations that specifically inform RRSA development. The development of a vision or desired outcomes for the RRSA network in Cambodia will inform policy considerations and serve as the basis for a comprehensive and consistent approach for the development of technical and environmental guidelines and the choice of commercial structure / implementation models.

The general conceptual model of an RRSA would include the following considerations:

- Standardised checklist of minimum required facilities such as toilet facilities, F&B, and fuel / vehicle services;
- Facilities should cater to all target user groups as much as possible, including local residents, hauliers, and local and international tourists;
- Clear signage on the property and on the road, as well as promotion to the public, to encourage planning and usage by road users;
- Regular O&M by the operator to ensure cleanliness and safety of facilities;
- Properly designed lighting to improve road and personal safety, especially during night-time, which can be powered using solar panels; and
- An established standard for acceptable buffer distance with neighbouring residential properties or other sensitive receptors.

For existing RRSAs that have the potential for expansion or upgrade, the government is recommended to acquire adjacent vacant land and sponsor the site development to allow for improved parking (especially for hauliers) and facilities.

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**Figure 14. General Conceptual Model of a Standardized RRSA**

The general layout of an RRSA could include the following features:

- Location of RRSA should be easy to access from the main road, e.g. wide entrance to allow HGV vehicles to make wide turns without the need to back up;
- Sufficient parking for both light and heavy vehicles;
- Facilities that cater to hauliers should be easily accessible, i.e. HGV parking should not be too far from the RRSA buildings relative to the light vehicle parking.
Within the broad framework above, for a privately financed/developed RRSA, the private party should have the flexibility to create their own detailed design. A range of RRSA types and service levels, with a combination of free and paid services, is likely required to meet the needs and expectations of road users.

RRSAs have not traditionally been a sector with coordinated service standards or established international guidelines. Accordingly, there are no recommended international guidelines developed by agencies like the Asian Development Bank or the World Bank concerning minimum services or services standards at RRSAs. Consequently, RRSA development and requirements tend to be highly localised to the needs of each jurisdiction. Please refer to Appendix 6 for examples of service standards that RRSAs can adopt in Cambodia.

4.5 Environmental and social considerations

One of the most significant risks at RRSAs offering fuel distribution is the risk of accidental release of stored or handled fuels, which can result in a number of serious safety and environmental issues. Technical guidance related to fuel delivery, storage and handling stormwater, vehicle washing effluents and wastes arising from retail fuel stations can be drawn from the IFC’s Environmental, Health, and Safety Guidelines for Retail Petroleum Networks. These guidelines include information relevant to retail petroleum networks primarily dedicated to the sale of petroleum-based automotive fuels, including Liquid Petroleum Gas (LPG) and Compressed Natural Gas (CNG).

The review of current practices in Cambodia indicates that there is a lack of provision for road safety at RRSAs in Cambodia. It is recommended that traffic and road safety risks for RRSA workers, users and nearby communities throughout the project life cycle are considered during the design phase, with technically and financially feasible road safety measures incorporated into the design to prevent and mitigate potential risks. Where appropriate, a road safety assessment should be undertaken for each phase of the project, monitoring incidents and accidents to identify negative safety issues and establish and implement measures to resolve them. The World Bank has identified the safe system interventions related to road safety in its Good Practice Note (GPN) on Road Safety. This GPN guides on improving road safety on projects with Investment Project Financing (IPF) and thus meets the World Bank’s Environment and Social Standard 4 (ESS4) requirements on Community Health and Safety.

Other important considerations include labour welfare, waste disposal, impact on community and gender and decarbonisation of road transport. Please see Appendix 7 for further details.

4.6 Measures to support local communities

The survey noted some informal rest stops / shops along the road network. Such informal venues could potentially impact the safety of the road for travellers and shopkeepers. Hence over the medium-term, the RGC should focus on enabling these vendors to become part of a formal RRSA.

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sector and/or create aggregator facilities to improve the social outcomes of RRSA projects on local communities.

The RGC could facilitate the development of basic RRSA, with minimum facilities and provide a venue for local vendors to set up shop. It must be noted that since the purpose of such facilities is primarily to uplift communities and because it is expected that individual shop owners are unlikely to be able to raise finance for the development of such facilities on a standalone basis, capital investment would need to be borne by the government. However, the capital investment in such cases is expected to be much lower as compared to fully equipped commercial RRSA as envisioned in section 4.4.

Figure 15. Farmer’s market on Highway 9, Ontario, Canada

Alternatively, the RGC, as part of the minimum service requirements, specify that privately developed and managed RRSA should support local communities through their RRSA. This could include, for example, creating a dedicated space for local/informal shop vendors to set up stalls for a nominal fee that could be borne either by the local community / municipalities or other relevant government bodies. In addition, some financial support / incentives from the Government could be provided to allow informal shops to benefit from private sector led RRSA. Enforcing local community participation is naturally more challenging when the private sector leads RRSA development with minimum support/ participation from the government. However, in projects where the government spearheads RRSA development (e.g., availability payment based RRSA), the government would have more contractual flexibility to enforce local community involvement.
4.7 Roles and responsibilities of the government

In summary, the underlying economic benefits and commercial viability drive the considerations around RRSA development and choice of the implementation model. Once a broad needs assessment is undertaken, the technical specification of an RRSA can be determined. Finally, the implementation model should evaluate the overall risk allocation of the project and the associated government responsibilities.

While the extent of responsibility assumed by the RGC differs slightly between each model, some of the minimum obligations to ensure that desired objectives are consistently met include:

- Mandating the requirement of adequate rest stops at suitable intervals on both national and sub-national roads;
- Specifying broad guidelines and expected performance standards for RRSA development;
- Providing adequate signage for RRSA;
- Providing adequate trunk infrastructures like electricity, water, and sewerage for new projects;
- Facilitating access and permits for the private sector to develop projects;
- Ensuring that competing facilities are not created on new projects within the specified RRSA interval; and
- Undertaking periodic inspections and checks for new RRSA projects.

To encourage private investment in the sector, the RGC should clearly set out the government’s expectations with respect to RRSA through an explanatory note or a guideline document to signal the government’s commitment to RRSA development. Such a guidance document should set out the RGC’s targets for the RRSA network both in terms of coverage and services provided. In addition, the RGC should clearly indicate the kind of support it would provide the private sector for RRSA development which could range from, for example:

- Assistance in permitting / clearances;
- Providing support in signage, utility connections etc.;
- Ensuring competing facilities are not developed within pre-specified distances (e.g. 50 kms); or
- Support for land acquisition and/or site provision, as applicable.

The above does not preclude / discourage private initiative for RRSA development but rather provides a clear direction to the market on expected outcomes. In the medium term, the RGC may also seek to claw back some value from privately developed RRSA, given that they benefit from a national asset (i.e., the collocated road) as part of a long-term effort to create some degree of standardisation in performance. However, the mechanism for such benefit-sharing would need further evaluation once a few RRSA projects are developed.
Future Outlook
5. Future Outlook

In light of the analysis and MPWT’s priorities, a road map for RRSA development in Cambodia is envisioned. These are conceptualised in terms of immediate priorities, medium-term goals and long-term studies, as set out in the following chapter. COVID-19 and the recovery post-pandemic will drive the considerations while evaluating specific projects.

