

**ALLEN+CLARKE**

**EVALUATION OF THE NEW  
ROAD USER CHARGES SYSTEM**

**EVALUATION CYCLE TWO REPORT**

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## EXECUTIVE SUMMARY

In early 2012, the *Road User Charges Act 2012* was passed, which provided for a number of substantial changes to the RUC system, including:

- Changes to the definition of licence weight,
- Removal of the time licence system,
- Modernisation of the list of exempted vehicles,
- The development of a regulatory framework for electronic management systems, and
- Improvements to enhance RUC compliance.

The Ministry of Transport (the Ministry) has appointed *Allen + Clarke* to evaluate the changes to the system at various points of its implementation. In December 2012 – June 2013 a first cycle of evaluation was undertaken, which provided key findings on the development and initial implementation of the changes. These are provided in the Cycle 1 report (Allen and Clarke 2013).

This report outlines the findings of a second cycle of evaluation undertaken by *Allen + Clarke*.

### Evaluation objectives

The objective of the second cycle evaluation is to examine the medium–term impacts of the changes to the RUC system on both transport operators and government. To do so, *Allen + Clarke* together with the Ministry identified eight key areas requiring in depth assessment, including:

- Light diesel vehicles and RUC
- Heavy vehicle permits and vehicle types,
- Vehicle use, loading and purchasing,
- RUC compliance costs for transport operators,
- Electronic RUC systems,
- Revenue neutrality,
- Evasion,
- Government administrative processes,
- Enforcement.

This cycle of evaluation seeks to examine the extent to which these objectives are being met now that the RUC changes have had approximately 22 months to bed down, with particular regard to the medium term impacts the changes are having on both transport operators and government.

### Methods

The evaluation involved data collection from multiple information sources using multiple methods, including:

- case studies of various transport operators,
- review of RUC legislative and policy documents,

- review and analysis of RUC data,
- key informant interviews with government officials and industry groups, and
- surveys of LDV owner groups, trailer manufacturers and truck dealers.

### **Key findings**

This evaluation sought to understand the medium-term impacts of the 2012 changes to the RUC system on both transport operators and government. Our iterative approach based on grounded theory allowed themes and findings to emerge from both qualitative and quantitative data. The following findings emerged clearly when synthesising and analysing the data:

#### *On-going impacts of the changes on transport operators*

Understanding of the RUC system by LDV owners remains limited. Currently, inadequate education resources have meant that many LDV owners have little knowledge of the RUC system beyond the simple purchasing of RUC for their vehicle. Many survey respondents identified having learned of their RUC obligations via word of mouth rather than from an NZTA resource (commercial LDV users 43 percent, private LDV owners 60 percent). Only 13 percent of private LDV users and no commercial LDV users had received RUC education from an NZTA resource. In addition, supplementary comments from LDV users suggested they knew enough about the system to be able to purchase RUC, but lacked knowledge of the rationale for the RUC system and do not understand how costs are allocated or what the funds go towards. This lack of detailed understanding does not present a major problem as long as LDV owners are diligent in purchasing their RUC. However, the evaluation found that some LDV owners are not purchasing RUC due to misunderstanding their obligations.

Distance overrun is a common form of non-compliance among LDV owners. Over 20 percent of light passenger cars/vans were overrun from April 2013 to March 2014 at their WoF or CoF inspection, and around 17 percent of light goods vans/trucks/utility vehicles were overrun during this period. Of the survey respondents, 24 percent of LDV owners for private use admitted overrunning their distance licences and 20 percent of commercial LDV respondents allowed their distance licence to overrun. Supplementary to these findings, the Napier/Hastings CVIU ran a recent operation in which they stopped courier drivers, which returned 70% overrun distance licences.

The introduction of H permits has been viewed favourably by the industry for the productivity benefits they provide. The NZTA has identified the potential for up to 20 percent productivity gains for operators on 50MAX permits. As a result, the evaluation found that a large number of operators were moving their fleets to 50MAX permits.

This perception has corresponded with a steady increase in the percentage of HPMV distance travelled as a proportion of total distance travelled by heavy standard trucks (from 12 percent in July-September 2012 to 20 percent in April-June 2014). Interviews with NZTA administrative personnel suggested that the introduction of 50MAX permits has contributed to the increased percentage of HMPV travel observed in the most recent three quarters. H licence distance purchased by three and five axle prime movers has remained relatively steady since the beginning of 2013, whereas H licence distance for four axle prime movers is trending up more rapidly. It is likely that this is due to the uptake of 50MAX vehicle permits.

The evaluation also found some areas of concern around HPMV permits. For instance, the time taken to process applications remains a barrier for operators to uptake HPMV permits. In some instances, operators reported that they waited up to 20 days for HPMV permits to be approved, rendering their trucks immobile during this waiting period. In addition, operators perceive the requirement to pay RUC up to the permit weight rather than the load weight as unfair. As such, some operators are only purchasing up to their load weight, and running the risk of being caught. Other operators are purchasing multiple permits at different weight for the same vehicle, changing the permit depending on the load weight, and only paying RUC on the particular permit in use.

Demand for trailers has shifted to enable uptake of HPMV and 50MAX permits for greater efficiency with vehicle loading for operators. Qualitative survey results indicated a strong trend in increased demand for 5 axle full-trailers. For instance, one large manufacturer reported that these comprise 90 percent of their sales. Data on first time registration of heavy trailers indicates a clear decrease in four axle trailers and a corresponding increase in five axle trailers since changes to the RUC system took place.

The uptake of eRUC systems continues, particularly among larger fleets whose operations involve off-road travel. Analysis of RUC revenue found that from the month of July 2013 eRUC distance licence sales as a percentage of total sales increased from 13.9 percent to 17.6 percent in June of 2014. This increase in eRUC distance licence sales likely corresponds with an increase of eRUC systems within New Zealand's fleet. However, as was found in the previous cycle, smaller fleets have still been less inclined to purchase eRUC systems. Cost is the primary barrier preventing wider uptake amongst transport operators. Currently an eRUC system costs between \$800 and \$900 per unit with an additional \$40 monthly administration fee. Another eRUC systems provider is set to enter the market in the near-future, with a desire to market their system to smaller fleets. Therefore, it is possible that eRUC systems may begin to proliferate amongst smaller fleets as cheaper solution become available.

#### *On-going impacts of the RUC changes on government*

The Ministry of Transport outlined numerous goals in amending the RUC Act and has made good headway in achieving some of these.

Revenue for light and heavy vehicles overall remains neutral upon comparing expected revenue per kilometre by vehicle type and actual revenue.

Both Police data and widespread perception from across the transport industry suggest that weight based evasion has largely been eliminated. Police data estimating the percentage of RUC evasion amongst heavy vehicles indicated a reduction from 4.0 percent in 2012 to 1.2 percent in 2013. This level has been sustained in 2014 at 1.2 percent. Overall, transport operators are confident that the RUC system has become more credible due to the removal of weight based evasion. Other forms of evasion are still present however, primarily distance-based forms of evasion such as hubodometer and odometer tampering. The extent to which this is prevalent is unable to be measured; however one informant estimated that odometer switches could be installed in up to 30% of diesel vehicles he saw in pre-purchase inspections. Distance overrun, while largely recoverable, is also an on-going form of non-compliance.



The industry and Police both reported that there has been inconsistent coverage of policing on the roads, leading to an industry perception that there is inconsistency in enforcement of RUC, particularly in rural areas. One of New Zealand's largest freight operators reported that for the month of April their trucks were only stopped by CVIU officers once every 100,000km of distance travelled. Senior CVIU officers have indicated they are under-staffed, and that Police tend to focus their resources on specific areas of higher volume road use, such as state highways, giving some explanation as to factors leading to inconsistent coverage.

The new binding assessments have been successful in reducing some of the complexity, and therefore resource, in administering RUC for NZTA. The binding assessment process has removed the need for a protracted negotiation process with transport operators as well as the need to go through the court process to recover unpaid RUC. The invoicing system however is not well understood by the LDV user group, and therefore requires some work before NZTA administrative savings can be seen here. There is widespread support from all parties to move to online administrative systems for greater efficiency gains.

The new staff structure within NZTA is working well, as all staff are cross-trained and have hands on team leaders, rather than the regional approach taken previously. On-going training has been provided to the team, for example on new administrative processes such as new forms for combination vehicle types and RUC exemptions, and as a result staff feel that their output has increased. Feedback from transport operators supports this, with some commending NZTA for their help with various issues. One area excluded from this finding is the lack of clarity regarding the role of investigators of specialist assessors since the restructure.

The simplified infringement system has enabled more efficient Police enforcement, with a substantial increase in the number of infringements issued by non-CVIU officers which almost doubled over the eleven month period from August 2012. The new infringement system is favoured due to the reduction in resource required for collecting and collating evidence to present to court. The CVIU strongly support more chargeable offences being made infringements.

## **Recommendations**

Based on the findings of the second cycle of evaluation on the changes to the RUC system, we have identified a small number of recommendations relating to the on-going delivery of the new RUC system:

1. Review Section 12 of the RUC Act 2012,
2. Consider adding an additional weight band for LDVs,
3. Target better education at LDV owners to inform them of their RUC obligations,
4. Move some NZTA RUC processes from a manual to an online format, and
5. Work with Police to identify which offences they would like to become infringements, rather than court processes.

## 1 INTRODUCTION

The Ministry of Transport (the Ministry) appointed Allen and Clarke Policy and Regulatory Specialists Ltd (*Allen + Clarke*) to conduct a second cycle of evaluation to assess the on-going impacts of the 2012 changes to the Road User Charges (RUC) system. The Ministry is interested in learning about the medium-term impacts of the implementation of the changes to the RUC system to inform adjustments or improvements to its on-going implementation. This report presents the findings of the second cycle of evaluation, which was undertaken between February 2014 and July 2014.

### 1.1 Purpose

The Ministry is planning to undertake three cycles of evaluation of the new RUC system, as many of the outcomes expected to be achieved with the changes to the RUC system will become apparent over the longer term (i.e. within three to five years). The previous evaluation cycle (Cycle 1) focused on the development and implementation of the RUC changes, and particularly the early and immediate impacts on both users of the system and on those who administer or enforce the system. The second cycle builds on the findings of the Cycle 1 evaluation. As such, there are three overarching focuses for both evaluation rounds (Cycles 1 and 2) that include:

- Measuring progress toward the stated objectives and outcomes of the changes,
- Comparing the effectiveness of the modernised RUC system to the previous system, and
- Providing evidence to inform any adjustments to the system.

The first evaluation cycle took place shortly after the new system had been implemented, and as a result in some instances it was too early to ascertain if some of the expected outcomes had occurred. The new system has now been operating for approximately 22 months, therefore allowing for a more comprehensive assessment of whether the intended outcomes of the new system have been achieved. The first cycle of evaluation focused at the individual operational level, whereas the second cycle focuses more on the systemic level, and places greater emphasis on the analysis of RUC data collected by NZTA. As such, overall trends across the industry have become more apparent.

The Cycle 2 evaluation has incorporated and extended research areas of the Cycle 1 evaluation. To this end it:

- Considers the overarching themes of efficiency, equity, cost recovery, and integrity at the system level,
- Considers the impact the of the RUC changes on enforcement and levels of evasion within heavy vehicles and light diesel vehicles (LDVs),
- Analyses the impact of the RUC changes on specific user groups for instance eRUC system users and providers, overweight permit operators and light vehicle owners, and
- Analyses monitoring data for any emerging trends regarding changes in vehicle purchasing patterns and shifts in loading patterns and vehicle use.

## 1.2 Audience

The main audiences for this evaluation are the Ministry of Transport, the New Zealand Transport Agency (the NZTA), the NZ Police, commercial transport operators and industry groups.

As the government's principal transport adviser, the Ministry of Transport's involvement in the RUC system covers policy, legislation and regulation, reviewing and setting RUC rates, performance and accountability, and managing the relationship between the government and the NZTA.

The NZTA, as the RUC collector, provides administrative and accounting services, including the issuing of RUC licences, collection of RUC, processing of RUC refunds, and the maintenance of a RUC information database. The NZTA also delivers detection of RUC evasion and debt recovery services, including targeted investigation programmes to identify evasion and non-payment of RUC revenues, the auditing of operators' records to validate refund claims, the recovery of evaded revenue, and industry liaison and education to ensure compliance.

The NZ Police provide support in enforcing the RUC system through roadside checks of vehicles and RUC licences, and the issuing of infringement notices.

The transport industry, including commercial operators and industry groups, is also a major stakeholder in the evaluation. While this report in its entirety may not be relevant to this audience, there is likely to be significant interest in specific evaluation findings, and it will be important to ensure that key findings are disseminated to the industry.

## 1.3 Structure of this report

The remainder of this report is structured as follows:

- **Section 2** provides a background of the key changes to the RUC system,
- **Section 3** sets out the evaluation methodology, including the overall approach to design, the evaluation objectives and questions, and the specific methods,
- **Sections 4 and 5** present the main evaluation findings organised under the headings of each of the nine expected outcomes set out in the evaluation objectives, split into impacts on transport operators and impacts on government.
- **Section 6** includes conclusions based on the evaluation findings, and our recommendations for the on-going implementation the new RUC system.

## 2 BACKGROUND AND CONTEXT

The RUC system was set up in 1978 as a means of collecting taxes from the users of diesel vehicles for roading purposes. The charges are intended to recover a range of costs associated with providing and maintaining roading infrastructure, as well as activities such as public transport operating subsidies and road safety policing. Most of these costs are the same for all vehicles. However, charges for heavy vehicles vary considerably, reflecting differences in the estimated road wear caused by vehicles of different weights and with different numbers of tyres and axles.

On 14 February 2012, the *Road User Charges Act 2012* was passed to replace the *Road User Charges Act 1977*. The passing of the new RUC Act provided for a number of significant changes to the RUC system, which came into effect from 1 August 2012. The changes were designed to modernise and simplify the RUC system for both government and industry, including lower compliance costs for transport operators and administrative costs for government, reduced RUC evasion and increased compliance with the RUC system. The changes were:

### 1. Change to the definition of licence weight

Under the new RUC system the operator nominated weight aspect of the previous system has been removed. Vehicles are now allocated a fixed 'RUC weight' which is the maximum permissible gross laden vehicle weight. Based on this RUC weight band, along with axle configuration, RUC charges are allocated by vehicle type. Each vehicle type covers a range of RUC weights and for some types (e.g. four axle trucks) there is only one charge for all weights. The charge for each vehicle type or weight band has been calculated to reflect the average licence weight previously nominated for the vehicles concerned. For example, the charge for all type two vehicles with RUC weights of over 9 and up to 12 tonnes is similar to the previous charge for a 9 tonne licence, as this was the average weight nominated under the previous system for vehicles of that type and maximum weight.

The removal of operator nominated weight also means there is no longer a need for supplementary licences. In addition, the new system has introduced new 'combination' vehicle types that operators can opt to use for trucks and trailers used only in specific combinations. This has, in effect, removed the need for operators to carry separate RUC licences for both trucks and trailers.

### 2. Reform of the list of exempted vehicles and the time licence system

The list of vehicles exempt from RUC was simplified. The changes were intended to modernise the approach to vehicle exemptions, so that it is based on vehicle design, rather than vehicle use. Under the time licence system a small number of vehicles (such as various heavy machinery related to construction, forestry and road maintenance; and unregistered motor vehicles operating under trade plates) used time licences to travel on the road for a certain period of time. These vehicles were not exempted from RUC as they were considered to travel on the roading network more frequently than those that were exempt. However, the system had high administration costs in proportion to the revenue gained by government (i.e. the revenue-cost ratio was low), there were high compliance costs for operators and it added to the overall complexity of the system. The time licence system has been removed from the new RUC system. Most vehicles that were previously subject to a time licence have become exempt from RUC.

### 3. Regulatory framework for electronic management systems

The changes to the RUC system introduced a single, composite approvals process for companies wishing to provide electronic RUC. The new system also includes a statutory requirement for electronic system providers to collect and store RUC information, a code of practice for eRUC systems, display requirements which are set out in regulations (rather than statute) and therefore easier to update, and a requirement that the electronic distance recorder (EDR) must be produced by operators on demand.

### 4. Improvement in compliance processes

Since the operator nominated weight dimension of RUC has been removed from the new system, penalties for weight-based offences are no longer necessary. The penalties for distance-based evasion (i.e. vehicles overrunning the distance that has been purchased on their RUC licence or falsifying information about the distance travelled) have been updated to include more stringent penalties around hubodometer tampering and other dishonest practices, and a flat infringement fine for distance overrun.

Other regulations to reduce distance-based evasion and late payment of RUC include requirements for operators to create, maintain and retain records, requirements for vehicle inspectors to report odometer readings to the NZTA as part of the Warrant of Fitness (WoF)/Certificate of Fitness (CoF) inspection process, and the introduction of a new assessment system for underpaid RUC in which the RUC collector conducts an inquiry and issues a binding assessment.

## 2.1 Summary of key findings from Cycle 1 evaluation

The Cycle 1 evaluation revealed several key themes, including:

- Overall, operators generally felt that the new RUC system was easier to understand and simpler to work with than the previous system,
- The system had not yet been operating long enough to determine whether there will be administrative cost savings for individual operators, but there is potential for future cost savings,
- The changes to the RUC system had not increased the total revenue collected by the government,
- The changes have had the greatest impact on operators of vehicles that carry loads significantly lighter than the vehicle's maximum legal weight,
- Many transport industry representatives perceive the new system to be more difficult to evade, and
- The uptake of electronic RUC is increasing and there are opportunities for further efficiencies.

More details of the findings from the first cycle of evaluation are in the Cycle 1 report.

### 3 METHODOLOGY

This section sets out our approach to the evaluation, the evaluation objectives and questions, a summary of the information sources, methods and analysis, and an overview of the strengths and limitations of the evaluation.

#### 3.1 Evaluation approach

The evaluation examined the on-going effects of the new RUC system. The evaluation covered the period when the changes had been in place for 18 to 22 months, and had begun to 'bed down'. To this end, it aimed to document the medium-term impacts on the private transport operators and the government, and identify key issues that can be used to improve elements of the new RUC system.

This second cycle of evaluation retained a focus on processes related to the new RUC system, including how individual transport operators, the NZTA and the Police had adapted to the changes. It also drew on NZTA monitoring information relating to the RUC system to explore impacts at the system level that may not be identifiable through engagement with individual operators.

The evaluation team met with key stakeholders at regular intervals, including an initial meeting with the Ministry to discuss and agree evaluation questions for this second cycle and expected outcomes. This was followed up by a mid-project engagement to share preliminary evaluation findings, as well as a 'sense making' meeting with the RUC Evaluation Steering Group, during which the evaluation team presented the overall findings and sought feedback. These engagements allowed all parties to come to a shared understanding to inform future modifications and amendments to the RUC system.

#### 3.2 Evaluation objectives

In early 2014 members of the evaluation team worked with the Ministry to develop a framework for the Cycle 2 evaluation. Based on the Cycle 1 evaluation, the Ministry had identified several key themes that they wished to explore in more depth. These include:

##### Revenue neutrality

- The extent to which the system is able to maintain the required amount of revenue for the National Land Transport Fund (a revenue neutral outcome).

##### Government administrative processes

- The effectiveness of the new assessment processes in recovering unpaid RUC, and
- The ability of the NZ Transport Agency to reduce compliance costs through alternative payment schemes or electronic refunds and greater efficiency across its administration processes.