5.1 COVID-19 impacts

COVID-19 has had significant impacts on the global economy. Countries are grappling with the pandemic with additional medical expenditures, lockdowns, travel restrictions, social distancing, and vaccination programmes.

The response to COVID-19 has impacted PPPs by changing the global economic environment, altering supply chains on the producer front and changing the patterns of use for infrastructure. Broad economic impacts include lower growth, growing inflation pressures, disrupted labour markets, supply disruptions and added health and safety regulations. Until logistics capacity is restored, supply chains for infrastructure are likely to be particularly affected as buffer supplies are exhausted, impacting the supply of raw materials and technology for projects currently in construction. In addition, revenue risk projects have come under significant pressure due to reductions in activity. This has particularly affected the airports sector and toll road projects, in turn increasing project risks, such as default events, termination, insolvency or government breaching of contracts, among others. In addition, COVID-19 has also impacted future pipelines due to increased project risks affecting the financing and budgets for infrastructure projects.

The projects already under construction have been reported to be continuing to make progress despite the impact of COVID-19, such as the construction of megaprojects like the Phnom Penh-Sihanoukville expressway and the 700-megawatt power plant in Sihanoukville. The pandemic has also coincided with the process for developing the new legal and institutional framework for PPPs. The framework’s entry into force may provide a fresh stimulus to the development of PPPs in Cambodia.

The survey conducted on national roads from September – October 2021 indicated that several RRSAs were closed due to the pandemic. Reduced traffic and movement restrictions decreased the footfall at RRSAs. The complete standstill of the tourism sector also severely affected the utilisation of the road network, further reducing demand for RRSA facilities and services. As the economy revives and the movement of goods recovers to pre-COVID levels, the RGC should better understand the inherent traffic count and mix. Existing RRSAs focus on only providing essential and basic services, demand for which is expected to pick up when the traffic demand improves.

The feasibility studies for new RRSAs should consider various demand scenarios, including pre-pandemic traffic levels. Roads and destinations preferred by tourists and characterised by high traffic footfall can be the initial focus segments for new RRSA development with value-added services targeted at tourists. Similarly, dedicated RRSAs for hauliers should focus on providing basic but essential services for HGVs to quickly ramp up road safety instead of premium (and potentially unaffordable) value-added services. By calibrating the facilities and services to user needs, the RGC could ensure that new projects offer value for money solutions that meet the government’s overall

objectives at reasonable costs.

5.2 Immediate priorities

In the short term, the RGC’s immediate priority should be to ensure that essential services are made available to road users. Based on the survey, a key area currently lacking is the provision of parking facilities for HGVs. Section 4.3 outlines the suggested locations for new or upgraded RRSAs that the RGC can consider. These locations were selected on the basis of availability of land, the geographical distribution of RRSAs to balance the network, and ease of implementation.

As a first step, the RGC could explore partnering with major retail fuelers to upgrade the existing network of fuel stations to improve road safety and offer a more comprehensive range of services / facilities. Such collaboration can be explored under the current legal framework without requiring legal reform. However, it should be noted that hauliers may prefer to refuel their HGVs at local, non-branded retail fuel stations, which offer lower fuel prices as compared to the branded retail fuel stations. This, in turn, may limit the potential of leveraging the existing retail fuel station network to cater to the needs of this group of users. The RGC could also engage with local non-branded retail fuel stations to explore potential upgrades / service expansions. The survey noted that there were several informal shops and vendors along the road. The RGC should endeavour to provide formal facilities for these small vendors to ensure greater access to economic opportunities for the local communities.

When drawing up contracts with the private operator, the RGC should incorporate clauses on the following areas to provide better clarity to the RRSA developer.

► Demarcation of areas for various services, such as hotels, restaurants, fuel stations, and parking areas in an integrated RRSA setup, including any minimum technical requirements;
► Limiting the distance between consecutive RRSAs, to ensure that there is adequate provision for road users along the entire road alignment; and
► Clearly setting out the process for obtaining access permits.

5.3 Medium-term goals

The development of initial RRSAs would provide valuable lessons to support the RGC in developing policy guidelines to inform RRSA implementation in the medium term. These could include site selection criteria, standardised technical guidelines, minimum service standards for each type of RRSA, and regulations for road safety and environmental considerations.

In addition, the regulatory framework for the planning, development and operation of RRSA projects is currently scattered across several different laws and regulations. The RGC could consider publishing a circular/explanatory note to summarise the laws applicable to RRSA projects so that investors have a clear idea of the specific requirements they may need to comply with to set up their business in an RRSA. Examples include investor rights pertaining to land acquisition for RRSA development, the process for obtaining access permits and requirements for environmental permits. Creating a facilitative institutional environment would boost investors’ confidence and enhance market interest in RRSA projects.

MPWT should also perform a detailed study on the gaps in RRSA provision across Cambodia, particularly in the rural areas currently under-served by retail fuel stations due to lower traffic volume. While these RRSAs may not be financially viable, they may nevertheless be desirable from a socio-economic standpoint, such as improving road safety and enhancing tourism potential. To incentivise the private sector to take on such projects, the RGC may need to provide some viability gap funding.
Alternatively, MPWT can explore a bundling approach such as:

- ** Bundling a series of RRSAs along the same national highway under a single contract:** Bundling would enable cross-subsidisation between profitable RRSAs and unprofitable RRSAs that may not be commercially viable on a standalone basis while delivering other safety / social benefits. Such an approach would generate economies of scale and allow for standardised service provision across the entire network of RRSAs; or

- **Co-development of RRSAs with a road development and maintenance contract:** Co-development could potentially provide adequate scale to attract private investors to bid for a PPP project and de-risk the RRSA development in line with the development / upgradation of the road. This is particularly suitable for major new road projects as the operator could potentially offset some of the construction costs with revenue from the RRSAs and/or toll revenue. However, a value for money assessment should be undertaken to determine project viability / business case prior to implementation.

When considering site selection and implementation approach, the RGC should also consider the potential impact on local communities, particularly on small businesses subsisting on providing services to motorists and truck drivers. Furthermore, guidelines could be introduced to address environmental and social risks, such as:

- Fuel handling and storage pollution control;
- Provisions for waste and wastewater management, including adequate space for waste handling, segregation and storage, and wastewater diversion to the sewer for treatment;
- Framework for monitoring and assessment of roadside safety; and
- Safeguarding of workers’ welfare, such as health and safety procedures during fuel tank filling, emergency contingency plans for spills and fires, security features to protect staff working alone at night, and infectious disease management and prevention measures.

As the RRSA market in Cambodia is nascent, market consultations / engagements will be helpful to inform the level of market capability, investors’ risk appetites and users’ ability to pay for services, which will serve as a basis for the choice of procurement model and associated risk allocation. The consultation process should also be a means to provide the private sector with better clarity with respect to regulatory requirements and expected service standards. Clarity of requirements and expected performance standards could also encourage private investors’ interest and potentially incentivise the submission of unsolicited proposals. The RGC could also consider developing pilot RRSA projects through partnerships with the private sector to test various business models and implementing arrangements.

### 5.4 Long-term studies

In the longer term, the RGC could establish a broader strategic vision for the RRSA sector, which could guide the development of a pipeline of RRSA projects. Publishing a project pipeline will help facilitate private sector interest, allow the market to better prepare for bidding on RRSA projects, and support capability building in the industry. In addition, given that demand for RRSA facilities is directly tied to the traffic volume and economic development, future RRSA developments should be integrated with a comprehensive road upgrade programme. This would also signal to private investors the government’s commitment to developing RRSA. The quality of services provided at RRSAs should also follow the country’s economic prosperity and the users’ ability to pay for services.
Further studies could be conducted with respect to the management of environmental and social risks and opportunities, such as:

► Socio-economic studies to consider potential impacts on local communities resulting from larger, privately financed RRSAs. While larger RRSAs have the potential to improve road safety for local communities, provide jobs and attract larger volumes of users, there could be other implications for local communities, such as the loss of livelihoods of local owner-operators which should be assessed in detail and potential negative impacts should be addressed;

► Localised traffic impact assessments to determine the impact on and control measures for the surrounding road network, and land-use studies for appropriate setbacks and buffers for local communities;

► Economic, environmental and social assessment of the potential deployment of a network of electric vehicles (EV) charging stations at RRSAs along NRs, particularly for the sections close to urban conurbations;

► Targeted studies to determine any specific needs for cross-border hauliers related to the management of infectious diseases, considering the lessons learned from and practices implemented in response to COVID-19; and

► Incorporation of gender considerations in planning and service design to improve personal safety and awareness of the risk of illicit behaviours such as human trafficking and sexual exploitation and enhance the accrual of benefits from increased private sector financing of RRSAs on women and local communities.

In addition, in line with the strong global momentum to transit the transport sector to cleaner and renewable sources of energy, the RGC should also incorporate sustainability considerations into RRSA development. Recommendations to promote the decarbonisation of road transport include:

► Encouraging, supporting and providing seed funding, if necessary, to boost initiatives for public and private sector engagement in sustainability aligned to Cambodia’s National Environment Strategy and Action Plan (NESAP);

► Exploring the potential of emerging technologies for green fuels that RRSA operators can leverage (e.g., microgeneration via solar panels at unutilised rooftop spaces); and

► Further deployment of EV charging stations to create a network of charging stations at appropriate intervals along the NRs.
6. Appendices

6.1 Appendix 1: Overview of Cambodia’s National Roads

<table>
<thead>
<tr>
<th>Road corridor</th>
<th>Origin – Terminus</th>
<th>Comments</th>
<th>Estimated driving time</th>
<th>Total length (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Road 1</td>
<td>Phnom Penh – Svay Rieang – Bavet (Vietnam Border)</td>
<td>Part of AH1</td>
<td>3 hr 30 min</td>
<td>167</td>
</tr>
<tr>
<td>National Road 2</td>
<td>Ta Khmau – Takaev – Phnum Den (Viet Nam Border)</td>
<td>Part of AH1</td>
<td>2 hr 30 min</td>
<td>121</td>
</tr>
<tr>
<td>National Road 3</td>
<td>Phnom Penh – Kapot – Veal Rinh</td>
<td>Part of AH1</td>
<td>5 hr 30 min</td>
<td>202</td>
</tr>
<tr>
<td>National Road 4</td>
<td>Chaom Chau – Kampong Spueu – Krong Preah Sihanouk</td>
<td>Part of AH11</td>
<td>5 hr 00 min</td>
<td>214</td>
</tr>
<tr>
<td>National Road 5</td>
<td>Phnom Penh – Bat Dambang – Serei Saophoan – Poi Pet (Thailand Border)</td>
<td>Part of AH1</td>
<td>8 hr 30 min</td>
<td>407</td>
</tr>
<tr>
<td>National Road 6A / 6</td>
<td>Phnom Penh – Kampong Thum – Siem Reab – Serei Saophoan</td>
<td>Part of AH13</td>
<td>7 hr 30 min at Serei Saophoan for connection to Thailand Border</td>
<td>416</td>
</tr>
<tr>
<td>National Road 7</td>
<td>Skun – Kampong Cham – Kracheh – Stueng Traeng – Voeun Kham (Laos Border)</td>
<td>Part of AH1</td>
<td>6 hr 35 min</td>
<td>461</td>
</tr>
</tbody>
</table>
### 6.2 Appendix 2: Overview of RRSAs observed on National Roads

<table>
<thead>
<tr>
<th>Location (Province)</th>
<th>Type of RSA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NR1 (West to East, i.e., Phnom Penh [PP] to Vietnam Border)</strong></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>Phnom Penh</td>
<td>0</td>
<td>1 mixed service</td>
</tr>
<tr>
<td>Kandal</td>
<td>0</td>
<td>1 fuel station with restaurant (closed)</td>
</tr>
<tr>
<td>Prey Vang</td>
<td>0</td>
<td>2 mixed services</td>
</tr>
<tr>
<td>Svay Rieng</td>
<td>0</td>
<td>2 mixed services</td>
</tr>
<tr>
<td><strong>NR4 (Northeast to Southwest, i.e., PP to Sihanoukville Border)</strong></td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>Kandal</td>
<td>0</td>
<td>1 mixed service</td>
</tr>
<tr>
<td>Kampong Speu</td>
<td>0</td>
<td>4 mixed services</td>
</tr>
<tr>
<td>Preah Sihanouk</td>
<td>0</td>
<td>2 mixed services</td>
</tr>
<tr>
<td><strong>NR5 (Southeast to Northwest, i.e., PP to Thailand)</strong></td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>Phnom Penh</td>
<td>0</td>
<td>3 fuel stations (small, limited facilities)</td>
</tr>
<tr>
<td>Kampong Speu</td>
<td>0</td>
<td>1 fuel station</td>
</tr>
<tr>
<td>Kampong Chhnang</td>
<td>1 (closed)</td>
<td>3 mixed services (including 2 with restaurants)</td>
</tr>
<tr>
<td>Pursat</td>
<td>1 (closed)</td>
<td>1 mixed services with restaurant</td>
</tr>
<tr>
<td>Battambang</td>
<td>0</td>
<td>1 mixed services</td>
</tr>
<tr>
<td>Banteay Meanchey</td>
<td>0</td>
<td>1 mixed services</td>
</tr>
<tr>
<td>Location (Province)</td>
<td>Type of RRSA</td>
<td>Major</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------</td>
<td>-------</td>
</tr>
<tr>
<td>NR6 (Southeast to Northwest, i.e., PP to Thailand)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phnom Penh</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Kandal</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Kampong Cham</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Kampong Thom</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Siem Reap</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
Appendix 3: Summary of findings from survey of RRSA users

The review targeted representative road corridors among the Cambodian network of National Roads (NRs), including National Road 1 (NR1), National Road 4 (NR4), National Road 5 (NR5), and National Road 6 (NR6).