##### Permits and vehicle types

- How well the RUC system aligns and operates with high productivity and over-weight permits,
- The extent to which RUC is seen to facilitate or obstruct uptake of high productivity permits,
- Any patterns in RUC sales trends for different vehicle types (including uptake of H types) and the implications, if any, for revenue and freight efficiency, and

- Any trends in data regarding changes of vehicle type and overlapping licences to determine whether there is evidence that this results in loss of revenue.

#### **Electronic RUC systems**

- The type and extent of benefits experienced by operators and government from the uptake of electronic RUC systems,
- The demographic of operators taking on eRUC systems and incentives for their uptake, and
- Details regarding the development of new Code of Practice for eRUC systems and ascertain how well it is working.

#### **Vehicle use, loading and purchasing**

- Any patterns in Weigh-in-Motion data to determine whether there has been a shift in patterns of loading or vehicle types used,
- Any trends in truck and trailer registrations regarding the types of new vehicles being ordered, and
- Key influences for changes in purchasing patterns.

#### **Enforcement**

- The on-going effects of the RUC changes for Police,
- Any efficiency gains made by Police as a result of the RUC changes,
- The extent of Police understanding of the new RUC system, and
- Police perceptions of the RUC system and their role within it.

#### **Evasion**

- The on-going impacts of the RUC changes on evasion
- What drives compliance for light vehicle owners and what improvements they would like to see to the system,
- Estimates of the extent of RUC evasion by light vehicle owners

These evaluation objectives loosely structure the body of this evaluation report. Sets of evaluation questions were developed for each theme, which are included in Appendix A.

### **3.3 Information sources and methods**

The information and evidence required to answer the evaluation questions was gathered from multiple sources and through multiple methods. These methods included:

- Case studies of various transport operators,
- RUC legislative and draft documents,
- Review and analysis of RUC data,
- Key informant interviews with government and industry groups, and
- Surveys of LDV owner groups, trailer manufacturers and truck dealers,

Further details of methods are provided below.

### 3.3.1 Case studies

The evaluation included 13 case studies with transport operators, which were selected to represent a broad range of transport industries and road users. The main objective of the case studies was to gather industry perceptions and perspectives on how the updated RUC system had affected them in the medium-term. Additionally, these case studies provided the evaluation team with an opportunity to explore the extent to which operators' perceptions had changed over the 12 month period. A portion of the case studies selected also participated in the Cycle 1 evaluation.

In most instances case study interviews were conducted with a single firm or organisation, with between one to three informants. Company size varied from a small three truck owner-operated firm, to a large company with a 1,000 vehicle fleet that operated extensively nationwide. Operators represented a range of sectors, including couriers, aggregate carriers, food and grocery carriers, dairy carriers, general freight, car transporters and forestry transporters.

Respondents were asked questions pertaining to the key areas of focus for the Cycle 2 evaluation. These questions touched on:

- Background information (company size, number of employees, number and type of vehicles),
- Views of the 2012 RUC changes,
- Changes to administrative process,
- Permit use and perceptions,
- Perceptions of the extent of evasion, and effectiveness of the 2012 RUC changes in reducing evasion,
- Perceptions of the binding assessments process,
- Use of electronic RUC systems, and perceived incentives and barriers to their uptake,
- The impact of the RUC changes to vehicle use, loading and purchases, and
- Perceptions of Police enforcement of RUC.

The case study interview guide is provided in appendix two.

### 3.3.2 Review of RUC legislative and policy documents

The evaluation team reviewed a range of documents related to the initial changes to the RUC system and on-going system updates. These included the RUC Act 2012 and subsequent amendments, NZTA internal documentation related to policy positions and assessment methodologies, media releases on updates to the RUC system and the Draft Code of Practice for Electronic Road User Charges Management Systems. These documents were used to highlight key issues and assumptions that were tested through the survey, data review and engagement with operators, as well as to inform the analytical discussion within this report.

### 3.3.3 Review analysis of RUC data

*Allen + Clarke* sub-contracted a majority of the quantitative analysis to *Ian Wallis Associates Ltd*. *Allen + Clarke* met regularly with representatives of their team to select relevant data sets, develop a framework of indicators and sources, analyse the data and identify key trends. These data sources



included NZTA RUC revenue and transactional data, weigh-in-motion data, registration data, and NZ Police data.

### **3.3.4 Key informant interviews with government and industry groups**

We interviewed informants from various industry groups with experience and expertise on the RUC system as well as representatives from relevant government agencies. The interviews collected qualitative information on the medium-term impacts of the new RUC system. The key informants interviewed included two Ministry of Transport staff, four NZTA Wellington staff, six NZTA Palmerston North staff, two senior NZ Police staff, two CVIU officers, two current electronic management systems (EMS) providers and one expectant provider, one Standards New Zealand staff member, and representatives from six transport industry associations.

Key informants were asked specific questions pertaining to their field and knowledge base, from tailored interview guides.

### **3.3.5 Surveys of LDV owners**

Two surveys were conducted of private LDV and commercial LDV owners respectively. These surveys provided data that could be used to compare and support the more detailed information gathered during the case studies and key informant interviews. The survey questions were very similar for each survey, and sought information pertaining to LDV owners' knowledge and behaviour related to RUC, such as regularity of RUC purchasing, triggers for RUC purchasing, perceived knowledge of the RUC system, and feedback identifying possible gaps in understanding the system. The commercial LDV owners survey had additional questions regarding the type of business and purpose for which the LDV was being used. A copy of each survey is attached in appendix three and appendix four respectively.

Each survey sought a sample size of 50. The private LDV respondents sample was collected via a face to face intercept technique, whereby a team of two evaluators visited petrol stations at four sites across the Wellington region: Newtown, Wellington Central, Porirua and Lower Hutt and approached those using diesel pumps. Commercial LDV users were picked up via this intercept method also, and this sample was supplemented with a targeted telephone approach of commercial operators likely to be using LDVs, such as those in trades. The commercial sample spanned builders, plumbers, electricians, furniture movers, courier drivers, among others.

The response rate for private LDV owners was 42 percent, with 21 respondents. The response rate for commercial LDV users was 50 percent with 25 respondents. Given a relatively low response rate, the results of these surveys should be treated with caution and considered in conjunction with supplementary data gathered in this evaluation.

### **3.3.6 Surveys of trailer manufacturers and truck dealers**

Two telephone-administered surveys were conducted with heavy trailer manufacturers and truck dealers respectively, which collected primarily qualitative information. In both surveys, background questions were asked about the company to determine what kind of market they manufactured and dealt for, and an approximate size of the companies' output.

The sample size for the survey of trailer manufacturers was 20, with a response rate of 50 percent, or ten manufacturers. Respondents were asked questions to determine the extent of any shift in trailer demand from the industry by asking them what the most common trailer configuration ordered was prior to the changes to the RUC system to establish a comparative baseline, followed by which trailer configurations were most commonly manufactured following the changes to the RUC system and the introduction of the HPMV and 50MAX permits. Respondents were then asked their perceptions regarding the extent to which the changes to the RUC system and the introduction of the HPMV and 50MAX permits had on trailer demand.

The sample size for the survey of truck dealers was 20, with a response rate of 40 percent, or eight truck dealers. The structure of the survey for truck dealers was similar to that of the trailer manufacturers, and was intended to compare truck demand before and after the introduction of the new RUC system and HPMV and 50MAX permitting regimes. Respondents were then also asked for their perceptions of the extent to which these two new systems brought about change.

Due to the qualitative nature of these surveys, the types of responses from the respondents varied somewhat. Some respondents were happy to give exact numbers and percentages to indicate the change, whilst others viewed this information as commercially sensitive and only wanted to provide trends.

As all surveys had relatively low response rates, we suggest treating these findings with caution, and interpreting them alongside supplementary data from the other information sources considered in this evaluation.

### **3.4 Analysis**

We took an iterative approach based on grounded theory that allows themes and findings to emerge from both qualitative and quantitative data and trends. From this, the analysis focused on synthesising and triangulating information from the various data sources and evaluation methods.

We used a variety of data sources to build up evidence to address each part of the evaluation. This involved analysing qualitative information from interviews, case studies and literature, corroborated with quantitative material such as the NZTA RUC data and analysis of the survey data. Through the evaluation process, we revisited our findings to discern whether and how the supporting and relevant evidence correlated with the initial findings.

The evaluation generally considered data and evidence to be more valid when the analysis recognised a convergence in opinions and experiences across multiple sources, and therefore it was given greater importance. However, we recognise that the on-going impacts of the changes to the RUC system vary for different operators and in different contexts. Therefore, we have also reflected opinions and experiences that are not widely shared, but are illustrative of a particular or idiosyncratic situation or consideration.

### 3.5 Strengths and limitations

The key strengths of the evaluation approach and methodology is its consideration of context relating to how the on-going changes to the RUC system have impacted a broad range of transport industry sectors and groups. The case studies allowed us to collect context-rich and detailed information from a variety of operators of different sizes and locations. This broad spectrum approach also allowed us to consider the on-going impacts of the RUC changes at a systemic and national level.

The limitations of the evaluation methodology relate mostly to the idiosyncratic nature of the case studies, which often provided perceptions based on a very categorical set of experiences specific to the respondents. In effect, this limited their ability to provide generalisable information. In addition, the size of many of the commercial case study operators may be unrepresentative of the industry as a whole. We sought to interview a number of companies with smaller fleets; however the limited nature of their operations did not provide them the same opportunity to be able to be interviewed. As such, a majority of our interviews were conducted with companies with larger fleets, as they often had more capacity and time to be interviewed.

As in the Cycle 1 evaluation, case studies tended to include relatively well established organisations. This may have influenced the evaluation findings on evasion, which draws on operators' perceptions, as these case study operators were more likely to be compliant (or at least claim to be compliant) than the industry as a whole.

The case studies of this cycle of evaluation were also more targeted toward companies that operated trucks at the higher weight bands due to the more recent introduction of HPMV and 50MAX permits. As such, the case study information obtained lacked insight into the medium-term impacts for operators that predominately used trucks in the lower RUC weight brackets such as the six to fourteen tonne Type 1 and 2 powered vehicles.

The sample size for both the trailer manufacturer and truck dealer surveys were relatively small, as a majority of respondents of the sample did not wish to participate, or were noncommittal. Therefore, any trends extrapolated from this survey must be qualified by the size limitations of the sample. However, in the case of the trailer manufactures survey, the limitations of this sample size are somewhat offset by the clear trends that emerged, that would likely have been present throughout the heavy trailer manufacturing industry, regardless of sample size.

The limitations of the surveys conducted for both private and commercial LDV owners follow a similar trend to those outlined for the surveys of trailer manufacturers and truck dealers. Using both a face-to-face intercept method and via telephone was met with resistance to participation by some. As such, while some clear trends emerged, these should be treated with caution and considered alongside additional information sources used in our analysis due to the relatively limited sample size achieved.

## 4 IMPACTS OF THE RUC SYSTEM ON TRANSPORT OPERATORS

### 4.1 Light diesel vehicles

This section considers the impact the RUC system has on the light diesel vehicle (LDV) user group, with particular attention given to the extent to which LDV owners understand the RUC system, the extent to which LDV owners are compliant with their RUC obligations, and any improvements that could be made to enhance the RUC system in relation to LDVs.

Several key findings emerged through the evaluation, identifying that LDV users do not fully understand the RUC system beyond their individual obligations. While LDV owners themselves think they have adequate knowledge of the RUC system, this is primarily related to the purchasing of RUC, rather than the broader rationale for the system. This lack of understanding may lead to several issues such as not purchasing RUC and perceptions of inequity. Secondly, while there is no definitive way to measure compliance amongst LDVs, perceptions suggest that there is a degree of non-compliance occurring. Several interventions have been identified as a way of mitigating issues arising within each of these findings, which are discussed below.

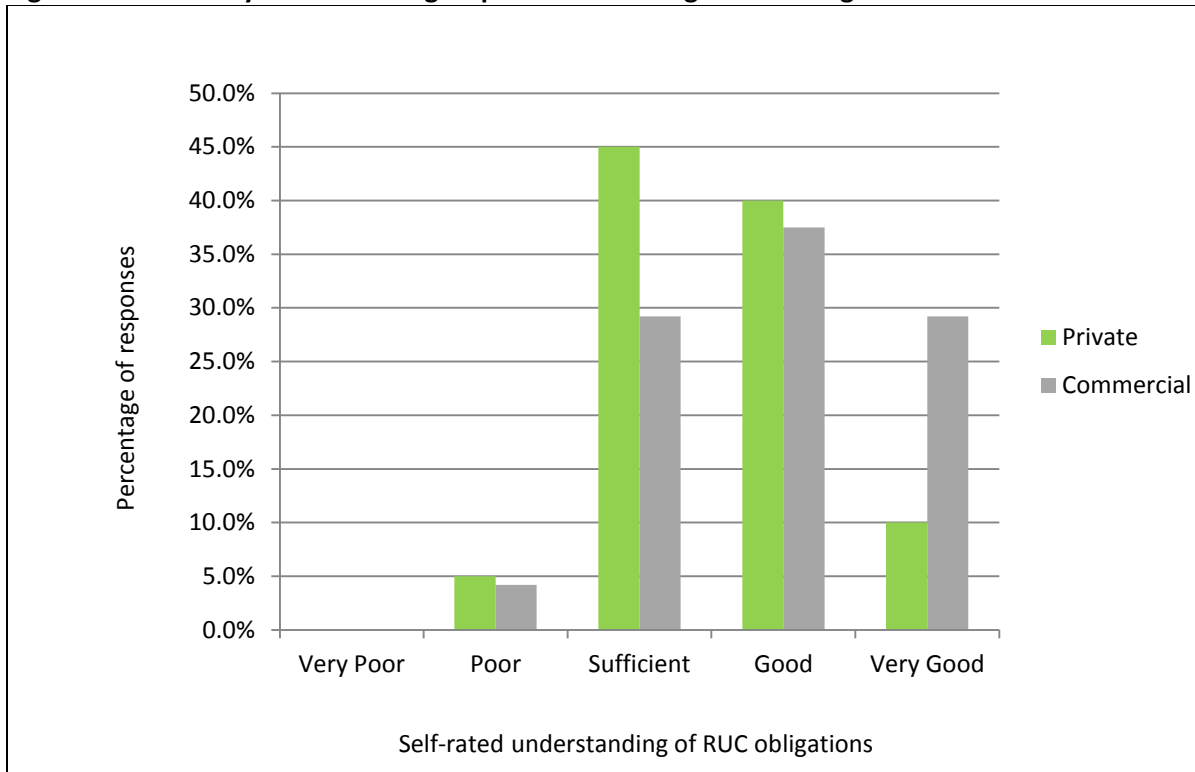
It should be noted that these findings, with the exception of the issues regarding RUC weight bands, existed prior to the RUC changes, and are therefore not emerging as a result of these. The findings from within the LDV user group however have the potential to impact RUC administration and revenue, and for this reason have been considered as part of this evaluation.

#### 4.1.1 LDV users have adequate understanding of the RUC system to enable them to purchase RUC, but lack understanding of the system rationale

Perceptions held by the NZTA and shared by many in industry associations indicate that LDV owners have a lack of understanding of the RUC system. While LDV owners may have adequate knowledge of their own requirement to purchase RUC, perceptions suggest this same group have little knowledge of details such as why RUC is an additional charge to their diesel costs, what RUC revenue is used for, and why this differs to petrol vehicles. Most LDV owners are at least vaguely aware that the RUC they purchase is to fund road wear and tear, but lack more detailed knowledge of how RUC costs are allocated or the rationale behind the weight band system.

On the other hand, LDV owners themselves rate their knowledge of the RUC system as adequate. The graph below depicts survey respondents' self-ratings of knowledge about their RUC obligations. As shown, most respondents believed that they have satisfactory knowledge of their individual RUC obligation, with commercial LDV owners generally rating their understanding of their RUC obligations more highly than private LDV owners.

**Figure 1: LDV Survey Results: user groups' understanding of RUC obligations**



In response to a follow up question on where survey respondents had learned of their RUC obligations 43 percent of commercial LDV users and 60 percent of private LDV survey respondents identified ‘word of mouth’ or ‘you just know’ as their source of RUC education. Only 13 percent of private LDV users and no commercial LDV users had received RUC education from an NZTA resource.

This lack of detailed understanding does not present a major problem as long as LDV owners are diligent in purchasing their RUC. The lack of detailed understanding may however lead to several issues, such as a select few not purchasing RUC due to misunderstanding their obligations. For example, several industry association representatives stated that people who have previously owned petrol cars may not be aware of the need to purchase RUC as petrol cars pay excise tax at the pump. As little information about RUC is provided at the point of vehicle purchase or available at venues such as vehicle WoF inspection sites or NZTA vehicle registration agents, some new LDV owners may not be aware of their RUC obligations and may unintentionally overrun their licence.

Another group which may not understand their RUC obligations is new migrants. One NZTA staff member identified that language barriers can often prove challenging when dealing with customers, and she hears of instances where RUC is a very new concept to people arriving in New Zealand who did not have to pay RUC in their home country, thereby resulting in some misunderstanding, and misconception about the price of running a diesel vehicle. People in this situation often seek face to face time with someone to explain the system, but there are no resources for this. The lack of understanding in this context may result in RUC not being purchased.

Additionally, many LDV owners are unaware of the how costs are allocated across vehicle types and weight categories within the RUC system, particularly since the changes to the RUC system introduced one weight category for all LDVs. The fact that all LDVs pay the same, whether the vehicle is a large four wheel drive or a small hatchback, is confusing for them. This has led to some perceptions from LDV owners of inequity and unfairness due to the fact that RUC rates are the same for all vehicles under 3.5 tonnes, despite variance of vehicle weights within the LDV vehicle type. One industry association suggested the introduction of new weight band for small cars within the LDV bracket, justifying that it would not make much difference to the overall RUC revenue, but would go a long way to appeasing vehicle owners. There is some precedent for adding an additional vehicle type; members of the New Zealand Motor Caravan Association responded appreciatively to the creation of vehicle types 413 and 414 for three and four axle motor caravans respectively on 1 July 2014. The addition of these vehicle types went a long way to appeasing this group who felt they were disadvantaged by the original RUC vehicle type and RUC rate assigned to them.

While this suggestion could help to mitigate perceptions of inequity, we note that there is very little difference in the actual damage caused by LDVs to the roads between different types of vehicles under 3.5 tonnes. On a purely cost recovery basis there is little rationale for adding an additional weight bracket for smaller LDVs, and we acknowledge that this may detract from the simplicity of the new RUC regime. However, the overall cost to pursue this suggestion would be very little and the Ministry could consider whether they pursue this as a goodwill gesture to satisfy the LDV user group provided that it aligns with the legislative purpose of the Act (Section 3), which states that “charges on RUC vehicles for their use of the roads that are in proportion to the costs that the vehicles generate”.

#### **4.1.2 Gaps in understanding could be mitigated through the provision of educational resources on RUC targeting LDV owners**

Several possible reasons have been identified for why this lack of understanding may be present. Primarily however these all fit under one umbrella, being a gap in the provision of specific information about RUC for LDV owners. The NZTA perceive there to be inadequate information provided about RUC to new owners at the point of purchase, whether this be from a vehicle dealer or a private seller. NZTA staff have been privy to many stories whereby vehicles have been sold on without notification of RUC obligations or whether there is RUC owing on the vehicle.

The LDV user group have also highlighted a distinct lack of educational resources about RUC for LDV users. Whereas many commercial LDV users have been provided training on their RUC obligations by their employers (where their business operations may be at stake for not complying with RUC), private users identified the need for educational resources. Widespread feedback from survey respondents suggests that the current resources available are not satisfactory.