A summary of findings from the review is provided below.

Profile of RRSA users:
- Out of over 2,300 survey responses received, 76% were from transient road users, including motorcyclists, car and bus drivers / passengers and hauliers. 12% of total responses were from RRSA personnel such as staff / vendors. Other groups surveyed include bus / haulier companies and roadside residents.
- The majority of RRSA users interviewed (over 80%) were male. In particular, most haulier (both long and short-haul) and bus/coach drivers (over 99%) were male.
- The typical RRSA users is thus male, attributed to the fact that, in Cambodia, men and women have different trip patterns. Women are more likely to make shorter trips (primarily walking) while carrying groceries and accompanying children, while men tend to make longer trips including long distance journeys along the NRs.

Number / location of RRSAs
- The majority of respondents (over 80%) agreed or strongly agreed that there are sufficient RRSAs and that the existing RRSA locations are suitable. Among the 11% of respondents who indicated that a new RRSA is needed, most of them (7%) recommended that the location be far away from the urban areas. While there are a range of locations being used as rest stops, the service standards and quality of facilities need significant improvements.
- While the survey focused on the national roads highlighted above, feedback suggests that the subnational and rural roads do not have adequate facilities with reasonable spacing to service the needs of road-users.
- There appears to be a lack of RRSAs with suitable stopping areas specifically targeted at hauliers.
- The majority of transient road users stop at an RRSA after every 1 to 2 hours of driving and prefer the maximum distance between RRSAs to be between 50 km to 80 km.

Requirements and usage at RRSAs
- The reasons for the popularity of the most-stopped RRSAs across the four NRs vary.
  - Along NR1, while one of the RRSAs is popular for cars and taxis, hauliers prefer to stop at a large open space (not technically an RRSA).
  - For NR4 which is a longer route, hauliers would sleep along the way while other road users stop at RRSA 4-5 since it is a religious place.
  - NR5 was less popular during the observational survey as the road condition was not good and the Covid-19 situation was serious. As a result, trucks and cars used NR6 more for long-distance travel.
- The top two purposes of stopping at RRSAs are for washroom facilities and food (including meals and coffee/snacks). The top two purposes of stopping at RRSAs are significantly more frequent.
Transient road users prefer RRSAs with mixed services to fulfil their needs. The vast majority of respondents (93%) indicated that there were sufficient facilities at the surveyed RRSAs to meet their needs.

Haulier companies generally do not encourage their drivers to take long rests on trips of shorter distances, such as those originating in Phnom Penh and utilising NR No.1. However, for longer distances such as those between borders, ports and central urban areas, hauliers generally stop at customs checkpoints or weighing stations, while bus drivers typically stop at restaurants or retail fuel stations which they have agreements with.

Survey respondents strongly preferred to stop at branded retail fuel stations with toilets, shops and co-located facilities such as banks and cafés. Clean toilets and shower facilities ranked high in importance for paid services that respondents would like to have available at RRSAs, with fast food restaurant / takeaway coffee, and convenience stores also strong preferences.

Regardless of the mode of transportation or type of user (whether driver or passenger), the average road user’s spending pattern is similar. The user would mostly likely spend between US$2.5-6.0 at an RRSA, followed by the US$0-2.5 spending category. This appears to match the top three purposes of stopping at RRSA, which are toilet facilities, food (including meals, coffee and snacks), and fuel.

Most transient road users (87%) indicate their willingness to use additional paid services, if available, at the RRSAs;

The two greatest safety concerns include roadside safety (risk of traffic accident) followed by personal safety (theft). Further, male and female respondents have different levels of safety concern.

Based on the above findings, the following are recommended:

- Each National Road should have at least one RRSA appropriate for use by hauliers, either through improvements to existing RRSAs or development of a new RRSA;
- For distances between RRSAs, a spacing of 50-80 km from popular RRSAs is suggested; and
- Further study and analysis of user needs, challenges, and concerns may be needed to plan and provide services for various road users while considering specific sites for development.
### Appendix 4: Overview of Cambodia’s major retail fuel station operators

<table>
<thead>
<tr>
<th>Service Stations</th>
<th>Locations</th>
<th>Additional Services</th>
<th>Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PTT</strong>&lt;sup&gt;27&lt;/sup&gt;</td>
<td>33</td>
<td>10 service stations located in Phnom Penh; 23 service stations located mainly along NRs</td>
<td><img src="image1" alt="PTT Photo" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Café Amazon; Convenience stores</td>
<td></td>
</tr>
</tbody>
</table>

| **Total**<sup>28</sup> | 107 | 58 service stations located in Phnom Penh; 49 service stations located across 24 provinces | ![Total Photo](image2) |
|                      |      | Bonjour Shop and Café; QuartzAuto Care Centers; ATM Services |       |

| **Caltex**<sup>29</sup> | 35 | Service stations located in Phnom Penh and along NR | ![Caltex Photo](image3) |
|                       |    | Star Mart® convenience stores; Coffee Plus® gourmet café<sup>30</sup> |       |

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<sup>30</sup> Cambodia Highlights of Operations, Chevron, 2020, [https://www.chevron.com/worldwide/cambodia](https://www.chevron.com/worldwide/cambodia)
### Appendix 5: Summary of potential locations for new or upgraded RRSAs

<table>
<thead>
<tr>
<th>Potential Location</th>
<th>Rationale and Suggested Improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NR1</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Upgrade to Stueng Village | ▶ Currently not an RRSA but frequently used by hauliers; and  
                           ▶ Recommended to be made into a truck rest stop or RRSA. |
| Upgrade to existing RRSA between Nak Loeung and Phnom Penh | ▶ Limited HGV parking provisions at this popular RRSA cluster; and  
                           ▶ At least 1 RRSA has the potential to be expanded and/or potentially has space for HGV parking within current configuration, to provide additional HGV parking at this location. |
| Upgrade to an existing RRSA between Nak Loeung to Bavet city | ▶ Lack of HGV parking in the eastern stretch of NR1 to the Vietnam border; and  
                           ▶ At least 1 R RSA has potential to be expanded to develop more parking for both cars and hauliers. |
| **NR4**            |                                     |
| Upgrade to existing RRSA in Traeng Trayueng | ▶ Suitable location to improve HGV parking, located within 80 km of Phnom Penh; and  
                           ▶ The existing RRSA at this location has the potential for either HGV parking within current configuration or property expansion. |
| Upgrade to one of the existing RRSAs in Pech Nil, e.g., “Grandmother Mao” worship place | ▶ Limited HGV parking provisions at this RRSA cluster;  
                           ▶ “Grandmother Mao” worship place is popular for tourists and has some roadside HGV parking where signage and demarcation can be improved; and  
                           ▶ All RRSAs in this cluster have the potential to be expanded. Some may have space for HGV parking within current configuration. |
| **NR5**            |                                     |
| Upgrade to existing RRSA in Trapeang Chan | ▶ Limited HGV parking provisions at this RRSA cluster; and  
                           ▶ Both RRSAs at this location have the potential to be expanded, and one of them may have space for HGV parking within current configuration. |
| Upgrade to existing RRSA near Svay Ath in Krong Pursat | ▶ Location is over 50 km from other existing RRSAs with HGV parking in either direction of NR; and  
                           ▶ Potential for either HGV parking within current configuration or property expansion. |
| New RRSA with HGV parking near Moung Ruessei | ▶ The nearest two RRSAs from this location are over 100 km apart and both locations do not have HGV parking. A new RRSA with HGV parking is recommended at this location. |
| **NR6**            |                                     |
| Upgrade to existing RRSA in Skun | ▶ Currently no HGV parking provisions at this RRSA cluster; and  
                           ▶ Both RRSAs have the potential to be expanded, and one of them may have space for HGV parking within current configuration. |
<p>| New RRSA near Kampong Thma | ▶ The nearest two RRSAs from this location are about 96 km apart and limited or no HGV parking is available at both locations. |</p>
<table>
<thead>
<tr>
<th>Potential Location</th>
<th>Rationale and Suggested Improvements</th>
</tr>
</thead>
</table>
| Upgrade to one of the existing RRSAs in Prey | ▶ Limited HGV parking provisions at this RRSA cluster; and  
▶ All RRSAs in this cluster have the potential to be expanded. At least one RRSA may have space for HGV parking within current configuration. |
| New RRSA near Kampong Kdei | ▶ The distribution of RRSA on NR6 is sparse; the nearest two existing RRSA from this location are over 100 km apart with limited or no HGV parking. A new RRSA is recommended near this location. |
| Upgrade to existing RRSA in Siem Reap | ▶ Limited RRSAs, especially ones with HGV parking, between Siem Reap and Banteay Meanchey. |
| New RRSA near Preah Netr Preah | ▶ The nearest two existing RRSA from this location are over 100 km apart with limited or no HGV parking. A new RRSA is recommended near this location. |
6.6 Appendix 6: Example service standards for adoption by RRSAs in Cambodia