Many survey respondents identified the need for a pamphlet or brochure available at petrol stations, RUC agents, and vehicle dealerships. Further feedback from NZTA suggested that this same information could be distributed with vehicle change of ownership forms. Respondents, along with NZTA staff, identified that any official resource would need to be user friendly, using plain-language to provide a basic overview of the RUC system, and RUC obligations for LDV vehicles, along with the rationale and purpose for these. A brochure format would allow a brief overview and key points, so as to not ‘bog down’ readers, however it should also provide a link to additional resources where more in depth

information is available, such as the NZTA website. Furthermore, an educational resource must be widely accessible to those needing it and must be available at RUC agents, petrol stations, vehicle dealers, on the website, and provided with change of ownership forms for second-hand vehicle sales.

The NZTA website is another medium of information which LDV users have suggested is hard to navigate, and targeted to heavy vehicles rather than LDVs. It is often private LDV owners that need additional information to understand RUC as it is not a day to day consideration for them, and unlike commercial operators using LDVs and heavy haulage transport operators, they do not depend on having a distance licence for the purpose of their business day to day. Furthermore, LDV users, particularly private, are less likely to be able to get information or training from others who have been in the transport industry using diesel vehicles for a long time. Currently the website provides an overview relevant to LDVs outlining the differences between RUC for diesel vehicles and tax charged at the pump for petrol vehicles, however this is hard to find, and is perhaps not targeted specifically enough for LDV users.

Given that the NZTA website is undergoing a review over approximately the next 12 months, a suggestion would be to give some focus to using this opportunity to develop relevant and easy to access information for LDV owners.

An overwhelming majority of survey respondents (86 percent of private respondents and 88 percent of commercial respondents) identified their trigger for purchasing RUC as checking their odometer and their windscreen label. Many also however identified that they often forget to do this, and suggested a number of reminder options to aid in triggering the timely purchase of RUC. Users and the NZTA provided several suggestions for reminder methods, including:

- Reminder notices with registration reminders,
- Reminder notices at diesel pumps, and
- Consideration of additional advertising of road user charges obligations, either on the radio or television.

NZTA have considered the impact that reminder letters may have in decreasing distance overrun, and recently trialled sending reminder letters to customers who had overdue RUC payments based on the exception report. However, as this was a one off intervention and it is too early to measure its effectiveness. Addressing the confusion outlined in Section 5.3 regarding the LDV invoicing system may aid recovery of RUC also and encourage pre-payment. One step towards this is shifting the trigger for automatic invoicing from 12,000km to 2,000km overrun from the beginning of June this year.

NZTA have also confirmed they have considered some of the recommendations for reminding people of their RUC obligations previously, including notices on diesel pumps, which was met with some challenge from fuel companies, and providing RUC information with vehicle change of ownership forms. We recommended re-addressing these reminder methods as LDV survey respondents specifically identified these as having the potential for success.

#### 4.1.2 Intentional and unintentional compliance issues are on-going with LDV users

The second key finding relating to the LDV user group identifies that levels of compliance with RUC are perhaps not as good as they could be among LDV owners, and non-compliance is occurring in several different ways.

There are few robust methodologies available to measure non-compliance among LDVs, primarily because the forms of intentional non-compliance, such as odometer tampering discussed in Section 5.2, are hard to identify and therefore difficult to track. There are however suggestions from both NZTA and the transport industry that perhaps due to less enforcement and investigative focus on the LDV vehicle category, non-compliance is higher here. Some LDV survey respondents touched on this observation also.

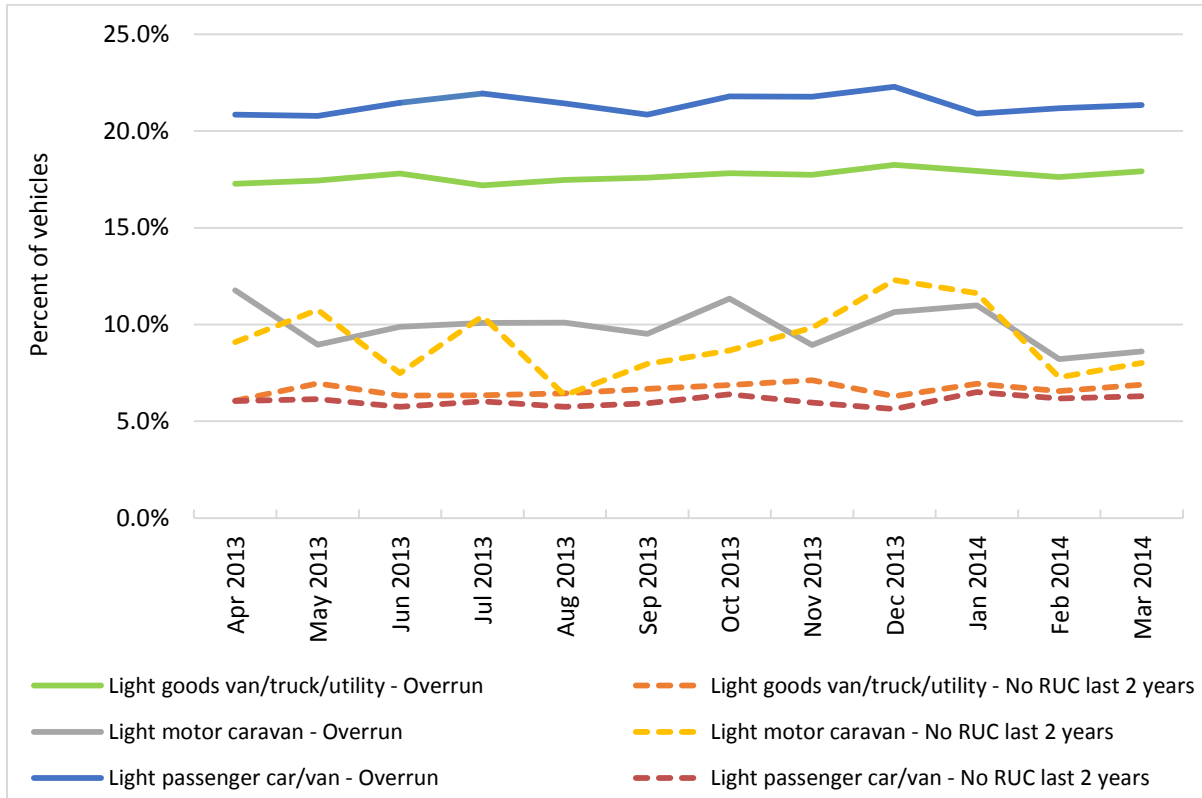
Odometer tampering was reported to be a common form of intentional non-compliance by LDVs, particularly amongst commercial LDV owners. Tampering is usually undertaken by either disconnecting the odometer, or installing a switch. Anecdotal reports from government agencies and industry associations suggest this is a key form of evasion, but the extent to which it is occurring is difficult to measure. The issue of odometer tampering and specific examples are discussed in more detail in the section of this report covering evasion (Section 5.2.2).

The issue of distance overrun is also identified as an on-going form of non-compliance; however this is recoverable and recovered in most cases, and for the purposes of this report it should be considered separate to evasion. Distance overrun is complex, in that it can be both intentional and unintentional. Some LDV owners choose to not purchase their RUC and wait for an invoice, while others simply forget to keep track of their distance travelled and distance remaining, and therefore overrun the distance licence. Lack of understanding of RUC obligations may be another factor causing overrun, whereby LDV owners are unaware of their obligation to pre-purchase RUC, purchase RUC at all, or may not be able to afford RUC due to underestimating the on-going costs of LDVs or having other financial hardship. There are several potential explanations regarding why people fail purchase RUC. As previously mentioned, a lack of understanding of RUC obligations or financial hardship may be the cause, however to get a conclusive answer to this question regarding both intentional and unintentional non-compliance would require a specifically designed study for this purpose alone.

The data contained in the graph below highlights that distance overrun is common among LDVs. Over 20 percent of light passenger cars/vans were overrun from April 2013 to March 2014, and around 17 percent of light goods vans/trucks/utility vehicles were overrun during this period. Some vehicles were registered as having no RUC distance licence during this time, of which light motor caravans were the worst offenders, spiking at around 13 percent in December 2013, with light goods vehicles and light passenger vehicles without a RUC licence trending around 6-7 percent.

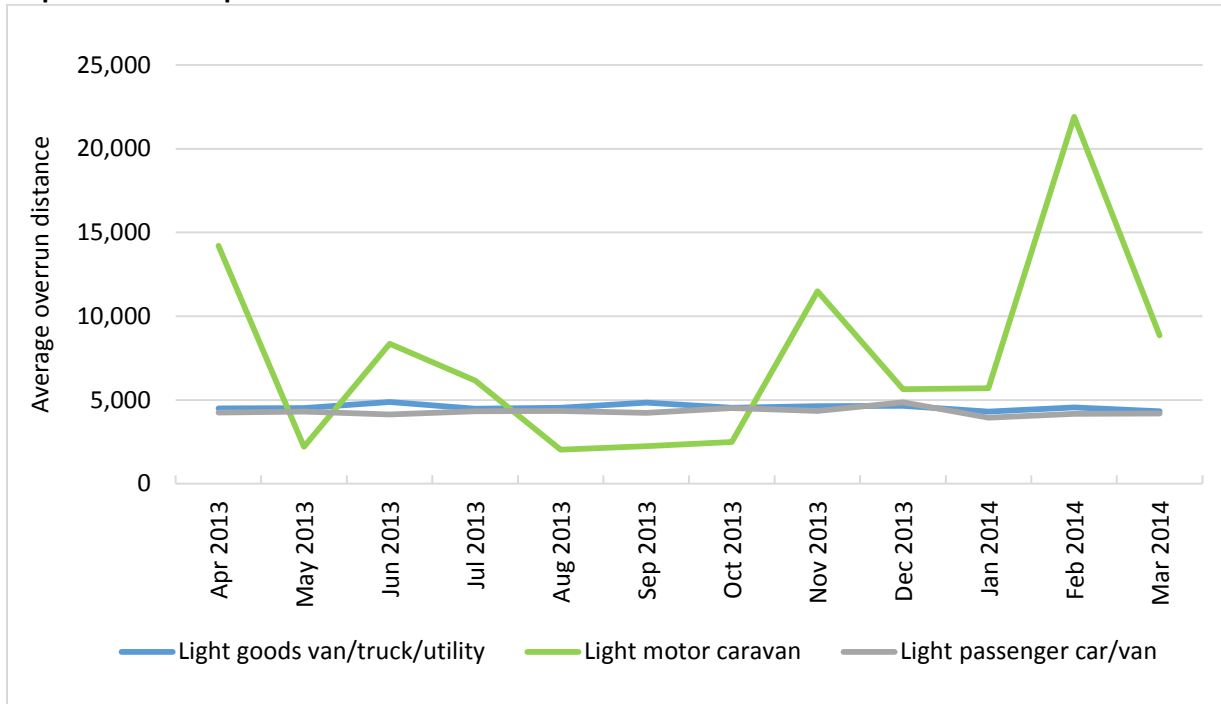


**Figure 2: Percent of LDVs by vehicle type for vehicles that passed WOF/COF with an overrun distance or with no RUC**



The graph below indicates that the average overrun distance for LDVs (goods van/truck/utility and passenger car/van) is quite high, ranging on average between 4000 and 5000km. Light motorhome overruns peak seasonally and in February 2014 surpassed 20,000km as the average distance overrun.

**Figure 3: Average overrun distance of light diesel vehicles by vehicle type that passed WOF/COF inspection from April 2013 to March 2014.**



This data resonates with the findings of the surveys of private and commercial LDV owners, in which many respondents admitted that they often wait until their distance licence is overrun before purchasing more RUC. Of the survey respondents, 24 percent of LDV owners for private use admitted overrunning their distance licences, with a further 24 percent allowing their distance licence to run down to less than 50km remaining. Of the survey respondents operating commercial LDVs, 20 percent allowed their distance licence to overrun, and a further 20 percent ran their distance licence to less than 50km remaining. This suggests a willingness among LDV owners to overrun their distance licences thereby creating a risk for NZTA which may struggle to recover all of this debt due to the complications with the current LDV invoicing system (see Section 5.3).

Having identified that some LDV owners are prepared to overrun their distance licences, further survey data proves interesting to test whether or not the \$200 fine acts a deterrent to overrunning a distance licence. The survey results also provide an indication from those who were unaware of the fine as to the potential for behaviour change with appropriate interventions or mitigation strategies to address areas of non-compliance, such as greater information sharing of obligations and relevant penalties.

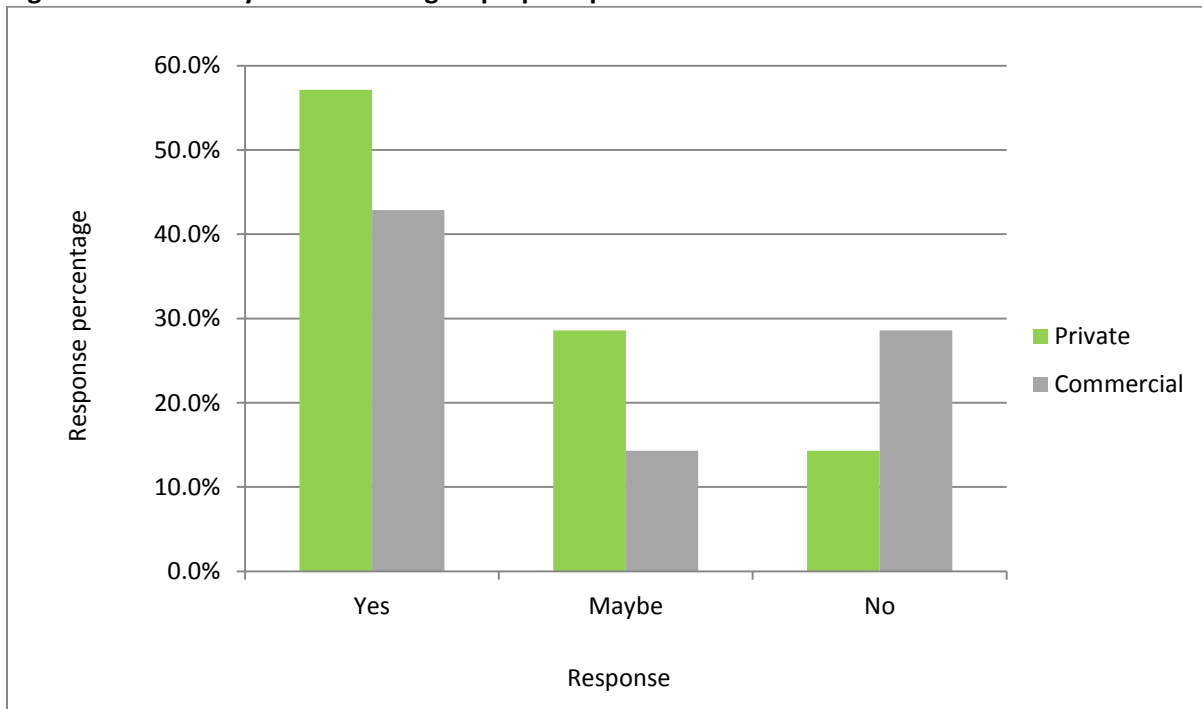
As shown in Table 1 below, many of the private LDV owners surveyed were unaware of the \$200 fine for overrunning their distance licence. More commercial LDV owners were aware of the fine, which is perhaps associated with increased levels of knowledge among this user group for business requirements, as many trades using LDVs rely on the use of these vehicles to undertake their day to day business priorities, and achieve the profit margins associated with these.

**Table 1: Survey Results - LDV owners' awareness of \$200 fine for distance overrun**

	Aware of fine	Not aware of fine
Private LDV owners	33%	67%
Commercial LDV owners	72%	28%

The data in the graph below provides a summary of the extent to which survey respondents who were not previously aware of the \$200 fine perceived this as a deterrent to distance overrun. A similar graph presenting the full data regarding perceptions of the fine as a deterrent is presented and discussed in Section 5.4.

As shown, of those survey respondents who did not previously know about the \$200 fine for overrunning their distance licence, many thought this would now be a deterrent to doing so, and this sentiment was particularly strong among private LDV owners.

**Figure 4: LDV Survey Results: user groups' perceptions of a fine as a deterrent to distance overrun**


This data indicates the potential to change behaviours regarding non-compliance with more information sharing about RUC obligations and penalties, particularly among private users.

While knowing about the \$200 infringement fine may deter some from overrunning, the lack of enforcement focus on LDVs may render the fine obsolete as a deterrent. Many consider taking the risk of overrunning a distance licence worthwhile as they do not face a fine if they are not caught.

The need for greater enforcement focus among LDVs is suggested. The Napier/Hastings CVIU ran a successful operation recently in which they stopped courier drivers, returning 70 percent overrun

distance licences. Targeting enforcement to LDVs may deter some of those intentionally evading their RUC obligations from doing so, and additional training for CVIU personnel on how to identify odometer switches may aid this as it is perceived to be a primary form of LDV evasion. However, we also understand that targeting LDV evasion is a much lower priority for the Ministry and NZTA as LDVs represent a lower proportion of RUC revenue than heavy vehicles, and revenue related to individual owners is low, hence investigation focuses primarily on heavy vehicles.

## 4.2 Transport operators with heavy vehicle permits

This section addresses evaluation questions related to the interaction between the RUC system and the overweight permitting system. This includes a specific focus on trends in the uptake of HPMV permits, impacts on revenue, and the extent to which the RUC system acts as a barrier or incentive to uptake of HPMV permits system.

### 4.2.1 Background information on overweight and HMPV permits

Transport operators who carry loads over the general mass limits of the Land Transport Rule: Vehicle Dimensions and Mass (the “VDAM rule”) must apply for a permit to carry the additional weight and pay RUC on the permitted weight. There are two different types of over mass permits: overweight permits and high productivity motor vehicle (HPMV) permits. In October 2013 a new type of HPMV, the 50MAX, was introduced.

While HMPV permits are provided for under the VDAM rule, not the 2012 changes to the RUC system, the introduction of HMPV permits has impacted on RUC revenue (Section 4.2.3) and Section 12 of the RUC Act 2012 may be acting as a barrier to HMPV uptake (Section 4.2.5). We have provided an overview of the HMPV system, figures on HMPV uptake, and benefits for government and the transport sector, as contextual information to provide background to our findings on the interaction between the RUC system and the heavy vehicle permitting system.

Operators that carry non-divisible loads that exceed legal mass limits defined in the VDAM rule, such as houses or equipment, must have an overweight permit.<sup>1</sup> This may be for a single trip, multiple trips, or continuous operation of the vehicle. High productivity motor vehicle permits were provided for under the Land Transport Rule: Vehicle Dimensions and Mass Amendment 2010. The rule allows for higher mass permits to be issued to heavy vehicles at sizes and weights above the standard legal maximum, on routes where the infrastructure is capable of handling them. An HPMV must fit the following criteria:

- Carries a divisible load (such as logs or freight),
- Exceeds a mass of 44 tonnes and/or the maximum length dimensions allowed for that vehicle configuration, and
- Meets higher individual axle and axle group limits and is no wider or higher than a standard vehicle.

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<sup>1</sup> NZTA, *Overweight Permit Manual*, <http://www.nzta.govt.nz/resources/overweight-permit-manual/docs/overweight-permit-manual.pdf>, 1-8

HPMV permits are route-specific, and can only be used on approved routes and bridges that can accommodate the additional mass and or length as designated by the NZTA or other road controlling authorities (RCAs). HPMV permits are issued for a set period of time (generally 12 months).