<table>
<thead>
<tr>
<th>Example Service Standards</th>
<th>HGV Rest Areas</th>
<th>Modern, Integrated RRSA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minor</td>
<td>Major</td>
</tr>
<tr>
<td>General</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 hours daily opening hours</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Open all days of the year</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Basic snacks, drinks available</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Substantial food and hot drinks available, between 0600 hrs to 1000 hrs, 1200 hrs to 1400 hrs and 1700hrs to 2000 hrs</td>
<td>✓ (✓)</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Toilets and hand-washing facilities, with no obligation to purchase goods</td>
<td>✓</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Wheelchair-accessible toilets and hand-washing facilities, with no obligation to purchase goods</td>
<td>✓ (✓)</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Parent/carer and child toilets and hand-washing facilities containing baby-changing amenities, separate from toilet facilities, with no obligation to purchase goods</td>
<td>✓ (✓)</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Free indoor seating, with no obligation to purchase goods</td>
<td>✓</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Parking Provisions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate parking provision for expected usage, in a drive-through pattern to avoid reversing</td>
<td>✓ (✓)</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Free parking for up to 2 hours. Subsequent payment for parking to be possible as an on-site cash transaction</td>
<td>✓</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Coach parking segregated from the HGV parking area and a safe walking route to the amenity building</td>
<td>✓ (✓)</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Overnight parking, up to 12 hours</td>
<td>✓ (✓)</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Parking bays for disabled users of all types of vehicles located in close proximity to the main entrance of the amenity building</td>
<td>✓</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Retail fuel such as diesel, petrol (gasoline)</td>
<td>✓ (✓)</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Wide range of fuels, such as LPG, ultra-low-sulphur</td>
<td></td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>EV recharging facilities for use by electric powered cars, for which a payment may be levied</td>
<td></td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Basic safety facilities such as air and water, at no cost to user</td>
<td>✓</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Retail and Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail space (uses that specifically generate traffic not permitted)</td>
<td></td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Access to public telephone</td>
<td>✓</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Access to internet connection, e.g., Wi-Fi network</td>
<td></td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Traffic information points to help the public make informed travel decisions and plan their onward</td>
<td></td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Example Service Standards</td>
<td>HGV Rest Areas</td>
<td>Modern, Integrated RRSA</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------------</td>
<td>----------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Journeys</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outdoor seating, playground, picnic areas</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Access to a private breastfeeding area, separate from toilet facilities, with no obligation to purchase goods</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Facilities for waste recycling in the amenity building and picnic areas</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Provisions for Heavy Goods Vehicle (HGV) Drivers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise area/floor space for use by HGV drivers only</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Shower and washing facilities for HGV drivers, located close to HGV parking</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Access for up to 2 hours for those carrying out emergency repairs to broken-down vehicles</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Overnight accommodation for drivers without generating additional new journeys, additional traffic, or a net increase in vehicle mileage</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Access for parties carrying out duties for and on behalf of MPWT or other authorities</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Roadside Safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear access roads connecting a roadside facility to the local road network</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Parking or facilities on opposite sides of the road</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Safe access via turning lane</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

✓ Minimum Target  (✓) Recommended
## Appendix 7: Environmental and social considerations

<table>
<thead>
<tr>
<th>Issue</th>
<th>Key recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fuel handling and storage</strong></td>
<td>▶ Ensure the requirements of MME’s Circulars on retail fuel are implemented, particularly during the upgrading or change of ownership of older facilities; &lt;br&gt;▶ Provide secondary containment for storage tanks, such as double-skinned tanks, vaults or membranes; &lt;br&gt;▶ Install leak detection systems on tanks and pipework; &lt;br&gt;▶ Install devices to prevent spills and overfills, e.g., alarms to warn of overfilling or automatic shut-off devices; &lt;br&gt;▶ Consider the use of corrosion protection in steel tanks and piping, such as coating them with suitable material; &lt;br&gt;▶ Implement procedures to reconcile fuel deliveries with fuel sales to check for product loss; &lt;br&gt;▶ Replace any bare soil or broken hardstanding in the vicinity of the fuel unloading and dispensing points with unbroken hardstanding engineered to withstand the weight of heavy vehicles; &lt;br&gt;▶ Separate clean and potentially contaminated drainage, with the latter passing through oil/water separators prior to discharge; &lt;br&gt;▶ Ensure that the hardstanding directs all rainwater falling on it to drains fitted with oil/water separators; &lt;br&gt;▶ Ensure oil/water separators are properly designed, operated and maintained in order to achieve the required level of water treatment; &lt;br&gt;▶ Ensure that wastewater from oil/water separators is discharged to the foul sewer system for further treatment at a municipal wastewater treatment works; &lt;br&gt;▶ Install roofs or covers to reduce rainwater falling on potentially contaminated hardstanding; and &lt;br&gt;▶ Ensure interceptors are regularly inspected, cleaned and maintained.</td>
</tr>
<tr>
<td><strong>Roadside safety at RRSAs</strong></td>
<td>▶ Provide turning lanes on approach roads; &lt;br&gt;▶ Incorporate vehicle accesses and means of circulation that are safe, clear to drivers and minimise vehicle congestion; and &lt;br&gt;▶ Provide appropriate signage to inform road users of the RRSA and its services, without causing distraction.</td>
</tr>
<tr>
<td><strong>Community related</strong></td>
<td>▶ Consider community issues during the planning phase to ensure ample space and set-back from communities, together with the safeguarding of land for future expansion, if necessary; &lt;br&gt;▶ Leverage RRSAs to provide employment opportunities for local communities, with managerial as well as sales and service roles; &lt;br&gt;▶ Consider conducting socio-economic studies to assess potential impacts on local communities resulting from larger, privately financed RRSAs. While larger RRSAs have the potential to improve safety and security for local communities, provide jobs and attract larger volumes of users, there could be other implications for local communities, e.g., the loss of livelihoods of local owner-operators; and &lt;br&gt;▶ Ensure localised traffic impact assessments are conducted to determine impact on and control measures for the surrounding road network and land-use studies for appropriate set-backs and buffers for local communities.</td>
</tr>
<tr>
<td><strong>Issue</strong></td>
<td><strong>Key recommendations</strong></td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Gender considerations     | ▶ Consider gender aspects in planning and service design of RRSAs, particularly HGV rest areas, to improve personal safety and awareness of the risk of illicit behaviours such as human trafficking and sexual exploitation;  
                          ▶ Consider the current and changing gender balance of long-distance drivers, families, children, and caregivers and associated needs and expectations related to facilities at the RRSAs; and  
                          ▶ Ensure that gender and social considerations issues are adequately addressed and consider measures to enhance the accrual of benefits from increased private sector financing of RRSAs to women and local communities. |
| Welfare and safety related |                                                                                                   |                                                                                                                                                                                                                                                                                                                                 |
| Signage and Information   | ▶ Provide signage regarding RRSAs to encourage drivers to rest; and  
                          ▶ Improve signage to retail fuel station users regarding prohibited activities, i.e., use of mobile phones, no smoking, engines to be switched off.                                                                                       |
| Labour and worker welfare aspects | ▶ Implement robust health and safety procedures during bulk fuel tank filling and vehicular refuelling;  
                          ▶ Prepare emergency contingency plans for spills and fires, to include immediate action and calling the emergency services;  
                          ▶ Consider the use of VOC emissions controls at vehicle filling points (known as Stage 2 Petrol Vapour Recovery); and  
                          ▶ Consider security features to protect staff working alone at night given the transient nature of RRSAs users which increases personal security risks. |
| Infectious diseases       | ▶ Consider worker welfare and social considerations related to potential spread of infectious diseases given the transient nature of RRSAs users;  
                          ▶ Provide of washing facilities;  
                          ▶ Ensure washrooms are available and well-maintained;  
                          ▶ Encourage social distancing and good personal hygiene;  
                          ▶ Provide screens, e.g., flexi-glass barriers to protect the workforce;  
                          ▶ Ensure the sale and use of protective equipment such as facemasks, gloves, etc. during times of disease outbreak;  
                          ▶ At larger RRSAs, consider the possible provision of an isolation room for suspected cases, prior to transfer to medical facilities;  
                          ▶ Consider infectious disease management and prevention measures such as screens for fixed workers, ample space for safe distancing and potentially isolation rooms for users identified as potentially in need of medical treatment or hospitalization; and  
                          ▶ Conduct targeted studies to determine any specific needs for cross-border hauliers related to the management of infectious diseases, taking account of the lessons learned and practices implemented in response to CV-19. |
| Environment related       |                                                                                                   |                                                                                                                                                                                                                                                                                                                                 |
| Waste and wastewater     | ▶ Ensure adequate waste and wastewater management facilities are provided during RRSAs planning and design, including adequate space for waste handling, segregation and storage, and wastewater diversion to the sewer for treatment.                                                                                     |
| Decarbonisation of road transport | ▶ Encourage, support, and provide seed funding, if necessary, to boost initiatives for public and private sector engagement in sustainability aligned to Cambodia’s NESAP 2016-2023; and  
                          ▶ Explore the potential of emerging technologies for green fuels for both RRSAs operators (e.g., microgeneration via solar panels at unutilised rooftop spaces) and road users (e.g., EV charging points). |
<table>
<thead>
<tr>
<th>Issue</th>
<th>Key recommendations</th>
</tr>
</thead>
</table>
| Innovation in Sustainability| ▶ Incentivise microgeneration at RRSAs;  
▶ Encourage, support, and provide seed funding, if necessary, to boost initiatives for public and private sector engagement in sustainability aligned to Cambodia’s NESAP;  
▶ Explore the potential of emerging technologies for green fuels both for RRSA operators (e.g., microgeneration via solar panels at unutilised rooftop spaces); and  
▶ Deploy EV charging stations at RRSAs to create a network of charging stations at appropriate intervals along NRs for road users. |
### Appendix 8: Comparison of benchmarks

#### Legal and regulatory review

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Benchmark country</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land acquisition and ownership</strong></td>
<td>Vietnam</td>
</tr>
<tr>
<td></td>
<td>Malaysia</td>
</tr>
<tr>
<td></td>
<td>New Zealand</td>
</tr>
<tr>
<td>Vietnam’s Land Law of 2013 (“VLL”) permits State government to acquire land for implementing projects of 'national importance' that are approved by the National Assembly or the Prime Minister as the case may be.</td>
<td>The Highway Authority of Malaysia (Incorporation) Act 1980 states that immovable property, other than State land or reserved land, that cannot be acquired by agreement, may be acquired for constructing highways or ‘service areas’ or ‘any areas adjacent thereto’ in accordance with the land acquisition laws of the relevant State where the land is situated, and any declaration may be passed by the appropriate authority of such State.</td>
</tr>
<tr>
<td>Such projects may include ‘local technical infrastructure including transport’, ‘recreation centres’ etc.</td>
<td>Expenses and compensation shall be paid by the said authority; and the authority shall obtain the document of title for such land</td>
</tr>
<tr>
<td>As per VLL, foreign-invested enterprises may acquire land use rights through land leased by the State</td>
<td>The registered landowner may apply to the State Authority to change the current purpose of land use</td>
</tr>
<tr>
<td>Conversion of land type from agricultural to non-agricultural purposes can be done with consent from state land authority</td>
<td></td>
</tr>
</tbody>
</table>

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31 Article 62 of VLL
32 Article 169(1)(h) of VLL
33 Article 57(d) of VLL
34 Section 22 of the Highway Authority of Malaysia (Incorporation) Act 1980
37 ‘Public works’ is defined to mean any work of construction, operation, management etc. undertaken by the Crown or the Minister of the Crown for any public purpose.
## Legal and regulatory review