50MAX HPMVs were introduced in October 2013. Their implementation followed a nationwide screening programme which revealed that older bridges in particular were not suitable for the heavier weights of HPMVs. As a result of this programme the NZTA began investigating the possibility of a 'limited' HPMV that would be heavier than the conventional 44 tonne configuration, but not so heavy that they would be limited by the older bridges. As most of these bridges were 16 metres or less in length, it was not the total weight of the truck that mattered, rather how much weight would be concentrated on a bridge at a span of time. The NZTA concluded that if a vehicle configuration was 20 meters in length, a weight of 50 tonnes would have little effect on bridges.

In order to reduce the wear on the road network and to accommodate the need for greater length, it was necessary to have an additional axle, raising the requirement from the traditional eight axles to nine. The adjusted configuration enables these vehicles to operate at up to 50 tonnes total weight but with similar performance on the road to a standard 44 tonne truck.<sup>2</sup> The result of this was the creation of the 50MAX permit which allowed vehicles to operate at up to 50 tonnes, in a configuration that was impact-neutral to roads and bridges. This allows for greater network access, including on territorial local authority-owned roading and more remote state highways where pavement strength is insufficient to allow higher axle loads. Unlike standard HPMVs, under which vehicles are restricted to specific routes, RCAs issue region-wide permits with restricted bridges and roads defined.

As permitted vehicles carry more than their standard RUC weight they are required to pay higher RUC.<sup>3</sup> Operators can apply for a load-specific 'additional' RUC licence on top of the distance licence for their vehicle, which covers the additional weight carried under the permit. Alternatively they can apply for a type H licence, which substitutes for the standard type RUC licences for the powered vehicles, and are to be used in combination with the appropriate standard licences for related trailers. Type H licences are granted up to a certain weight (for example up to 42 tonnes for H vehicle type H61<sup>4</sup>) or for a weight band (for example more than 48 tonne, but not more than 53 tonne for H vehicle type H82<sup>5</sup>). A special RUC rate for operating at 50 tonnes has been established for 50MAX vehicles.

#### 4.2.2 Uptake of HMPV permits has steadily increased

Analysis of NZTA data shows that uptake of HMPVs is steadily increasing. The NZTA measures uptake of HPMVs through tracking the proportion of HPMV travel as a percentage of comparable 'big/heavy'<sup>6</sup> standard truck movements. This involves tracking all H-RUC and additional RUC purchased for

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<sup>2</sup> NZTA, *NZTA information sheet: 50 MAX High Productivity Motor Vehicles (50MAX HPMVs) Q&A*, available at <http://www.nzta.govt.nz/vehicle/your/50max/docs/50max-questions-and-answers.pdf>

<sup>3</sup> NZTA, *High productivity motor vehicle permits - Questions and answers*, <http://www.nzta.govt.nz/vehicle/your/hpmv/qa.html>

<sup>4</sup> NZTA, *RUC rates and transaction fees*, <http://www.nzta.govt.nz/vehicle/registration-licensing/ruc/rates-fees.html#typeh>

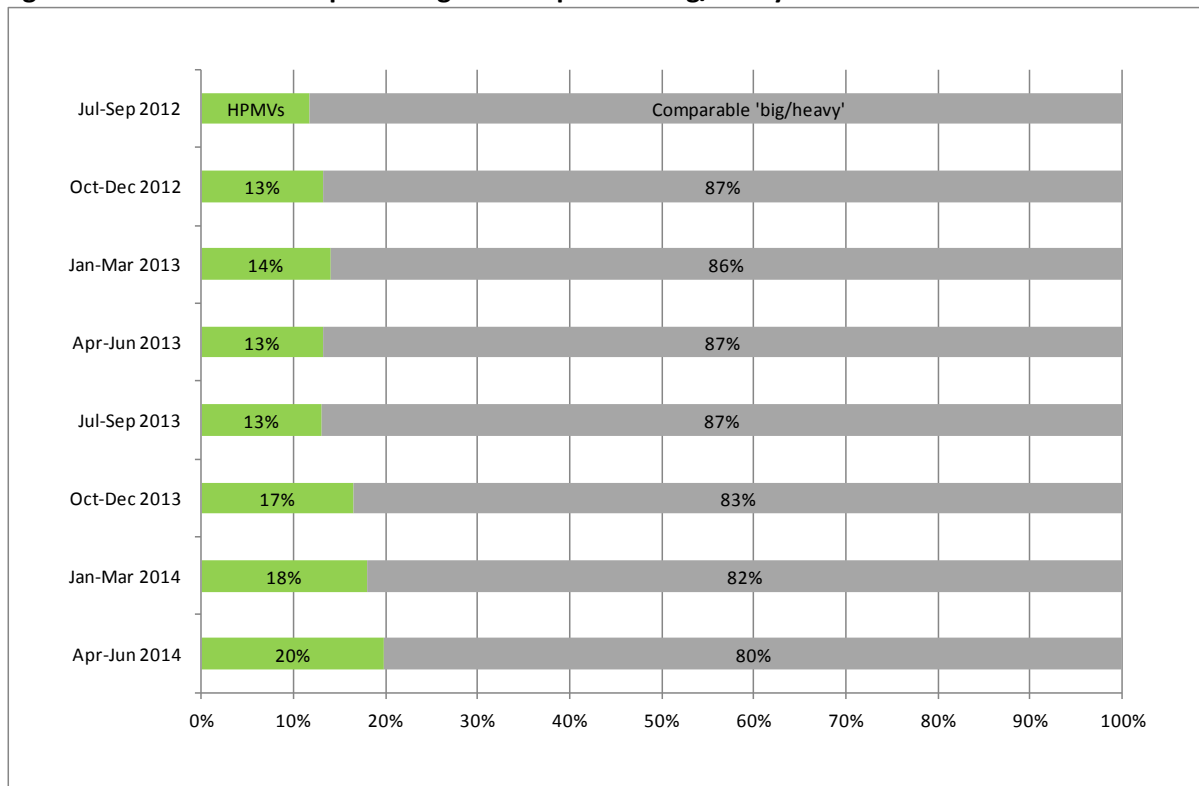
<sup>5</sup> NZTA, *RUC rates and transaction fees*, <http://www.nzta.govt.nz/vehicle/registration-licensing/ruc/rates-fees.html#typeh>

<sup>6</sup> This includes vehicle types 6, 14, 19, 308, 309, 408, and 409

permitted HPMV trucks and combinations, as well as standard RUC purchased by the powered units for proforma HPMVs that operate at 44 tonnes. The NZTA Statement of Intent 2014-2018 specifies a target of HPMV travel comprising 30 percent total of heavy vehicle kilometres travelled by 2016.

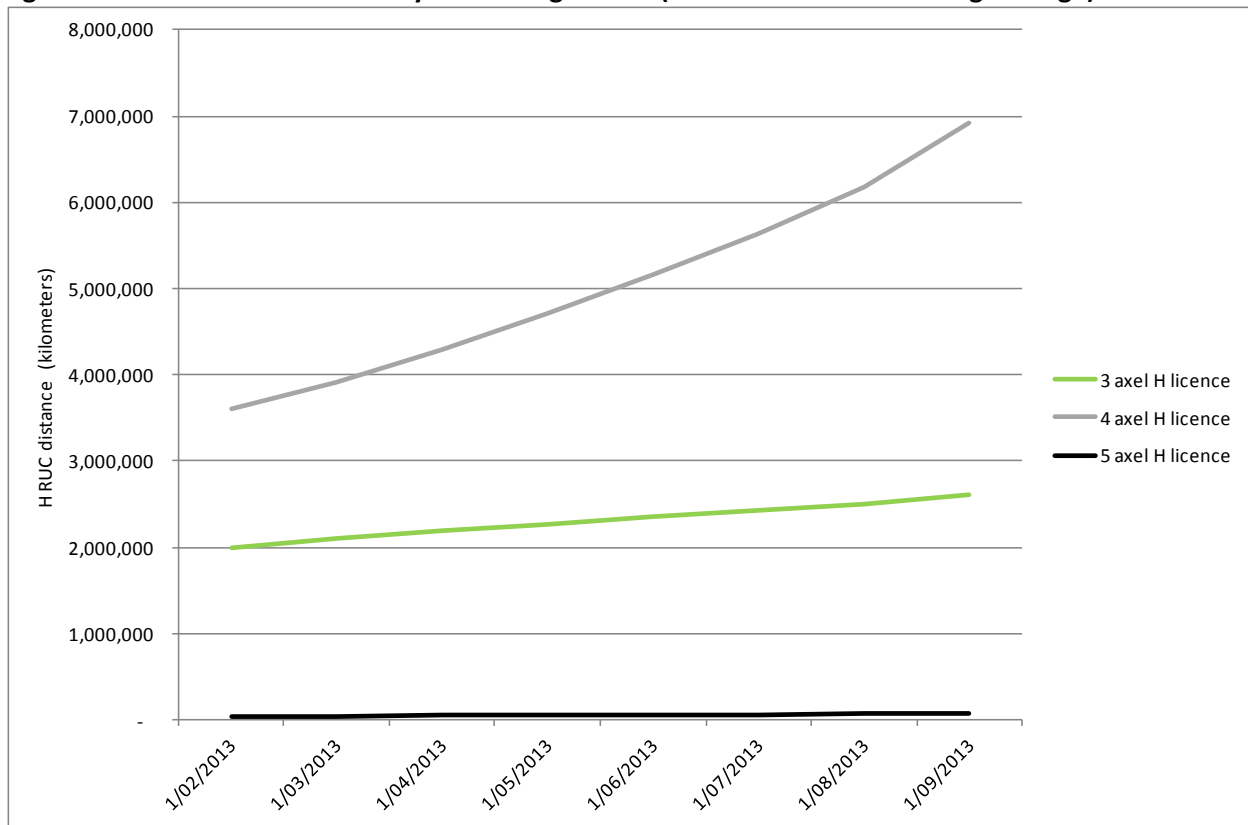
Figure 5 shows a steady increase in the percentage of HPMV distance travelled as a proportion of total distance travelled by heavy standard trucks. Interviews with NZTA administrative personnel suggested that the introduction of 50MAX permits has contributed to the increased percentage of HPMV travel observed in the most recent three quarters.

**Figure 5: HPMV travel as a percentage of comparable 'big/heavy' standard truck movements**



The evaluation team also analysed trends related to the uptake of H licences across vehicle axle configurations. The following figure shows H licence RUC distance purchased, looking at prime movers with three or more axles (as two axle vehicles cannot be granted H-licences). Three axle H-licences are for prime mover vehicle type 6, four axle H-licences are for vehicle type 14 and five axle H-licences for vehicle type 19.

As shown, H licence distance purchased by three and five axle prime movers has remained relatively steady since the beginning of 2013, whereas H licence distance for four axle prime movers is trending up more rapidly. This is likely to be due to the uptake of 50MAX vehicle permits.

**Figure 6: H licence RUC distance by axle configuration (12 month centred moving average)**


#### 4.2.3 HMPVs offer efficiency and safety benefits to the government and the transport industry

The NZTA has identified that increased uptake of over-mass HPMVs could result in an estimated 20 percent decrease in truck trips. Interviews with NZTA personnel identified a number of productivity and safety benefits of reduced truck trips through use of HPMVs:

- Reduced infrastructure damage through less pavement wear and tear,
- Less diesel which is likely to result in a net reductions in emissions,
- Fewer trucks on the roads will reduce the chance of accidents,
- Reduced labour and capital costs for operators, as existing trucks can be used as HPMVs, and
- The incentive to upgrade trucks to meet HMPV requirements will result in newer trucks on the road with more advanced safety features such as better electronic stability control and static roll thresholds.

About half of the transport operators engaged with during the case studies (seven out of thirteen) had at least one HPMV within their fleet. These operators articulated a number of efficiency benefits, for example one company that transported bulk solids was able to reduce their average number of daily trips from 17 to 14. Another operator stated that their adoption of HPMVs had given them a competitive advantage:

**“HPMV work very well for our line haul operation, where the trucks always stay in combination. We trialed a few initially and found we were able to cart more payload per trip, which reduces our costs. We’ve passed these savings on to our customers and this has helped us win a few jobs”**

- **commercial transport operator**

In particular, case study operators were positive about the potential benefits of 50MAX HPMVs. These were seen as a way to gain performance efficiency benefits, coupled with much better access to the roading network than standard HPMVs. This allowed more flexible journey planning, which enabled transport operators to be responsive to client needs.

A number of operators we spoke to were planning to increase the number of 50MAX permitted vehicles within their fleet, and were making vehicle purchasing or conversion decisions based on the 50MAX vehicle configuration requirements:

**“We previously bought seven axle units because of the better payload and less RUC. Once HPMVs came in, and we got direction from NZTA about how 50MAX [permits] were going to work, we moved to buying nine axle vehicles. We have a company-wide goal of having 50 percent of our vehicles on 50MAX permits by 2015, and we’re on track to get there.”**

- **commercial transport operator**

Some case study operators spoken to also highlighted the safety benefits of 50MAX vehicles, noting the increased stability of nine axle vehicle configurations. One company was now focusing their driver training programme on safe driving in HPMV and 50MAX vehicles.

While the increased uptake of nine axle vehicles that meet 50MAX specifications is not driven by the 2012 changes to the RUC system, the move to these vehicles has highlighted an issue in the new system’s implementation, particularly in the operationalization of Section 12 of the Act. This is discussed in Section 4.2.5.

Of the six case study operators which did not currently have any HMPV or 50MAX permitted vehicles, two were in the heavy haulage industry, which uses overweight permits rather than HPMVs. Two operators transported loads that were not suitable for HPMVs, such light and bulky freight that ‘cubed out’ quickly or liquids that incrementally increased or decreased throughout the journey. One of the case study operators felt that the capital cost of investing in new HPMVs was too high, and another was waiting to until further routes were available for 50MAX vehicles.

#### **4.2.4 Revenue per kilometre for three and four axle vehicles on H licences is trending down, whereas revenue per kilometre for five axle vehicles in trending up**

The evaluation team analysed H licence RUC revenue per kilometre by axle configuration to determine whether there were any trends in revenue across vehicle axle configurations, and the impact that this may have on revenue. Figure 7 shows revenue per kilometre for prime movers on H-licences. The figure does not include revenue for heavy trailers, which should be taken into account when looking at change in average revenue. Heavy trailers are not plotted in Figure 7 as we do not have data on the axle configuration of prime movers for individually registered trailers.



**Figure 7: H licence RUC revenue per kilometre by axle configuration (12 month centred moving average)**

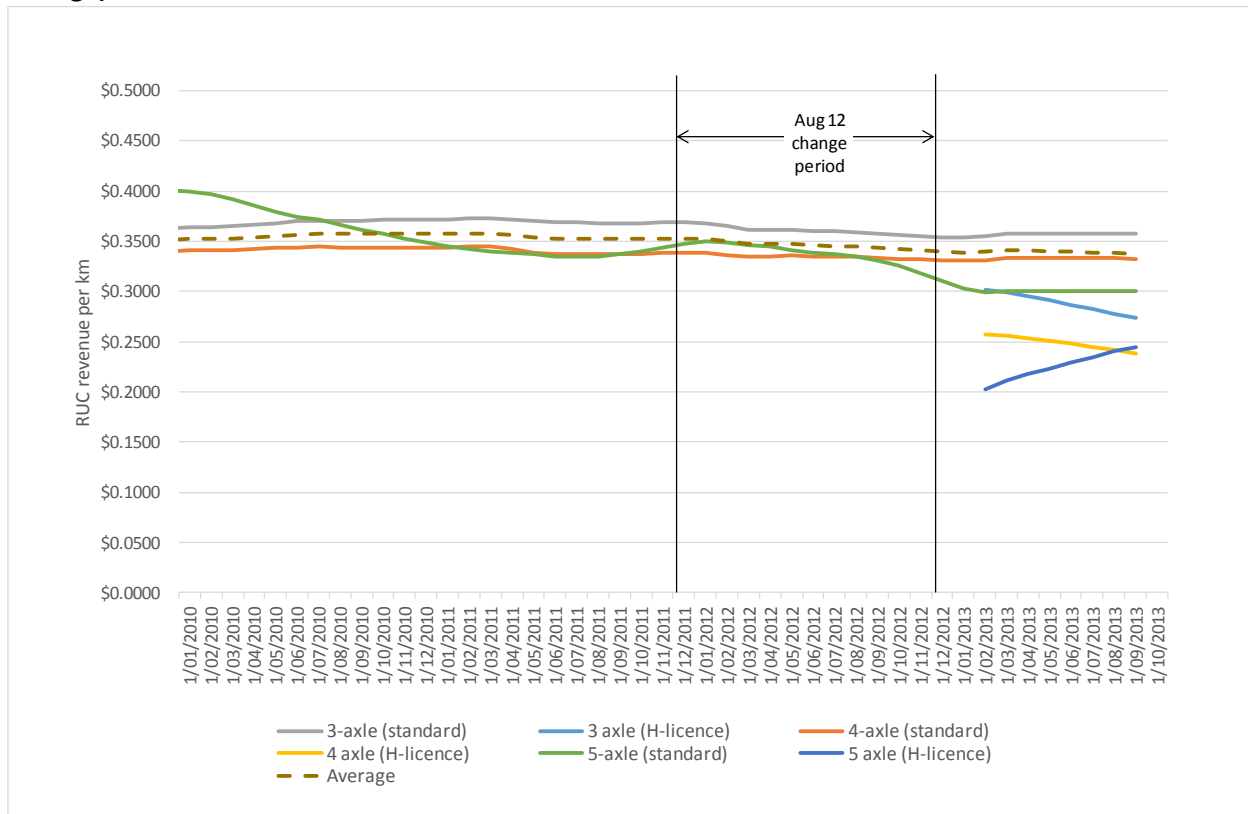


Figure 7 shows that revenue per kilometre for three and four axle vehicles on H licences is trending down, whereas revenue per kilometre for five axle vehicles is trending up. Discussions with the NZTA and the Ministry suggested two possible explanations for the downward revenue trend amongst four axle vehicles. This may indicate a movement to 50MAX vehicles, which have more advantageous RUC rates than standard HPMVs. Alternatively, it may mean that operators are not purchasing RUC up to their permit weight, as required. This is discussed further in Section 4.2.5.

#### 4.2.5 The requirement to purchase RUC up to the permitted weight is acting as a disincentive to HMPV uptake

The evaluation findings suggest that there is a perceived ‘clash’ between the HPMV permitting system and the RUC system. The main issue identified by transport operators and key informants is the requirement under Section 12 of the Road User Charges Act 2012 to purchase RUC to “*the maximum mass specified in the permit under which the RUC vehicle is operating*” (RUC Act 2012 Section 12(4)(a)(ii)).

This means that transport operators with an HPMV or overweight permit must pay RUC up to the permitted weight, rather than the actual load weight. Transport operators reported that this does not account for the standard industry practice to load under the permitted weight, and it was viewed as

unfair to require payment of RUC on weight that they would never carry. For example, one of the case study transport operators stated that the 8 axle B-train trucks of their fleet cannot be run as a 50MAX and instead have to be run as HPMVs at 49 tonnes. However, as the permitted weight band is 48-52 tonnes they must purchase RUC to the maximum of this bracket despite not being able to load up to 52 tonnes. The transport operator stated that the extra expenses are absorbed by the customer, and that this affected the competitiveness of their business. Another operator was annoyed that vehicles with an H RUC licence were required to pay RUC on the permitted weight when the vehicle is operating at 44 tonne, and therefore not getting HPMV efficiency benefits.

Similar issues were reported throughout many of the case study sites that were visited by the evaluation team. Several operators believed that this issue was undermining the credibility of the HPMV system and stated that it was acting as a disincentive for them to move more vehicles to operate on HPMV permits.