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Benchmark country</th>
<th>Benchmark country</th>
<th>Benchmark country</th>
</tr>
</thead>
<tbody>
<tr>
<td>The United Kingdom</td>
<td>New Zealand</td>
<td>India</td>
<td></td>
</tr>
<tr>
<td>► The Highways Act of 1980 (&quot;Highways Act&quot; or &quot;HA&quot;)) permits the government authority or a highways company to provide, on land adjoining or in the vicinity of a trunk road, ‘picnic site for motorists and others likely to use the road with space for parking vehicles and a means of access to and from a highway’.&lt;sup&gt;41&lt;/sup&gt;</td>
<td>► The Government Roading Powers Act 1989 (&quot;GRP Act&quot;) sets up the regulatory framework for highways and motorways.</td>
<td>► The Ministry of Road Transport and Highways (&quot;MoRTH&quot;) regulates 'wayside amenities' such as fuel stations, hotels, restaurants etc., along National Highways and Expressways based on a policy paper published on 11 February 2021.</td>
<td></td>
</tr>
<tr>
<td>► The HA permits relevant highway authority to provide public sanitary conveniences (including lavatories) in proper and convenient situations on or under land adjoining, or in the vicinity of, the highway.&lt;sup&gt;42&lt;/sup&gt;</td>
<td>► The State Highway Authority is entitled to ‘construct and operate, or allow to be constructed and operated, on, over, under, or adjacent to any State highway, any building, facility, amenity, or service that the Agency considers to be desirable for the convenience of State highway users.&lt;sup&gt;44&lt;/sup&gt;</td>
<td>► The paper provides detailed guidelines on the design of the 'wayside amenities' based on the type of traffic and responsibilities of the government authority and the RRSA developer.&lt;sup&gt;47&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>► The HA also states that private means of access from the highway to any premises may be restricted if the highway authority believes that allowing such access is 'likely</td>
<td>► Part 17 of the State highway control manual contains guidelines on the construction, designing, accessibility, and rest places along State highways.&lt;sup&gt;45&lt;/sup&gt;</td>
<td>► The Control of National Highways Land and Traffic Act 2002 (&quot;CNHLT Act&quot;) restricts access to national highways without permission from the National Highway Authority, in the form stated under the act.&lt;sup&gt;48&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>► The law regulates access to and from the State highway to any adjoining land parcel.&lt;sup&gt;46&lt;/sup&gt;</td>
<td>► The law regulates access to and from the State highway to any adjoining land parcel.&lt;sup&gt;46&lt;/sup&gt;</td>
<td>► Private developers of wayside amenities are required to apply to the highway</td>
<td></td>
</tr>
</tbody>
</table>

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<sup>41</sup> Section 112 of the Highways Act

<sup>42</sup> Section 114 of the Highways Act


<sup>48</sup> Section 28 read with Section 29 of the CNHLT Act
### Legal and regulatory review

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Benchmark country</th>
</tr>
</thead>
<tbody>
<tr>
<td>to cause danger to, or to interfere unreasonably with, traffic on the highway.</td>
<td>Australia (New South Wales)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business operations in RRSA: permitted types, operating licences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum storage including installation, modification and repair is regulated by the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019.</td>
</tr>
<tr>
<td>Handling, packaging, labelling and transport of petroleum (and other ‘dangerous goods’) (such as petroleum and other ‘dangerous are regulated under the Dangerous Goods Safety Act 2004.</td>
</tr>
<tr>
<td>The food safety requirements are set by the Food Act 2003 (NSW) and the Food Regulation 2015 (NSW). These Acts require that food sold in NSW is safe and suitable for human consumption and meets all standards set out in the Food Standards Code. Food safety in NSW is governed by the NSW Food Authority which comes under the Department of Primary Industries.</td>
</tr>
</tbody>
</table>

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43. Section 124 of the Highways Act
49. Paragraph 2.6 of the Norms for grant of permissions for construction of access to Fuel Stations, Wayside amenities, Private Properties, Rest Area Complexes, connecting roads & such other facilities/establishments issued by the Ministry of Road Transport and Highways dated 26 June 2021
51. The term ‘dispensing premises’ is defined to exclude areas adjacent to domestic premises. The PCR also prescribes processes to ensure safe handling of petroleum. ‘Dangerous Substances’ is defined to mean ‘any substances used or present at work that could, if not properly controlled, cause harm to people as a result of a fire or explosion or corrosion of metal’.
53. Section 3(iii) of the Norms on Roadside Infrastructure
54. Section 7.0 of the Norms on Roadside Infrastructure
Legal and regulatory review

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Benchmark country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running accommodation requires several different licences from the licensing authorities covering food service, the sale of alcohol within the hotel premises, the disposal of waste, and so on.</td>
<td>The UK’s general food safety laws (including the Food Safety Act 1990, Food Standards Act 1999 and related regulations) apply to restaurants set up in motorways. The laws require businesses that sell food to adhere to safety requirements, maintain hygiene and related aspects. Fire safety and prevention laws regulate the requirements for businesses to maintain adequate fire safety measures in the establishments. Running an accommodation business requires several different licences from local authorities, such as a food business licence, alcohol sale licence, disposal of waste and so on.</td>
</tr>
<tr>
<td>Prevent/control risks that may arise out of storing or handling of such substances.</td>
<td>To their commercial viability, State governments generally also regulate the type of businesses that may be established in RRSAs, the total area permitted for such businesses, the regulation of food handling and safety issues and as environmental law compliance requirements.</td>
</tr>
<tr>
<td>The United Kingdom</td>
<td>New Zealand</td>
</tr>
<tr>
<td>EIA is regulated by ‘The Town and Country Planning (Environmental Impact Assessment) Regulations 2017’ (“EIA Law”). The environmental impact assessment (“EIA”) is a process consisting of (i) the preparation of an environmental statement, (ii) any consultation, publication and notification required by, or by virtue of, these Regulations or any other enactment in respect of EIA development; and (iii) the steps required under regulation 26 of the EIA Law to decide whether consent to carry</td>
<td>EIA is mandatory for public works on public conservation land and is regulated under the Resource Management Act of 1991. The Resource Management Act 1991 regulates community engagement aspects for projects. The affected party/parties collectively apply to the regional environmental council. The said council decides whether the effect is minor or major based on the criteria listed in the RMA and organises a public hearing. Published a ‘Gender Action Plan 2021-2025’ which generally sets out the intention of the government to increase economic</td>
</tr>
<tr>
<td>Environmental permits and community engagement</td>
<td></td>
</tr>
</tbody>
</table>
### Legal and regulatory review

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Benchmark country</th>
</tr>
</thead>
<tbody>
<tr>
<td>on the project should be granted by the relevant authorities under the EIA Law.55</td>
<td>opportunities for women and eliminate discriminatory practices and policies.</td>
</tr>
<tr>
<td>► The EIA must identify, describe and assess in an appropriate manner, the direct and indirect significant effects of the proposed development on factors such as population and human health, biodiversity, land, soil, water, air and climate etc.</td>
<td></td>
</tr>
<tr>
<td>► UK has developed city/municipal level gender-inclusive policies for projects in general.</td>
<td></td>
</tr>
</tbody>
</table>


56 Draft guidelines for setting up new petrol pump, Central Pollution Control Board, 2020, [https://cpcb.nic.in//openpdffile.php?id=TrmV3c0ZpbGVzLzg3XzE2MDk2MDQzNzNlbWVkaWFwsG90bxI3MTQzL1BERg==](https://cpcb.nic.in//openpdffile.php?id=TrmV3c0ZpbGVzLzg3XzE2MDk2MDQzNzNlbWVkaWFwsG90bxI3MTQzL1BERg==)