While many within the transport industry are paying RUC to the permitted weight, the evaluation found that operators who objected to this were responding a number of ways. An overview is provided in Table 2 below.

**Table 2: Transport industry responses to requirement to pay RUC to permitted weight**

Response	Description	Implications
Purchasing multiple permits	Some operators are purchasing multiple permits at different weights for the same vehicle, and choosing which permit to run on depending on load (and paying RUC on the particular permit).	This response is within the legalities of the RUC system, but is cumbersome for transport operators and requires a lot of paperwork, thereby incurring administration and compliance costs for operators.
Purchasing RUC only up to the load weight	<p>One case study operator openly admitted that his company only purchases up to the load weight (not the permit weight) and stated that there were others engaging in similar behaviour.</p> <p>The operator reported that the industry is waiting for someone to get a Police infringement for the breach, and take a case to court to debate the legality of the system.</p> <p>Interviews with NZTA personnel suggested that there is a current court case related to a binding assessment issued in response to a Police fine for paying the incorrect RUC.</p>	<p>The reasonability of this requirement is a key issue, and there was a perception amongst NZTA informants that the agency may not be successful in defending a court case.</p> <p>NZTA informants stated that a temporary policy is being developed to address this issue, but longer term a review of Section 12 of the Act may be required.</p>

Operating on an incorrect permit	<p>The evaluation team also heard reports that some operators are purchasing two different weight permits (e.g. a 53 tonne permit and a 56 tonne permit) and loading to the higher permit weight but paying RUC on the lower permit. If they are pulled over by the police they show the higher permit to the officer.</p> <p>It was noted that this can be done easily as it is the operator who nominates the weight for the permit's weight band, and there is no crosschecking involved as there is no way for the NZTA to know if the weight nominated is accurate unless checked at a roadside inspection.</p>	There is only anecdotal evidence that this is occurring, and the evaluation team did not uncover any direct examples. However, it does represent a potential source of revenue leakage.
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As discussed above, these issues stem from the requirements outlined in Section 12 of the Road User Charges Act 2012. We recommend that the Ministry undertake to review Section 12 of the Act. This would represent a relatively substantial policy change, and would require a legislative amendment, but is a necessary step to enhance the credibility of the HPMV permitting system and encourage further uptake of permits.

#### **4.2.6 Confusion regarding uncoupling of combination vehicles has largely been mitigated through amendments to the regulations**

The first cycle of evaluation identified that there was confusion amongst transport operators around the ability to uncouple HPMVs operating in specific combinations, and a perception amongst some operators that the inflexibility to uncouple vehicles was inhibiting efficient vehicle use. It was reported that this was acting as a barrier to the uptake of HPMVs. In response to these concerns, amendments were made to the RUC regulations that make provision for unladen type H vehicles to carry, rather than tow, a RUC vehicle that ordinarily forms part of the combination vehicle, and for any powered vehicle that is defined as part of a specific combination to operate without a trailer when unladen. These changes took effect on 1 July 2013.

The issue was re-examined in the second cycle of evaluation to determine whether industry concerns had been mitigated. We found that the amendments have largely been effective in addressing the confusion amongst transport operators and Police around the circumstances in which HMPVs can operate out of combination:

**“Initially we had some difficulty knowing when it is okay to drop trailers... we weren't sure about whether it was okay to do this to get [the vehicles] serviced. It wasn't very clear and we'd heard of other [transport operators] getting pinged. But the NZTA has made changes to address this and it has been remedied now.”**

- commercial transport operator

Some transport operators and industry associations raised on-going concerns about the efficiency implications of being unable to interchange combination vehicles. For example, one operator noted that some vehicles had been consigned to being single use, as they cannot operate in other configurations, leading to fleet deployment inefficiencies. This concern was echoed by an industry association:

**“The HPMV system is weakened by the lack of interchangeability of component vehicles and combinations. There is a whole raft of vehicles that cannot be used, or are being under-used. These become ‘stranded assets’, with low residual values. It’s putting some operators off HPMVs.”**

- industry association

While these concerns were raised by a minority of operators, the issue did not represent the ‘hot topic’ that it had appeared to be during the first cycle of evaluation. An interview with an NZTA official noted that further amendments have been made to the RUC regulations, allowing vehicles to move between HMPV configurations and standard vehicle configurations under 44 tonnes, while remaining on the HMPV permit, provided RUC has been paid on the HPMV permitted weight. The new amendment gives operators more flexibility, although operators will be required to pay higher RUC than they would if the vehicle was changed back to a standard licence.

### **4.3 Vehicle use, loading and purchasing patterns**

The following section considers the effects of the changes to the RUC system has had on vehicle use, loading and purchasing patterns. It is important to note that the recent increase in economic activity in New Zealand following the recession may also be a contributing factor to the changes experienced in the transport fleet, as the economy and transport industry are strongly interlinked.

#### **4.3.1 There has been a slight increase in average vehicle load weight across multiple vehicle configurations**

As reported in the Cycle 1 evaluation, the move to a fixed RUC weight band system includes a theoretical incentive for operators to maximise their vehicle use by loading vehicles up to their RUC weight. Interviews with operators found that there is little evidence of this impact at the individual operator level as most commercial transport operators stated that they were already loading as efficiently as possible as a matter of standard business practice, and that other factors were more important than RUC considerations when determining how a vehicle would be loaded.

However, analysis of weigh-in-motion (WiM) data<sup>7</sup> suggests that a slight change in vehicle loading patterns has occurred at a systemic level. Analysis of data of the most common vehicle configurations has found that from 2012 to 2013 an increase in average vehicle weight for set configurations has

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<sup>7</sup> The WiM report provides numerous statistics for heavy vehicles that pass any of the six WiM sites over each 12 month period. (Heavy vehicles for this purpose are those with GVM >3.5 tonnes.) WiM accuracy on GVM is +/-10%.

increased in eight of the nine most common vehicle configurations.<sup>8</sup> This increase in average vehicle weight means that at a systemic level, operators are now loading their vehicles to a higher capacity than before.

The most significant shift in vehicle loading took place in the nine axle full-trailer combinations (+1.09 tonnes), and seven axle articulating trailer combinations (+1.27 tonnes). The reason for the more significant shift in the nine axle full-trailer configuration can likely be attributed to the increasing use of 50MAX permits by operators, and thus loading closer to 50 tonnes increases the average weight. The significant change in loading for seven axle articulating configurations is more difficult to explain, but could possibly be attributed to the change in RUC rates for this particular configuration, which may have made it cheaper to run, and therefore encourage transport operators to move greater loads on this type of vehicle. Alternatively the observed changes may be due to broader economic factors; interviews with transport operators suggested that the past year has seen an increase in activity in the transport sector. This growth in freight movement may have resulted in operators loading their vehicles to a higher capacity, leading to an increase in the average gross mass per vehicle.

**Table 3: Changes in average estimated gross mass per vehicle 2012 to 2013**

	PAT class/Configuration type	2012 average estimated gross mass per vehicle (tonne)	2013 average estimated gross mass per vehicle (tonne)	Change in weight (tonne)
Full trailer combinations	751 (3-axle prime mover, 4-axle trailer)	33.80	34.03	+0.23
	891 (4-axle prime mover, 4-axle trailer)	35.54	35.92	+0.38
	915 (4-axle prime mover, 5-axle trailer)	36.29	37.38	+1.09
B-Train combinations	811 (3-axle prime mover, 5-axle trailer)	41.82	40.01	-1.81
	951 (3-axle prime mover, 6-axle trailer)	36.31	36.87	+0.56
Articulating combinations	69 (3-axle prime-mover, 3-axle trailer)	26.53	26.70	+0.17
	713 (3-axle prime-mover, 4-axle trailer)	28.03	29.30	+1.27
	791 (3-axle prime mover, 4-axle trailer)	30.28	30.68	+0.40
	826 (4-axle prime mover, 4-axle trailer)	33.20	33.24	+0.04

<sup>8</sup> Ministry of Transport, *Annual Weigh-in-Motion (WiM) Report, 2012*; Ministry of Transport, *Annual Weigh-in-Motion (WiM) Report, 2013*

#### **4.3.3 There has been a significant uptake in nine axle vehicle configurations by operators as a result of the introduction of 50MAX permits**

The evaluation investigated whether the 2012 changes to the RUC system have resulted in any changes to vehicle purchasing patterns. The findings suggest that there has been a considerable uptake of nine axle vehicle configurations by the transport industry, and notable shift in trailer purchasing patterns towards five axle trailers. However, this appears to be mainly driven by the introduction of the 50MAX permits, rather than the changes to the RUC system. Interviews with the industry, including transport operators and industry associations, found that a vast majority of respondents who were operating full-trailer and B-train configurations have either already shifted, were in the process of shifting, or were planning to shift to 50MAX compatible, nine axle vehicle configurations.

**“I have never witnessed such a wide-spread or consistent shift in trailer demand in my 30 years of experience.”**

**- senior representative of the Truck and Trailer Manufacturers Federation**

A qualitative survey administered to trailer manufacturers confirmed this finding.<sup>9</sup> The survey found that 90 percent of trailer manufacturers that responded had experienced a change in the type of trailers ordered by the industry. This change was manifested in two distinct changes in trailer types. The most prominent change was found among the full-trailer type where type 43 four axle trailers are being replaced by type 951 five axle trailers. The survey found that 80 percent of respondents noted a specific increase in demand in five axle full trailers. This corresponds with the information provided from interviews with the case study operators, whereby a majority of operators noted a shift within the transport industry from a standard 44 tonne configuration of eight axles to the nine axle 50MAX configuration.

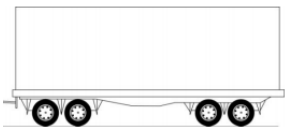
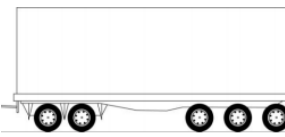
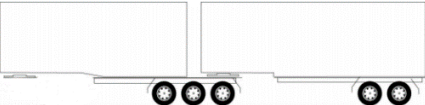
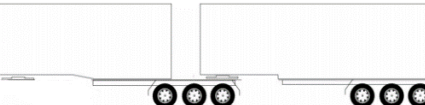
Data gathered through interviews with industry associations and transport operators suggests that uptake of nine axle configurations has been particularly high among line-haul and general freighting companies. Conversely, sectors such as the logging industry have been less inclined to shift to five axle trailers. A senior representative of an industry association stated that the logging industry are instead shifting to five axle tractor units and maintaining their four axle trailers as they can ‘piggy back’ their trailers with greater ease. Information from the survey and interviews with operators suggests that some liquid transporters are also starting to shift to nine axle vehicle configurations. Generally liquid transport operators perceived that they were somewhat disadvantaged by the use of 50MAX permits as the weight of their load fluctuated significantly during their journey. However, it appears that this perception is changing. For example, one of New Zealand’s largest liquid transporting fleets is looking to shift many vehicles in their fleet from standard (eight axle) to 50MAX (nine axle) configurations for selected routes within the next 10 years.

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<sup>9</sup> It should be noted that this survey had a sample size of twenty, with a response rate of 50 percent. Therefore the trends identified should be interpreted with caution. In addition, respondents were not asked to quantify trailer sale numbers (due to commercial sensitivity), rather to give an overview of trends that they had observed.

The other noted shift was found in the B-train trailer configuration. This finding was not as prominent as that of the full-trailers, as only two out of ten respondents mentioned it specifically. These respondents noted that there had been an increase in demand for six axle B-train trailers for type 309 configurations. Table 4 shows the most prominent shifts in trailer types purchased.

**Table 4: Diagram of trailer types**

		<i>Changes to permitting system</i>	
		<b>Prior to introduction of 50MAX permits</b>	<b>Introduction of 50MAX permit October 2013</b>
<i>Trailer type</i>	<b>Full-trailer</b>	Four axle 	Five axle 
	<b>B-train</b>	Five axle 	Six axle 

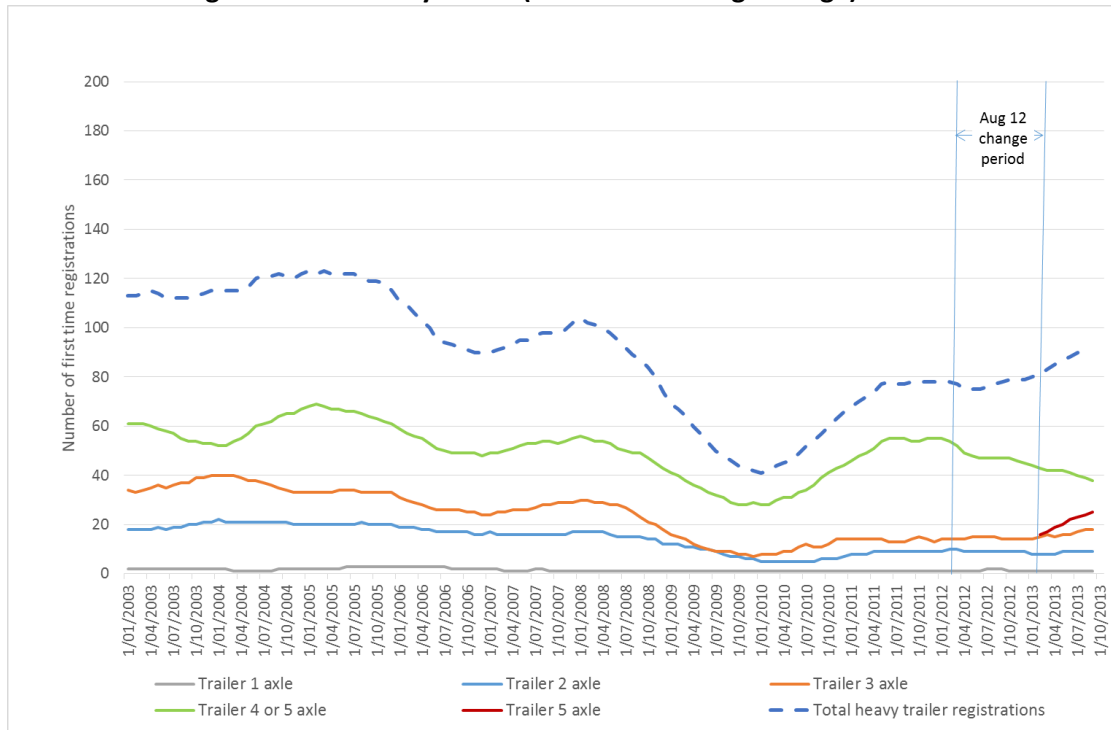
Respondents from the survey also noted that the increase in demand for five axle full-trailers had led to a corresponding decrease in demand for four axle full-trailers.

**“Currently, 95 percent of our trailer orders are for 50MAX specifications... I have no doubt that this is because of the 50MAX [permits].”**

- **large trailer manufacturer**

Some trailer manufacturers reported that they built very few four axle full-trailers now. Prior to the introduction of the 50MAX permit, the main full-trailer configuration made by manufacturers was to four axle specification. Some operators reported that they had purchased five axle trailers prior to the introduction of the 50MAX permits, in anticipation of the permit’s introduction.

Figure 8 below illustrates the number of new trailer registrations and is segregated by the number of axles of trailers. This figure confirms the qualitative findings of the case study interviews and survey, as it illustrates a clear increase in new registrations of five axle trailers (red line). It also shows a corresponding decrease in four-axle trailer registrations (green line) that have come as a result of this shift by the transport industry.

**Figure 8: First time registration of heavy trailer (12 month moving average)**


Several of the trailer manufacturers who responded to the survey also provide trailer modification services. Three of these respondents noted that they have experienced an increase in demand for additional axles to be added to trailers. Several other trailer manufacturers noted that they had received requests from the industry for conversions, but did not have the capacity to do so. In addition, one trailer manufacturer also reported that they had been modifying five axle B-trains to six axle specifications. Again, this is mainly driven by a desire to meet 50MAX specifications, rather than in response to the changes to the RUC system.

Whilst the introduction of the 50MAX permit certainly gave impetus for operators to shift toward five axle vehicles, it was not the only driving force. One respondent noted that during the economic downturn from 2008 to 2011, fleet replacement programmes by operators had virtually stopped for existing trailer stock, which in turn, increased the average age of their fleets. This is supported by the data in Figure 8 which shows a steady decrease in the number of new trailer registrations from approximately 100 per quarter at the end of 2007 through to just 40 in the mid-2010 quarter. New Zealand's economic upsurge coincided with the implementation of the 50MAX permit in October 2013. As such, when operators looked to upgrade their current aging trailer fleet, it is apparent that they looked to upgrade to 50MAX and HPMV pro-forma configurations.

Survey respondents and transport operators were asked about the extent to which RUC had influenced their trailer purchasing decisions. As outlined above, the efficiency gains offered by 50MAX permits were reported as the primary driver for purchasing five axle trailers. However, interviews with operators and comments of two survey respondents suggest that the RUC changes have contributed to a shift in specialised trailers for heavy transport, particularly at and above the 60 tonne weight. This increase in demand has primarily been expressed in the increase in 'rows of eight' trailers. The



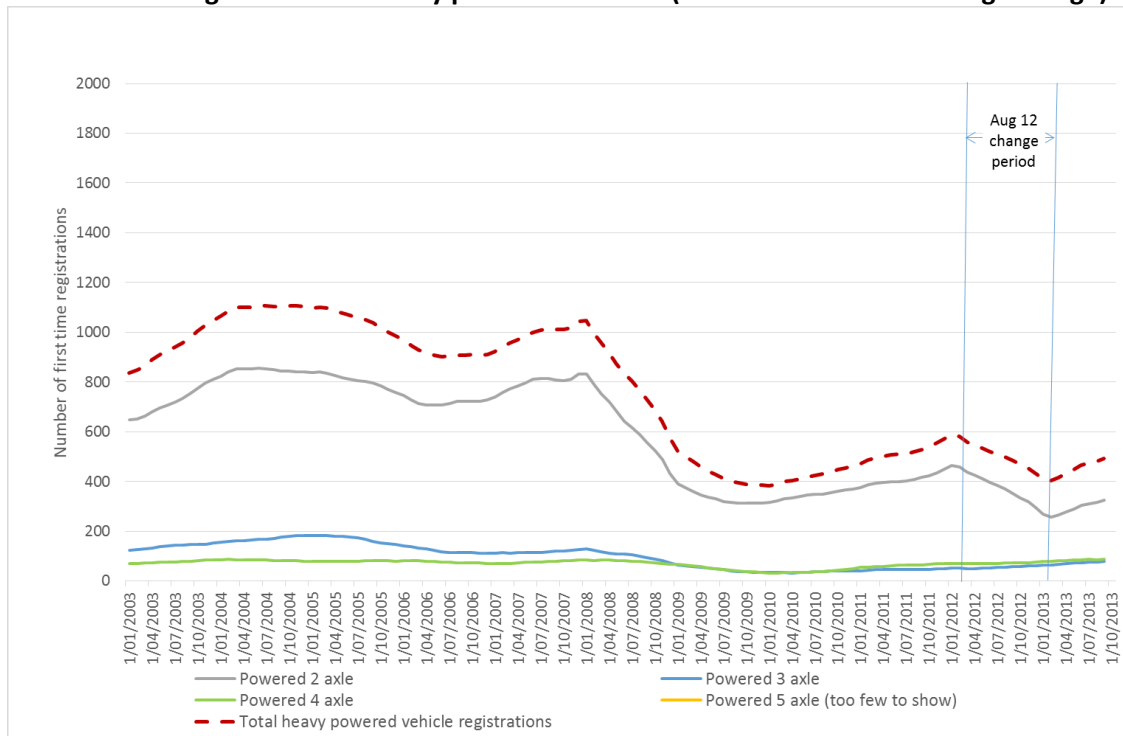
rise in demand for such trailers was partially attributed to the lower RUC rate. An interview with an industry association found that there is a perception within the heavy haulage industry that type 33 three ‘rows of twins’ trailers are disadvantaged under the new RUC system, as their RUC rates are much higher. This has resulted in a “sea change” away from the type 33 three ‘rows of twins’ trailers.

#### 4.3.4 Shifts in prime mover trends are not conclusive

The findings of the survey of truck dealers did not present any trends that were as conclusive as that found in trailer manufacturing. However, 45 percent of the respondents did note that there has been an increase in the number of four axle tractor units.<sup>10</sup> These respondents also credited the introduction of 50MAX and HPMV permits as being a significant contributing factor.

Data from first time truck registrations (Figure 9) shows a slight increase in the number of four axle vehicles registered (green line), however this uptake is still as a similar rate to the three axle vehicle (blue line).

**Figure 9: First time registrations of heavy powered vehicles (12 month centred moving average)**



Interviews with operators found that their main priority was upgrading their trailer fleet. Part of the rationale for this is due to operators already using four axle prime movers to run type 408 eight axle configurations prior to the introduction of the 50MAX permit. Therefore, operators already had a

<sup>10</sup> It should be noted that this survey had a sample size of 20 with a response rate of 40 percent. Therefore trends taken from this should be interpreted with caution. In addition, respondents were not asked to quantify truck sale numbers (due to commercial sensitivity), rather give qualitative trends.

number of four axle tractor units capable of being used for 50MAX configurations following the purchase of new trailers.

The most significant uptake in vehicles is amongst the type 2, two axle truck. This can be seen in Figure 9 where a significant uptake in two axle trucks occurred from the first quarter of 2013. Perceptions from truck dealers indicate that much of this uptake is occurring in type 2 trucks with a GVM of up to twelve tonnes. Conversely, they also believe that sales of type 2 trucks with a GVM above twelve tonnes is decreasing. This can be attributed to the difference in RUC rates for the two weight brackets, whereby a truck with a GVM of nine to twelve tonnes is paying 47 percent of the RUC rate (\$123 per 1,000 km) of a truck with a GVM above twelve tonnes (\$262 per 1,000 km).

#### **4.4 Operator compliance costs**

This section considers the on-going impact that the changes to the RUC system have had on transport operators' administration and compliance costs. As well as exploring the impacts on individual operators, the evaluation team looked at system-level RUC purchasing patterns.

##### **4.4.1 Transport operators have achieved minor administrative savings at the individual operator level**

As with the first evaluation cycle, there was a perception in the industry that there had been little reduction in RUC compliance costs at the individual operator level as a result of the changes to the RUC system. Most operators spoken to during the case studies had long standing RUC administration systems and these had not substantially changed in response to the changes to the RUC system.

One case study operator reported that under the previous system his company had varied their RUC purchase weights between loads, and the introduction of a set RUC weight had led them to adapt their system to now purchase larger increments of RUC less frequently, resulting in a small time saving (see Section 4.4.2 for a discussion of system-level trends). However, the majority of operators stated that prior to the changes they had commonly purchased RUC at a higher weight than they anticipated carrying, and had not adjusted the weight between purchases to account for different load types. In many cases, vehicles were assigned to a specific purpose and consistently carried similar load types and load weights. This meant that RUC was commonly purchased at a steady weight for each vehicle, and the subsequent change to remove operator nominated weights did not substantially impact on operator administration time.

The evaluation did find some evidence of minor time savings at the individual operator level. The ability to display temporary licences<sup>11</sup> in digital format was identified as a means of saving administrative time as it removed the need to mail physical RUC licences to offsite vehicles, or for drivers to arrange a method of accessing a photocopy or facsimile. A small number of operators noted that electronic display allowed for emailing or sending images to smart phones, a quick and easy method which saved a small amount of time.

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<sup>11</sup> A 'temporary licence' is an identical copy of a RUC licence which may be used for up to seven days when a RUC licence is issued for a vehicle that is in another location.

Several operators also noted that less complex roadside enforcement checks, due to the removal of the need to weigh all vehicles, had resulted in time saving for operators. Police enforcement of RUC is discussed in detail in Section 5.4.

A number of case study operators that had adopted electronic RUC systems management reported that this had resulted in a substantial decrease in RUC administrative costs. For example, one commercial transport operator with a large fleet stated that moving from manually purchasing RUC through Direct Connect to automatic purchasing through an eRUC system had reduced the daily time spent administering RUC from two hours to approximately 20 minutes. Other benefits of eRUC are discussed in Section 4.5.

The evaluation also found reports of direct financial cost savings achieved under the new system. In the heavy haulage sector, several operators highlighted the ability to purchase additional licences in smaller increments as a minor cost saving. The heavy haulage sector, which typically carries indivisible one-off loads of variable weights (such as pieces of equipment or houses), reported that under the previous system it was common practice in the industry to purchase a distance licence at a low weight and then purchase supplementary licences as required for specific loads. Supplementary licences have been removed from the new RUC system, but all vehicles which have a permit to carry loads higher than the permanent RUC weight must apply for an 'additional licence' for each individual load that covers the additional weight carried. Supplementary licences were required to be purchased in 50km increments, whereas under the new system additional licences can be purchased in lots of 10km. This has been a cost advantage for heavy haulage operators who often only transport short distances.

#### **4.4.2 The average distance purchased per transaction has increased by 7.9 percent in the 12 months after the RUC system changes**

The evaluation team analysed RUC transaction data to determine whether there had been any change in the average distance purchased per transaction. The results, displayed in Table 5, show that that overall there has been increase in the average distance purchased.<sup>12</sup> The average distance purchased per transaction has increased by 7.9 percent when comparing the 12 month period before and 12 month period after the August 2012 changes. This is largely driven by a 29 percent increase in trailer and 5.4 percent increase in goods van/truck/utility distance purchased per transaction.

This increase in the average distance per transaction may indicate that transport operators have achieved a reduction in compliance costs through purchasing RUC less frequently and in larger increments, which may be due to the removal of the need to adjust the weight at which RUC is purchased.

The overall increase in heavy vehicles is 9.3 percent and 0.8 percent for light vehicles. The fact that larger increases are observed amongst heavy vehicles (which are primarily used by commercial entities which may have more frequently adjusted the weight at which they purchased RUC) than light vehicles (which were little affected the removal of operator-nominated weights), appears to support this

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<sup>12</sup> We have used raw unadjusted distance because we are interested in the quantum of the transaction rather than comparing actual distance travelled.

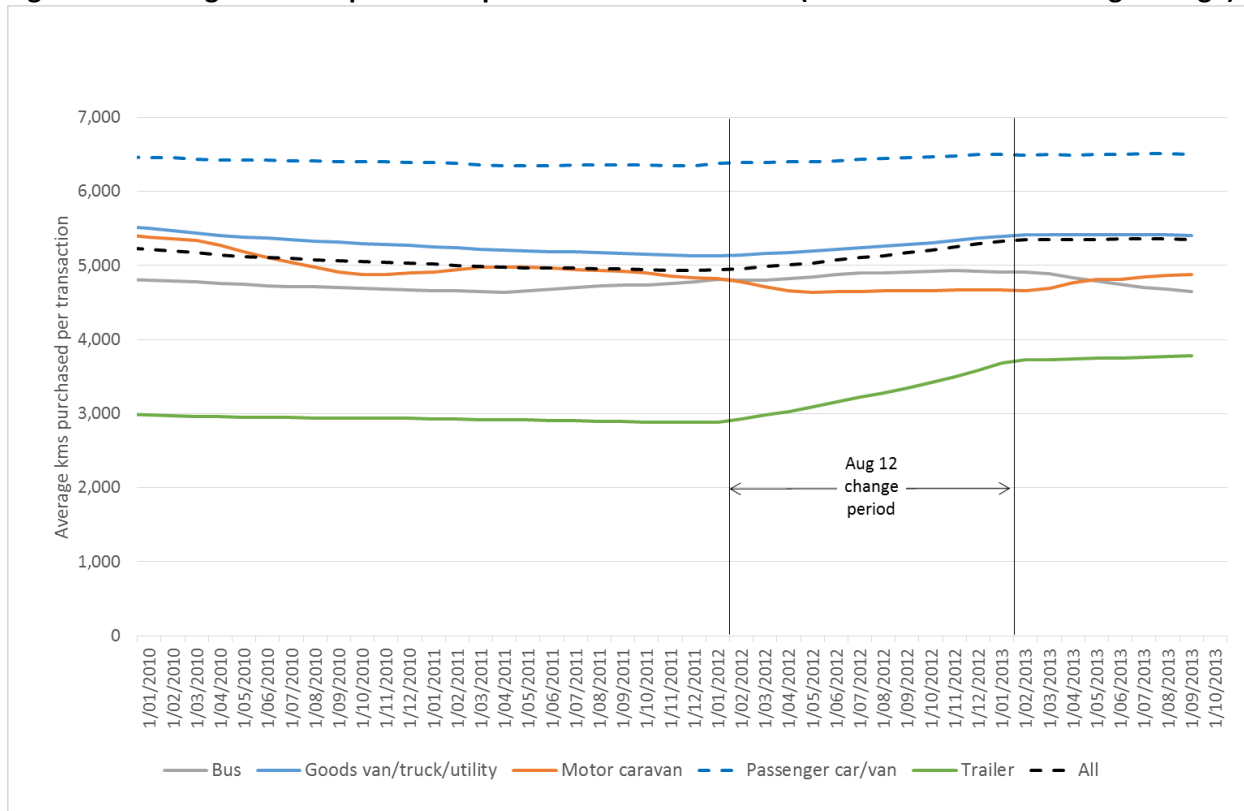
contention. Many of the definitions of light and heavy vehicles have changed under the new system and this distinction should therefore be treated with caution.

**Table 5: Average distance purchased per transaction before and after August 2012**

Vehicle type description	Weight category	12 months prior to August 2012			12 months after August 2012			Change
		Sum of Distance raw (000)	Sum of Transactions	Distance per transaction	Sum of Distance raw (000)	Sum of Transactions	Distance per transaction	
Bus	Light	150,800	21,309	7,077	193,639	27,443	7,056	-0.3%
	Heavy	286,591	69,622	4,116	255,928	64,131	3,991	-3.0%
<b>Bus Total</b>		<b>437,391</b>	<b>90,931</b>	<b>4,810</b>	<b>449,567</b>	<b>91,574</b>	<b>4,909</b>	<b>2.1%</b>
Goods van/truck/utility	Light	3,890,080	513,435	7,577	4,307,355	571,479	7,537	-0.5%
	Heavy	2,786,682	786,693	3,542	2,594,435	704,194	3,684	4.0%
<b>Goods van/truck/utility Total</b>		<b>6,676,761</b>	<b>1,300,128</b>	<b>5,135</b>	<b>6,901,791</b>	<b>1,275,673</b>	<b>5,410</b>	<b>5.4%</b>
Motor Caravan	Light	37,514	7,565	4,959	80,046	13,923	5,749	15.9%
	Heavy	173,673	36,339	4,779	139,523	33,126	4,212	-11.9%
<b>Motor Caravan Total</b>		<b>211,187</b>	<b>43,904</b>	<b>4,810</b>	<b>219,570</b>	<b>47,049</b>	<b>4,667</b>	<b>-3.0%</b>
Passenger car/van	Light	2,923,834	459,282	6,366	3,001,149	462,808	6,485	1.9%
	Heavy	41,714	4,166	10,013	834	107	7,795	-22.2%
<b>Passenger car/van Total</b>		<b>2,965,547</b>	<b>463,448</b>	<b>6,399</b>	<b>3,001,983</b>	<b>462,915</b>	<b>6,485</b>	<b>1.3%</b>
Trailer	Heavy	1,259,028	435,632	2,890	1,266,451	339,729	3,728	29.0%
<b>Trailer Total</b>		<b>1,259,028</b>	<b>435,632</b>	<b>2,890</b>	<b>1,266,451</b>	<b>339,729</b>	<b>3,728</b>	<b>29.0%</b>
<b>Light Total</b>		<b>7,002,228</b>	<b>1,001,591</b>	<b>6,991</b>	<b>7,582,190</b>	<b>1,075,653</b>	<b>7,049</b>	<b>0.8%</b>
<b>Heavy Total</b>		<b>4,547,687</b>	<b>1,332,452</b>	<b>3,413</b>	<b>4,257,172</b>	<b>1,141,287</b>	<b>3,730</b>	<b>9.3%</b>
<b>Grand Total</b>		<b>11,549,915</b>	<b>2,334,043</b>	<b>4,948</b>	<b>11,839,362</b>	<b>2,216,940</b>	<b>5,340</b>	<b>7.9%</b>

We also plotted the average distance purchased per transaction over time. As shown in Figure 10, there is a slight increase in the average distance purchased per transaction for goods van/truck/utility and trailer vehicles following the August 2012 changes. This reinforces the 12 month before and after comparison above.

**Figure 10: Average distance purchased per transaction over time (12 month centred moving average)**



Interestingly, this increase in the average distance purchased does not match perceptions reported by transport operators and the NZTA administrative team. Informants from the NZTA Palmerston North office reported observing a gradual trend towards operators reducing the amount of RUC they purchased per transaction, although admitted that this was based on their observations through interactions with individual operators rather than system-level data.

Amongst the case studies there were mixed reports. Only one of the thirteen case study operators stated that they now purchased RUC in greater increments:

**“Before [the legislative changes] we tried to mitigate our costs by buying small blocks [of RUC] and being as accurate as possible with our weight estimates... it was in our best interest to do this but took a lot of [administrative] time. Now that we pay a flat rate for each individual truck we have tended to buy more RUC at once, at least for our line haul fleet.”**

— commercial transport operator

The majority of operators reported that they had not changed the amount of RUC purchased per transaction, and that the frequency and amount of RUC purchased was determined based on the vehicle type, what it was used for, the distance it was likely to travel, and the load to be carried. Others had a set amount at which they purchased RUC for each transaction. Several operators noted that they tried to reduce the amount of RUC purchased where possible, in order to improve business cash flow by not having large amounts of RUC attached to a truck that may not be operational for a period of time. Any

reported changes were generally attributed to on-going business process adjustments and had not been influenced by the changes to the RUC system.

Operators that used eRUC systems tended to report purchasing smaller increments of RUC on adoption of the electronic system. This was largely attributed to the auto-purchasing function of such systems, which meant that the cash flow benefits of small increments could be achieved without additional administrative burden. Operators reported that although this purchasing behaviour attracted higher administration fees, the liquidity benefits outweighed the higher fees.

As the new RUC system continues to 'bed down', and uptake of electronic RUC increases, on-going monitoring of average distance purchased per transaction will enable the Ministry to determine whether these reported changes in operator behaviour are observable at the system level.

## 4.5 Electronic RUC

This section addresses questions relating to the advantages of electronic RUC (eRUC) systems for operators and government, the uptake of eRUC systems by operators, the barriers to uptake of eRUC systems, and what can be done to enhance and increase the use of eRUC systems. In addition, this section gives an overview of the progress of the *Code of Practice for Electronic Road User Charges Management Systems* and gives insight into the industry's perception of the approval process.

### 4.5.1 The process of gaining NZTA approval for eRUC devices is now clearer

Organisations wishing to become eRUC providers must gain the authority to issue electronic RUC licences as well as gain approval for their electronic distance recorder device. Prior to the 2012 legislative changes, issuing licences was governed by the *Road User Charges Act 1977*, while the approval for electronic distance recorders was governed by 2010 amendments to the RUC regulations, meaning that two separate approvals processes were required. The *Road User Charges Act 2012* provided for a single application process.

There are currently two approved eRUC providers, who underwent the approvals process in 2010 and 2011 respectively, and one new provider currently undergoing the NZTA approvals process. These companies entered the eRUC market during different phases of the legislative change, and had differing experiences of the approvals process.

The first two eRUC providers to enter the market reported that the process of gaining approval for their eRUC device was challenging and time consuming. Electronic RUC was a new concept for the NZTA, and its introduction required the establishment of new systems and processes. The first two companies were developing their eRUC device whilst the NZTA's approvals process was still undergoing its own development. Both companies reported that gaining approval for the electronic distance recorder required multiple prototype systems being developed and rejected for not meeting NZTA standards, and stated that the process was time consuming and costly.

Since the passing of the 2012 RUC legislation a third eRUC provider has now entered the market and is currently undergoing the approvals process under the new legislation. While policy documentation related to electronic RUC systems specifies a single application process for that covers both the

authority to issue RUC licences and electronic distance recorder approval,<sup>13</sup> interviews with NZTA personnel suggested that two separate approvals are still required. However, the authority to issue both these approvals now sits with the NZTA, allowing for a single agency to oversee the full approval process.

Interviews with the new provider reported that the process to become a RUC agent was very simple. However, the process of gaining approval for the electronic device is more complex as it entails strict testing by NZTA-approved independent authorities to ensure that the submitted eRUC device complies with accuracy and security standards. While the provider reported a perception that the process of gaining NZTA approval was time consuming, delays incurred appear to be due to the provider not supplying a device that met the required standards, rather than delays caused by the NZTA. In contrast with the first two approved eRUC providers, the third provider reported that the NZTA has generally been able to provide clear timeframes and expectations around the EDR approval process. This appears to be due to the development of the code of practice, which has provided clearer guidelines on the stages of gaining approval and requirements for the eRUC device (see Section 4.5.2).

#### **4.5.2 The development of a code of practice for electronic RUC systems has been well-received by the eRUC providers**

The new RUC legislation required the Ministry of Transport to issue compliance advice for eRUC devices in the form of a code of practice. This was intended to “exist outside legislation and establish standards, requirements, procedures or acceptable solutions to assist in complying with the fit-for-purpose requirement”.<sup>14</sup> Interim guidelines for eRUC systems were developed in November 2010. These provided information on the approval processes to become an agent of the NZTA as specified under the *Road User Charges Act 1977* and for approval of an electronic distance recorder as permitted in the *RUC Regulations Amendment 2010*, as well as technical performance and security requirements for an eRUC system.

In 2011, the Ministry of Transport approached Standards New Zealand to run a scoping project to take the interim guidelines and work with a variety of industry representatives to decide how best to progress the development of a permanent code of practice. During this process the industry representatives voiced their opinions on the guidelines, covering what they thought should be retained and any key points that they thought were missing, to work toward the development of the formal code of practice. With the changes to RUC Act in 2012, the ownership of the guidelines shifted from the Ministry of Transport to the NZTA. From here the new project commenced and was guided by the recommendations made to Standards New Zealand by the scoping group.

Since the Cycle one evaluation report there has been significant progress. In late 2013, the NZTA engaged with Standards New Zealand to begin drafting the formal code of practice for eRUC systems. The purpose of the code of practice is to “provide an authoritative single source of guidance for the

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<sup>13</sup> Ministry of Transport, *Road User Charges: A Regulatory Framework for Electronic Management Systems*, 24 June 2010.

<sup>14</sup> Ministry of Transport, *Road User Charges: A Regulatory Framework for Electronic Management Systems*, 24 June 2010.

performance and implementation of eRUC systems”.<sup>15</sup> The code of practice describes the roles and responsibilities of government and is intended to support compliance with relevant international standards and New Zealand legislation. It is the NZTA’s intention for the code of practice to help give “eRUC system providers and consumers confidence that eRUC products meet or exceed the minimum performance requirements for accuracy and reliability, have been through the required testing and auditing processes, and are secure and tamper-evident.”<sup>16</sup>

The development of the code of practice followed a process which included preparation of a draft by an expert technical committee,<sup>17</sup> consensus decision-making processes, consultation with the relevant sectors<sup>18</sup> and public consultation, which concluded on 1 July 2014. From this point, Standards New Zealand will meet to review and consider the submissions, and incorporate the feedback into a new draft code of practice. Following this, it will be formally voted on by the committee before the recommended code of practice is submitted to the NZTA for final approval.