## Technical specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>United States</th>
<th>United Kingdom</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Types of RRSAs</strong></td>
<td>▶ Rest Areas on Interstate Highways – no commercial services.</td>
<td>▶ Motorway Service Area (MSA) - provide the following facilities 24 hours a day:</td>
<td>▶ Motorist rest areas - for general and recreational vehicles (including caravans and motorhomes) only.</td>
</tr>
<tr>
<td></td>
<td>▶ Service Plaza - offers an array of commercial services, which is currently legal only on toll roads.</td>
<td>▶ Two hours free parking;</td>
<td>▶ Heavy Vehicle Rest Area (HVRAs) - exclusively for heavy vehicles only to support driver rest needs.</td>
</tr>
<tr>
<td></td>
<td>▶ Rest Area – Typically non-commercial facilities with parking and rest room, prohibited from selling fuel or food other than from vending machines.</td>
<td>▶ Free toilets and baby-changing facilities;</td>
<td>▶ Combined motorist and heavy vehicle rest area – designated area for trucks and general and recreational vehicles.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ A free picnic and children's play area;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ Fuel;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ Snacks and hot drinks; and</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ Access for those carrying out duties on behalf of the Secretary of State for Transport.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ Trunk Road Service Area (TRSA) - service area providing facilities for traffic using a major road that is not a motorway.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ Rest Area - similar to MSAs without the need to provide fuel or food.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ Truckstop - primarily aimed at lorry drivers, providing somewhere to park, eat and use toilets and showers.</td>
<td></td>
</tr>
<tr>
<td><strong>Intervals between RRSAs</strong></td>
<td>▶ Intervals of 96 km (60 miles), equivalent to one hour travel time on a highway.</td>
<td>▶ MSAs – General minimum interval of 45 km (28 miles) between signed service areas.</td>
<td>▶ Major Rest Areas - maximum intervals of 100 km.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ Absolute minimum acceptable distance between facilities on the same route is 19 km (12 miles).</td>
<td>▶ Minor Rest - maximum intervals of 50 km.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>▶ Truck Parking Bays - maximum intervals of 30 km.</td>
</tr>
</tbody>
</table>
Commercial considerations

<table>
<thead>
<tr>
<th>Parameter</th>
<th>India</th>
<th>United States</th>
<th>Japan</th>
<th>Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Roles and responsibilities of the Government and private sector</strong></td>
<td>▶ The National Highway Authority of India (NHAI) sets guidelines on the specific roles and responsibilities for the development of RRSAs. The policy applies to greenfield (new) and brownfield (renovated / retrofitted) RRSAs.</td>
<td>▶ Federal statutes prohibit commercial or private enterprise within Federal Interstate rights-of-way.</td>
<td>▶ Expressways and wayside amenities are constructed using Government funding.</td>
<td>▶ As part of the PPP project delivery program between 2020 – 2027, Thailand plans to develop rest areas along several roads.</td>
</tr>
<tr>
<td></td>
<td>▶ Authority is responsible for</td>
<td>▶ To unlock commercialisation opportunities, FHWA introduced the Interstate Oasis Program, under which state departments of transportation can enter into agreements with private partners for the use of safety rest area facilities.</td>
<td>▶ The private operator is responsible for toll collection and O&amp;M of RRSAs.</td>
<td>▶ The Government is responsible for land rights and main route construction; and</td>
</tr>
<tr>
<td></td>
<td>▶ Facilitating access permissions and providing general design and branding guidelines;</td>
<td>▶ Under the Oasis Program, state governments will provide signage for the RRSAs, while the private party is responsible for:</td>
<td>▶ The Government develops minimum facility requirements such as toilets, drinking water and parking.</td>
<td>▶ The private party is required to design, build, operate and maintain the facilities, takes ownership and assumes the risk over the project revenue.</td>
</tr>
<tr>
<td></td>
<td>▶ Monitoring the development and operation of the RRSA; and</td>
<td>▶ Designing the RRSA</td>
<td>▶ Additional areas are leased to the private sector for development and to provide an enhanced user experience.</td>
<td>▶ The contract terms are 30 years.</td>
</tr>
<tr>
<td></td>
<td>▶ May provide support for obtaining clearances and permits for the RRSA development</td>
<td>▶ Providing public telephone services, food and beverage, and fuel services</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Commercial considerations

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Benchmark countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manages 765 RRSAs across the United States and Canada.</td>
<td></td>
</tr>
</tbody>
</table>

### India

- Several development options are permissible such as PPP and O&M service contract. The private party bears the revenue risk under these options.
- Private parties that have land adjacent to the national highways may approach NHAI to seek agreement:
  - Develop RRSAs facilities with its own resources and operate and maintain them, assuming all the risks. The private party would pay a license fee to NHAI; and
  - Lease the land to NHAI and get a share of the revenue generated by the RRSA.

### Thailand

- Thailand does not have designated official ‘rest areas’ but there are PTT gas stations at regular intervals on major roads which are go-to stops for travellers. Most PTT gas stations also have coffee, convenience stores and toilets.
- In 2020, the Department of Highways (DOH) announced plans to develop brand new rest areas under a 30-year PPP scheme where the private party will assume the entire demand / revenue risk. The RRSAs are planned along several roads like Bang Yai - Kanchanaburi Intercity Motorway and Intercity Motorway No.7.

### Ireland

- The National Roads Authority (NRA) has developed RRSA PPPs under a 25-year design, build, finance, maintain and operate (DBFMO) contract. Several RRSAs are often bundled under a single contract.
- The private party assumed the demand / revenue risk for the RRSA. The PPP contract also included ‘minimum revenue share’ payments to be made by the private party to the NRA. In addition, a provision was made for increased revenue share payments in instances where fuel, restaurant and retail sales volumes exceeded defined thresholds.

### United States (Texas)

- The state of Texas has developed a benefit-cost methodology to reflect the overall economic merit of RRSAs and inform decision.

### Canada (Alberta)

- The province of Alberta has mandated that all commercial RRSAs will not receive any form of financial assistance from the Government. The

### South Korea

- A 2015 study by Korean academics set out a model for evaluating the financial viability of RRSA build-operate-transfer (BOT) projects based on

### New Zealand

- The New Zealand Transport Agency conducted a study on developing a high-quality network of RRSAs to support the tourism industry and
### Commercial considerations

<table>
<thead>
<tr>
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<th>Benchmark countries</th>
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► The model hence considers the riskier conditions to evaluate the financial viability of a highway RRSA BOT project, with the objective of guiding the private sector in determining its investment decision.

► improve road safety in the province of Northland.

► The study identified where RRSA investments should be targeted, what services should be provided at each site and when investment should occur.

► An economic evaluation showed the overall benefit-cost ratio (BCR) to be 1.44, after considering both tourism and safety benefits of the programme. Without the wider economic benefits through tourism, the BCR would only be 0.62.

► According to the sensitivity analysis, the BCR was most sensitive to the number of fatigue crashes that would be saved through the implementation of the programme.