Generally, the code of practice has been well-received from the eRUC industry. There was heavy industry involvement from two of the eRUC companies during the development of the draft code of practice. As such, these companies were able to help shape the code of practice to be more industry-friendly and address issues they had experienced during the approvals process.

**“Having a code of practice that clearly identifies the required outcomes, the approval process and the performance requirements will go a long way to helping to maintain the integrity of the electronic system providers and define the level of service they are required to deliver.”**

**- eRUC provider**

There was the perception in the industry that the interim guidelines were too prescriptive, and in effect, restrictive. For example, one company found the guidelines to be too constraining to allow the incorporation of new, cheaper technologies into their systems. The code of practice was intended to be more descriptive in its guidance and has received positive feedback from the eRUC providers that we spoke to. One provider stated that the code of practice appears to provide clear guidance around requirements, but also support technological evolution.

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<sup>15</sup> Standards New Zealand, *Code of Practice for Electronic Road User Charges Management Systems: 2014 Draft for Public Consultation*, July 2014.

<sup>16</sup> Standards New Zealand, *Code of Practice for Electronic Road User Charges Management Systems: 2014 Draft for Public Consultation*, July 2014.

<sup>17</sup> The technical committee included representatives from: EROAD Limited, Institution of Professional Engineers New Zealand, International Telematics, Ministry of Transport, New Zealand Automobile Association, New Zealand Police, New Zealand, Technology Industry Association, New Zealand Transport Agency, Road Transport Forum New Zealand.

<sup>18</sup> Consultation was conducted through a scoping workshop which included representatives from: Black Box Spatial Ltd, Critchlow Limited, EROAD Limited, Fonterra Co-operative Group, Imarda NZ Ltd, International Accreditation New Zealand, International Telematics, Ministry of Transport, Navman Wireless, New Zealand Automobile Association, New Zealand Transport Agency, Precision Tracking NZ Ltd, Road Transport Forum NZ, Vodafone New Zealand Ltd, Xlerate Technologies Limited.



Electronic RUC providers did note that the some requirements related to the eRUC device remain restrictive. This was particularly pertinent in the licence display requirements. As it stands the eRUC system must meet the display criteria of the RUC Act 2012. This was seen to be restrictive. For example, one company noted that it would be possible to develop software that would allow smart devices to display the requisite RUC licence. They believe that this would enable cheaper eRUC solutions to be developed, which would ultimately lead to greater uptake by transport operators. We note that there may be security concerns related to a smart phone operated system, and that any such device would have to undergo the approvals process and have evidence that it is tamper-proof and secure.

#### 4.5.3 There has been a continued uptake of eRUC systems amongst operators

Informants from the NZTA, Police and industry associations believe that there has been a marked increase in the uptake of eRUC amongst operators. One eRUC provider believes that currently approximately 13,000 – 14,000 vehicles have an eRUC system installed, and that this number is continuing to increase. Findings from analysis of eRUC transaction data confirm this perception of increasing eRUC prevalence. From the July 2013 to June 2014 eRUC sales as a percentage of total sales has increased from 13.9 percent to 17.6 percent.

**Figure 11: eRUC transactions as a percentage of total transactions July 2013 – June 2014**



Figure 11 shows a gradual, but increasing trend of eRUC sales over a twelve month period. At its peak, eRUC sales account for 17.8 percent of the total transactions from the month of May. This increasing trend, likely correlates to an increasing number of eRUC systems installed in the New Zealand fleet.

The uptake of eRUC has predominately been undertaken by operators with larger fleets. This is likely because of their greater capital base which allows them to purchase and installed the systems. Larger

companies are also more likely to have internal compliance driven mandates which, as previously mentioned, can be monitored and enforced through eRUC systems, making these types of companies more predisposed to taking on eRUC systems. It has also been reported that fleets that do a large amount of off-road driving are more likely to take on eRUC systems, as the off-road tracking and recording capabilities of eRUC systems save significant administration time for this specific aspect of RUC recording.

#### **4.5.4 The benefits of eRUC systems for operators are reduced administrations costs, and increased driver compliance and accuracy of RUC recording**

Interviews with transport operators using eRUC systems found their perception of the systems to be positive. For most operators, the RUC functionality of the electronic management system played a large factor in their decision to implement electronic management systems into their fleet. Conversely, a minority of operators viewed the RUC function as an added incentive, rather than the deciding factor.

As reported in the cycle one evaluation report, one of the benefits of eRUC centred on administration. Operators reported that the amount of time spent on administering RUC had decreased significantly as a result of taking on eRUC systems, and in the process have also removed the possibility of human error, both in recording and purchasing of RUC. Additionally, these systems provided operators with much more flexibility in their method of administering RUC. The eRUC systems allow drivers to switch the system to a “set and forget” automated purchase or to manually purchase RUC as they need it. This also provides a means for operators to mitigate the risk of overrunning the RUC distance purchased; if the eRUC system is set to auto-purchase, overrun of RUC cannot occur. The potential for overrun is only present when the system is set to manual purchase and the operator either accidentally or intentionally overruns.

Another administrative advantage of eRUC systems for operators is the ease of off-road refund processing. The eRUC systems have the ability automatically link and electronically map all the off-road distances travelled by the truck and trailer. The eRUC systems also pre-populate the Road User Charges Off-Road Report (RUCOR) form with the amount of off-road distance travelled. This removes the need for manual hubodometer readings, recording and processing, thereby saving operator time.

Operators also reported the improved accuracy and reliability of electronic hubodometer in comparison to the mechanical hubodometers. They are reportedly significantly less likely to break down, and rarely need replacing.

Electronic RUC systems also provide operators with an opportunity to ensure RUC compliance within their fleet. This was especially important to operators with larger fleets.

**“Our methods of internal compliance checking through the eRUC system are much more effective in ensuring [RUC] compliance within our fleet than external policing.”**

**- large transport operator**

Since installing an eRUC system in their fleet, one large transport operator had instigated a ‘three strike’ compliance programme for their drivers and owner-drivers. This has enabled them to monitor and

enforce standards of compliance and safety in their fleet. RUC overrun is one of the three main areas of focus (the other areas being speed and safety).

Outside of the ability to manage RUC, these systems also provide operators with fleet management tools, such as GPS tracking, fuel efficiency monitoring and analysis of driver behaviour patterns. These additional features have been incorporated in many of the companies' internal compliance programmes. Through monitoring their drivers' behaviour and patterns, companies can ensure that they are driving efficiently and safely. The ability to monitor this has led to two different companies implementing an incentive programme for their drivers, which rewards drivers for efficient, safe driving.

The ability to manage RUC electronically was a large contributing factor in the decision for most operators to take on electronic management systems. However, other fleet management tools the systems also provided a strong incentive. Operators said that they would not take on a system if it did not feature eRUC management, but conversely, they would not purchase a system that only managed RUC and did not have the other fleet management tools. One eRUC provider believes that eRUC is now a mandatory component of any electronic management system, and that their company would struggle to sell their systems if they did not incorporate eRUC capabilities. Regardless, the integrated nature of the systems means that it would be difficult for the eRUC component to be separated from the hardware that provides the rest of the fleet management options.

#### **4.5.4 The benefits of eRUC systems for government include greater compliance and reduced administrative time**

Whilst most of the advantages of eRUC systems have been enjoyed by the operators, there have been benefits for the government as well. One benefit has been an increased level of compliance amongst operators. It is perceived that as the number operators that take on eRUC systems increases, there are fewer operators on the road who have the ability to be non-compliant through RUC overrun (either accidentally or deliberately). However, it is likely that the operators that have taken on the eRUC systems were already compliant under the previous system. Those that still wish to evade were seen as less likely to take on an eRUC system.

There was the perception amongst some NZTA staff and eRUC providers that the use of eRUC systems by operators has reduced the NZTA's internal administration time. The uptake of eRUC systems has helped the NZTA's assessment process, as operators can now provide much more detailed and accurate data on the distance travelled. One eRUC provider reported that it purchased 27 percent of all heavy licences purchased in the month of April 2014. Although we have not been able to substantiate this claim, the company contends that this would have lowered the administration cost for the NZTA as most of the processing of this was done by their systems.

**“Once you get operators to a certain level of integrity through the uptake of eRUC systems, the NZTA should not have to maintain the same level of oversight over administration and compliance checking.”**

**- eRUC provider**

The Police's Commercial Vehicle Inspection Unit (CVIU) has also reported benefits from eRUC systems. One eRUC system presents CVIU officers with a barcode than can be easily scanned when pulled over.

This has reportedly reduced the administration time of CVIU officers at road side checks, as it means that they no longer have to manually populate the data into their system. One officer reported that this reduction in time may have the added advantage of increasing the number of vehicles that can be stopped for checks.

#### **4.5.7 Cost remains a significant barrier to uptake of eRUC**

Cost remains a significant barrier to the uptake of eRUC systems. Currently the cost of an electronic management system ranges between \$800-\$900, as well as an additional \$40 monthly administration fee, per unit. These systems do not provide just eRUC services; as noted, most of these systems also provide a myriad of other fleet management capabilities, which contribute to the overall cost of the system. Most operators who have not taken on an eRUC system reported that cost was the main barrier to installing the systems in their fleets. This was especially evident among operators with smaller fleets. These fleets reported that their smaller profit margins did not enable them to purchase the systems, although some voiced that they certainly would if they could afford to. In addition, smaller fleets are unlikely to benefit as much from the fleet management aspects of the system, as they can already monitor their vehicles relatively well.

One eRUC provider believes that the additional credit card charges levied on eRUC transactions acts as a barrier for some operators in taking on their system, as purchasing RUC through their eRUC system has this additional cost. As part of the purchasing process the eRUC provider must pass on the cost of credit card transactions (approximately 2 percent of the transaction cost) onto the customer. Whereas if the operator were to purchase RUC manually through the NZTA website the credit card fee would be waived. The provider also believed that smaller companies are also more adversely affected by the additional credit card charges, contributing to the lower uptake of their systems among these operators. The NZTA is currently trying to come to a position on the whether it can begin to charge credit card fees.

As noted above, a third eRUC company is currently undergoing the NZTA's approvals process. Once this company enters the market, it is possible that their added competition may help to reduce the prices of eRUC systems. They intend to try to target the smaller fleet market. In addition, it is possible that cheaper solutions are likely to begin to emerge as technology progresses. For instance, one eRUC provider has been investigating the implementation of smart phone and tablet devices as part of an eRUC system. It is their belief that the introduction of technology such as this would dramatically reduce the cost of eRUC systems, and allow for greater uptake.

Concern about information sharing was another barrier to uptake for a small number of operators. The basis of this concern was twofold. Some operators were concerned about the added potential for government oversight into their operations, which they considered to be a strictly private matter. The second basis of concern stemmed from operators' apprehension about data being identifiable and traceable to their company. The nature of the industry is such that any information gained about competitors can be turned into a competitive advantage by other operators. It is likely that this concern is product of a misconception amongst operators. After discussion with one eRUC provider, it was found that their operator data was anonymised by a third party before external viewing. This anonymisation of data ensures the privacy of operators' data, and protects it from being linked to their company.

#### **4.5.8 There is potential for a number of functions which may enhance eRUC systems**

There is scope for the enhancement of eRUC systems to expand to provide additional administrative services. Providers are strongly advocating for more labels to be permitted to be displayed by their systems. They designed their technology to be able to display any of the compliance labels, such as certificate of fitness (COF), transport services licence (TSL), weigh notifications, and registration can be digitised into digital display and quick response (QR) barcode forms. The QR codes could easily be scanned and checked by Police, much like what is done currently with eRUC. The current requirement for continuous display of the RUC licence is acting as a barrier to this.

One eRUC provider also voiced interest in expanding their eRUC system to aid police monitoring. Their proposal was to incorporate their eRUC system with weigh-in-motion devices (WIMD) and cameras to monitor operator compliance. The proposed system entailed a WIMD that can record the weight of each individual axle of the truck that is passing over the device as well as its total weight. This would be paired with a camera and computer system that can record the number plate and assign the vehicle to an operator. Should the recorded weight not match the RUC and/or permit data in the NZTA system, then a notification could be sent to the driver through their eRUC system to pull over and be manually checked and weighed at a designated station near the monitoring system. This process of weighing, checking and notification would all take place in real-time. This technology would allow the WIMD to act as a filter system for Police, as it would enable them to allocate fewer resources to stopping compliant trucks, so that more can be focussed on non-compliant operators. Similar monitoring technology already exists on the Auckland Harbour Bridge, however without the eRUC notification component.

As previously mentioned, one eRUC provider indicated their desire to be able to develop and sell a smart device operated system. The hardware for their system would be composed of a smart device (tablet or phone) that could be bought independently by the operator, and a software component developed by them, which would include the eRUC and fleet management programming. This system would be much more cost-effective and may therefore increase the uptake of eRUC systems. However, it is likely that this new technology would open up some security holes, as there is much more potential for smart devices to be tampered with. This would need to be addressed before any smart device operated system could be implemented.

## 5 IMPACTS OF THE RUC SYSTEM ON GOVERNMENT

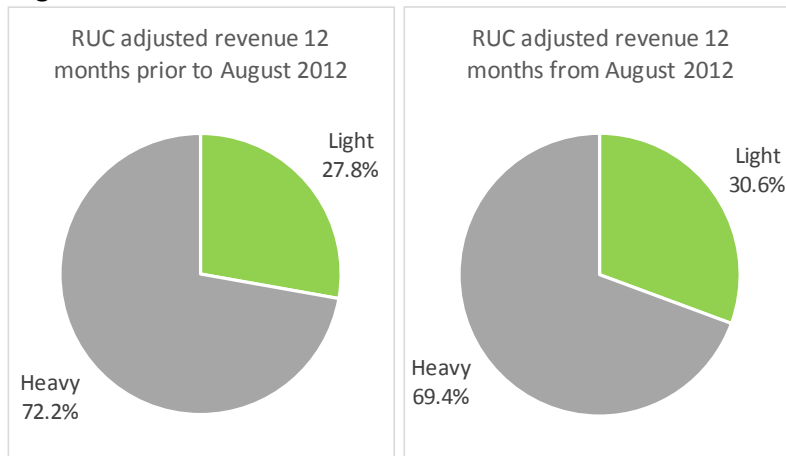
### 5.1 Revenue neutrality

Road user charges contribute toward the cost of constructing and maintaining the roading infrastructure. This section addresses evaluation questions related to whether the new RUC system is maintaining the level of RUC revenue that would have been generated by the previous system, including whether changes of vehicle type and overlapping licences has had any impact on RUC revenue.

#### 5.1.1 The market share of RUC adjusted revenue and distance for light diesel vehicles has increased following the changes to the RUC system

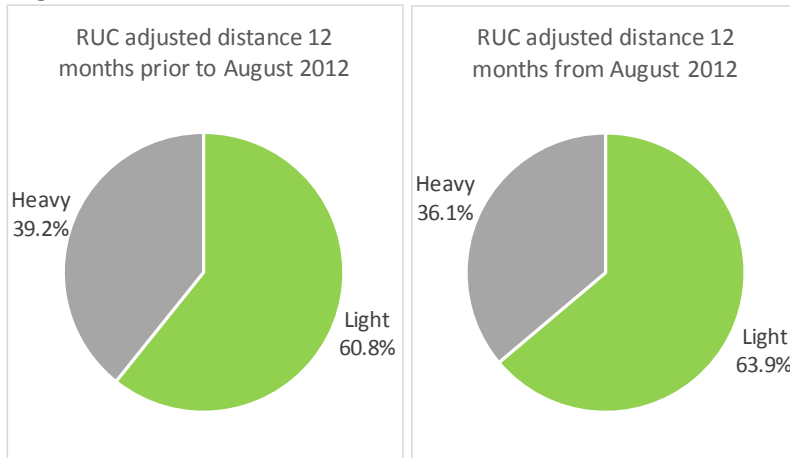
Figure 12 below shows the proportion of RUC revenue paid by light diesel vehicles 12 months prior to and after August 2012, adjusted to remove the effect of the annual RUC price adjustment. This shows that the proportion of LDV revenue has increased from 28 percent in the 12 months prior to the changes to 31 percent in the 12 months after the changes.

**Figure 12: RUC revenue by light and heavy vehicle for 12 months prior and 12 months following August 2012**



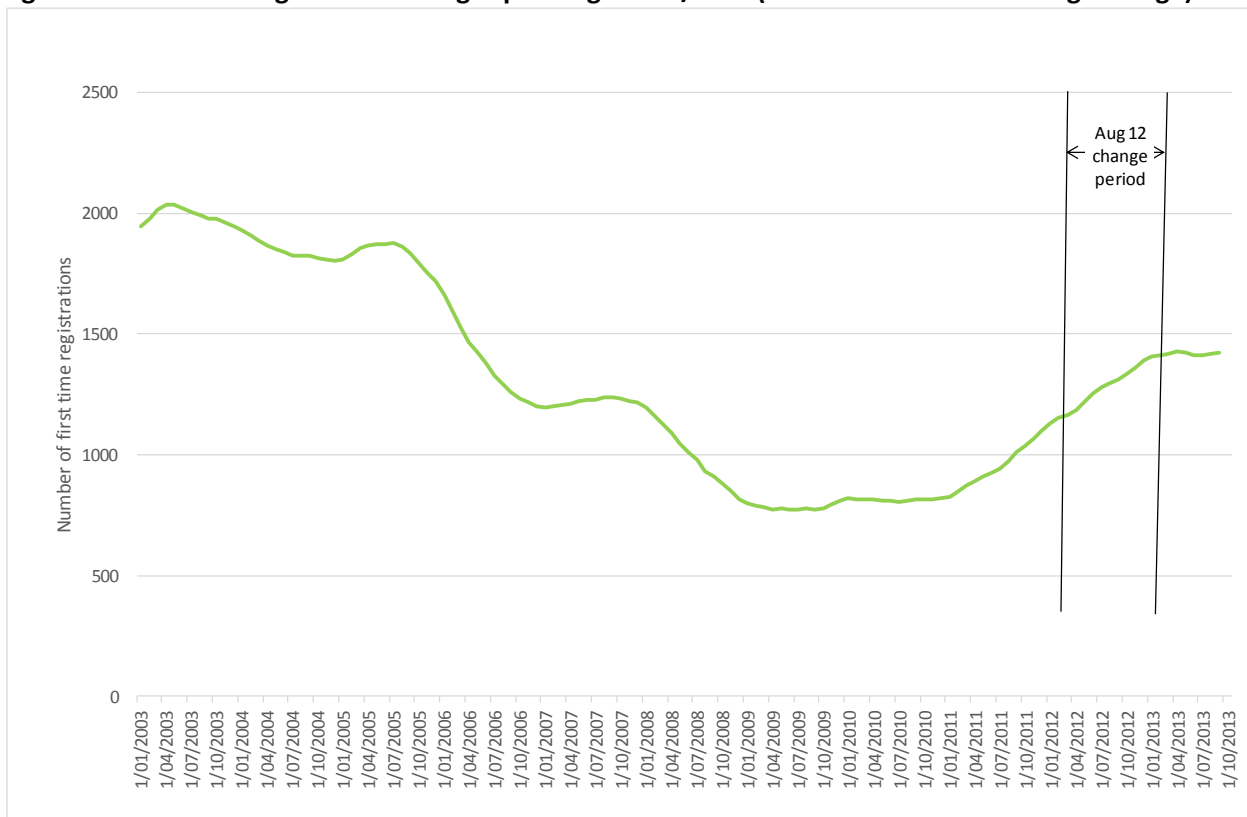
Similarly, Figure 13 shows that the light diesel vehicle share of RUC adjusted revenue has increased from 61 percent to 64 percent.

**Figure 13: RUC distance by light and heavy vehicle for 12 months prior and 12 months following August 2012**



Interviews with NZTA personnel and the transport sector suggested that the change in market share is unlikely to be related to the RUC August 2012 changes and instead is probably attributable to wider economic factors, such as an increase in the number of light diesel vehicles on the road. Analysis of first time registrations of LDVs, as displayed in Figure 14, shows an increasing trend in the number of LDVs registered which appears to support this contention.

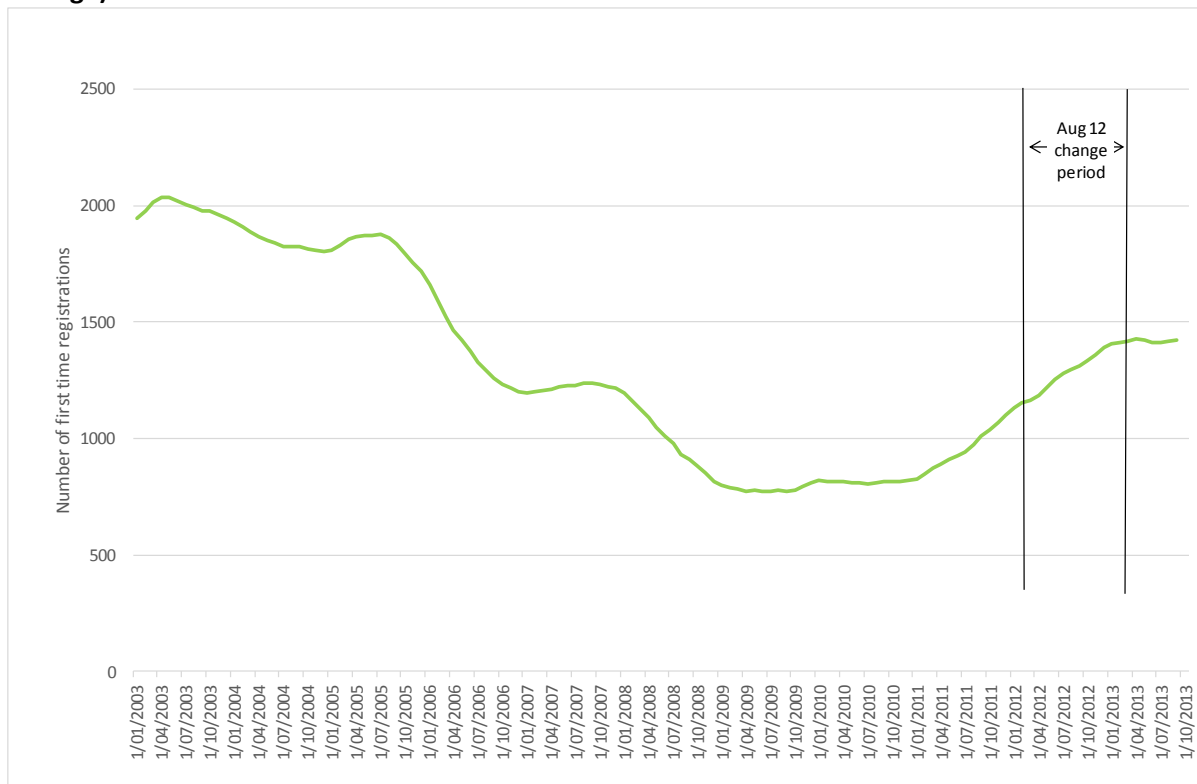
**Figure 14: First time registrations of light passenger cars/vans (12 month centred moving average)**



### 5.1.2 Overall RUC revenue per kilometre shows the changes to the RUC system have been broadly revenue neutral

Policy documentation related to the changes to the RUC system notes that the transition to the new definition of RUC weight is intended to be revenue neutral, with reductions and increases in RUC paid by vehicle operators cancelling each other out.<sup>19</sup> The evaluation team tested the extent to which this has been achieved by analysing trends related to RUC revenue per kilometre over time. The results are displayed in Figure 15 below.

**Figure 15: RUC revenue per km by light and heavy and powered/trailer (12 month centred moving average)**



Looking in more detail, Table 6 provides information on average revenue per kilometre across vehicle categories for the 12 months prior to and after the August 2012 changes. This shows that RUC revenue per kilometre has increased by 0.4 percent for light vehicles and decreased by 0.3 percent for heavy vehicles.

The reduction in revenue per kilometre for trailers (-7.4 percent) may be due to changes in trailer types being used, such as the uptake of five axel trailers in place of four axle trailers (see Section 4.3.3), a reduction in the use of type 37 three axle trailers (which have a higher RUC rate than other trailer types) and moving trailers to dedicated use in B trains.

<sup>19</sup> Ministry of Transport. *Road User Charges: Change to the Definition of Licence Weight Cabinet Paper*, 24 July 2010.



**Table 6: RUC revenue per km by light and heavy and powered/trailer (12 month centred moving average)**

Weight category	Vehicle description	Revenue per km (12 months prior to August 2012)	Revenue per km (12 months after to August 2012)	Change in revenue per km
Light	Bus	\$0.0550	\$0.0546	-0.7%
	Goods van/truck/utility	\$0.0545	\$0.0546	0.2%
	Motor Caravan	\$0.0556	\$0.0543	-2.3%
	Passenger car/van	\$0.0544	\$0.0548	0.7%
<b>Light total</b>		<b>\$0.0545</b>	<b>\$0.0547</b>	<b>0.4%</b>
Heavy	Bus	\$0.1810	\$0.1986	9.7%
	Goods van/truck/utility	\$0.2498	\$0.2508	0.4%
	Motor Caravan	\$0.0698	\$0.0685	-1.9%
	Passenger car/van	\$0.0583	\$0.0708	21.4%
	Trailer	\$0.2318	\$0.1734	-7.4%
<b>Heavy total</b>		<b>\$0.2195</b>	<b>\$0.2189</b>	<b>-0.3%</b>
<b>Overall impact</b>		<b>\$0.1192</b>	<b>\$0.1140</b>	<b>-4.4%</b>

The overall RUC revenue per km has reduced 4.4 percent. This larger overall reduction (compared to the light and heavy rate changes) is likely to be due to a change in the mix of light and heavy vehicles due to external economic factors, as discussed in Section 5.1.1. The relatively small change in light and heavy rates indicates that the August 2012 RUC changes have been broadly revenue neutral.

A detailed breakdown of changes in RUC revenue and distance across vehicle types and axle configurations for the 12 months prior and 12 months following the August 2012 RUC changes is provided as appendix seven..

### 5.1.3 The number of swaps from H licences to standard licences has remained relatively stable, indicating that most vehicles are remaining on the H licence

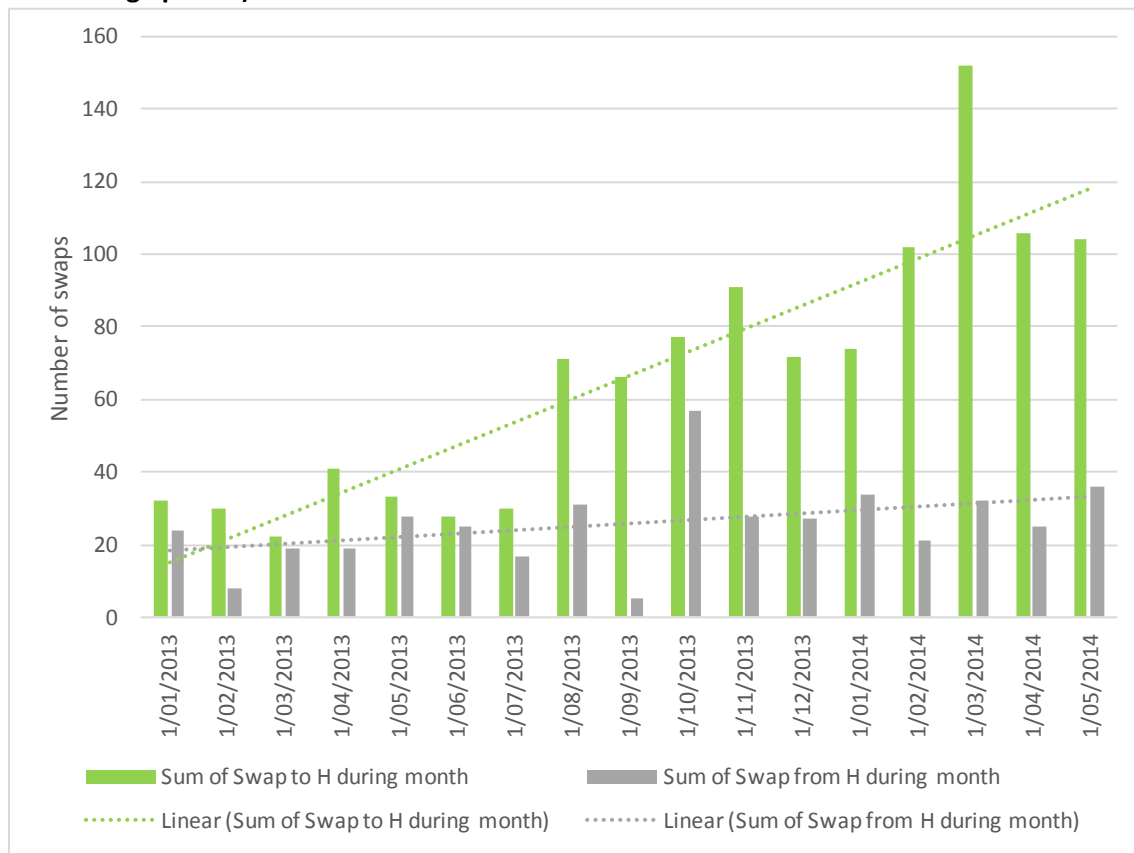
The Ministry has identified that a potential source of revenue leakage is the practice of swapping between H licences and standard licences. H licences are issued to vehicles that are part of an overweight combination vehicle. Transport operators can opt to use H licences for vehicles that run overweight most of the time, for trucks and trailers that remain in specific combinations.

Interviews with Ministry and NZTA officials stated that the RUC rates for H licences are calculated based on the assumption that vehicles will run unladen 50 percent of the time. It is also assumed that once an H licence is granted, the vehicle will largely remain on this licence type, and that vehicles which carry overweight loads only occasionally will obtain additional licences on a per load basis. However, anecdotal evidence has suggested that some transport operators may frequently change between H and standard licence types. This may result in revenue leakage if operators swap licence types so that the more costly H licence is only used when the vehicle is laden and a standard licence (with a lower RUC rate) is used when the vehicle is unladen.

Interviews with NZTA administrative personnel noted that staff had observed numerous instances of switching between vehicle types, sometimes as frequently as every two days. There is a \$50.50 fee for changing vehicle types, but NZTA staff reported the potential RUC savings available to operators generally outweighed the application fee. While swapping between H and standard licences is within the legal parameters of the system, it represents a potential source of lost revenue for the RUC collector.

The evaluation team analysed NZTA data related to the number of swaps between H and distance licences per month. The results (Figure 16) show that there has been some swapping between licences. Over time there has been a substantial increase in the number of vehicles swapping from standard licences to H licences, as illustrated by the green trend line. The number of swaps from H licences to standard licences (grey trend line) has remained relatively stable. This would seem to indicate that the number of swaps out of H licences is not large and therefore the problem of revenue leakage through using H licences only when the vehicle is laden is not widespread.

**Figure 16: Number of swaps between H and distance licences by month (from Jan 2013 to avoid Aug 2012 change period)**



We also explored the extent to which licence swapping was happening in the case studies with transport operators. We found that just over half of the case study operators (seven out of thirteen) had at least one vehicle with an H licence within their fleet. Three of these stated that they changed between H and

standard licence types, while the others reported that their vehicles remained on H licences. Reasons given for changing licence type were primarily to maximise efficiency in vehicle use. For example, one transport operator stated that they needed to change out of combination to use trucks for a short term seasonal activity, and then back into combination to use the trucks for their primary purpose. Reported changes between licence types were infrequent and generally for a specific purpose – we did not find any examples of operators regularly swapping between licence types. The time taken to process licence change applications (up to 10 days) was highlighted by several transport operators as a deterrent to more frequent changes.

## 5.2 Reduced evasion

This section considers the various forms of evasion occurring among RUC vehicle users. While initial findings suggest that weight based evasion may have decreased following the changes to the legislation in August 2012, not all evasion has been curbed by these changes according to both the industry and government agencies. This section focuses on the on-going impacts of the RUC changes on the level of evasion, and explores the prevalence of evasion at present, nearly two years on from the legislation change:.

### 5.2.1 Weight-based evasion in the under 44T vehicle categories has largely been eliminated

Multiple data sources have identified that the changes made to the RUC system in August 2012 have resulted in a significant decrease in weight based evasion among heavy diesel vehicles in the vehicle types up to 44 tonne.

Data collected by the annual Police CVIU Heavy Vehicle Compliance Measurement Operation supports these perceptions. This operation occurs annually over a four week period during February and March, stopping approximately 2000 heavy vehicle combinations at predetermined sites. From 2013, RUC evasion detected by the survey is limited to running a vehicle over the purchased distance, as running above the purchased weight is no longer possible. Table 7 below shows a significant drop in detected evasion occurring since the changes to the RUC system. However, as the now survey measures only distance overrun, and does not include other forms of non-compliance such as those discussed in Section 5.2, the results should not be seen as an accurate measure of overall RUC compliance. Given the elimination of weight based evasion due to the RUC changes, the Ministry and the NZTA may wish to work with NZ Police to review the RUC component of the annual CVIU Heavy Vehicle Compliance Measurement Operation to better reflect the revised system.

**Table 7: Estimated RUC Evasion from CVIU Heavy Vehicle Compliance Measurement Operation**

	2005	2007	2008	2009	2010	2011	2012	2013	2014
Percent of RUC evaded	6.4%	5.0%	4.7%	3.6%	4.1%	4.8%	4.0%	1.2%	1.2%
RUC evaded multiplier	0.068	0.052	0.049	0.038	0.043	0.051	0.042	0.013	0.012

Source: NZ Police, *Estimating the Scale of RUC Evasion 2014*

The opinions of operational and senior level staff at the NZTA, along with Police, industry associations and transport operators support the findings presented by this Heavy Vehicle Compliance Measurement

Operation. Perceptions from across each of these groups indicate that the changes to the RUC Act in August 2012 made significant headway in reducing, or eliminating, weight based evasion of RUC among heavy vehicles.

Many transport operators have commended the Ministry of Transport for tightening up an area that was previously regarded as a loophole. This group felt that the reduction in weight based evasion has improved the credibility of the RUC system, and has also created a more level playing field among operators, making the competition fairer. As a result of addressing weight based evasion:

**“There are now less cowboys and idiots in the sector.”**

– **transport operator, heavy haulage**

There was overwhelming support for the reduction in weight based evasion as a result of the changes, as it enables each transport operator to keep up with the competition without facing the same level of undercutting by those evading RUC.

The feedback from both government agencies and the transport industry suggests that the legislation is at this point achieving the aims it set out to in reducing weight based evasion, with most also reflecting that the RUC system has become more credible as a result.

### **5.2.2 Evasion through odometer and hubodometer tampering and paying RUC to under the permitted weight is still occurring**

While the majority of informants suggested that the changes implemented to the RUC system in August 2012 have been largely successful in eliminating weight based evasion, these same informants in most cases shared their concern for other forms of evasion thought to be occurring among diesel vehicle users.

One thing that was not clear was the level to which these forms of evasion are occurring. Interviews with Police personnel found a belief that it was not a significant issue, rather being one that occurs among a small minority. This perception correlates with that of senior NZTA staff, who have not heard the issue of evasion filtering up to their level, and thereby do not consider it as a prevalent issue requiring immediate response.

#### *Evasion among light diesel vehicle users*

Many informants mentioned light diesel vehicle users as a group which appear to be evading the RUC system, with many perceiving that evasion among this group remained at the level it was prior to the changes in August 2012. However, it was acknowledged that, other than distance overrun identified through WoF inspections, it is challenging to estimate prevalence of evasion amongst LDVs.

Several forms of evasion were reported to occur within the light diesel vehicle category. Police, industry associations and transport operators suggested that disconnection of the odometer, usually by installing a switch, was occurring amongst commercial LDV users. However, Police noted that it is particularly difficult to identify when this is occurring as it is hard to detect, and harder to prove, particularly given the constraints on Police authority to search vehicles for this purpose.

One informant had received reports of odometer switches being detected while undertaking pre-purchase vehicle inspections. These inspections have uncovered odometer switches in vehicles, however the informant did not believe the number of vehicles affected was concerning. A representative from an industry association however estimated that odometer switches could be installed in up to 30 percent of diesel vehicles, as even if not detected at the point of sale, the switches were often found much later following a vehicle trade in or sale.

Of those light diesel vehicles said to be evading, the majority of informants suggested anecdotally that it is vans or small trucks being used commercially in cities that are the worst offenders, with many labelling couriers as the most prominent evading group due to the small profit margin in their line of business.

#### *Evasion by hubodometer tampering*

Interviews with industry associations and transport operators suggested that hubodometer tampering is not common, but is likely to be occurring amongst a minority of operators. This is difficult to detect, as a broken hubodometer may be accidental or deliberate. On one hand, some informants suggested that heavy vehicle users often have a faulty hubodometer without realising until their next CoF inspection, at which point in most cases the distance overrun is paid in full. On the other hand however, there appears a minority of heavy vehicle users who intentionally tamper with their hubodometers, with one Police staff member estimating that 1-2 percent of vehicles are evading with hubodometer tampering.

Informants shared their knowledge of several novel ways to tamper with a hubodometer, such as operators driving with two hubodometers, one faulty and one in working condition. They use the faulty hubodometer that does not record distance accurately (i.e. under-recording) or at all, and replace it with a working hubodometer just ahead of a CoF inspection.

Other operators simply remove the hubodometer with the risk of getting caught, and re-install it upon inspection. Others simply run without a warrant, registration, hubodometer, or RUC distance licence, again taking the risk of getting caught by the authorities.

Again, this is one area of evasion that is hard to monitor due to the difficulty in identifying heavy vehicle users tampering with hubodometers. Additional resources for enforcement teams and adequate technical training may improve detection of tampering, such as introducing checks to ensure hubodometers are fitted correctly and serial numbers are legitimate as part of CVIU roadside inspections. While this may be resource intensive for the CVIU to monitor, it could help to build a knowledge base around the extent of evasion via hubodometer tampering. Further incentive to uptake electronic management systems may be another way to curb tampering with mechanical hubodometers also, as these would be replaced by electronic hubodometers, which are more difficult to tamper with.

#### *Evasion by not paying RUC on permitted weight*

As discussed in Section 4.2.6, many operators expressed discontent with the permitting system and identified this as a key reason for either running heavy without a permit, or only purchasing RUC up to their actual load weight rather than the permit weight. Transport operators perceive having to pay RUC

up to the permit weight rather than the load weight as unfair, particularly heavy vehicle operators that carry non-divisible loads, and as a result some are intentionally paying RUC only to their actual weight. At least one transport operator has legal proceedings underway over this matter.

Many informants across both government agencies and the transport industry have highlighted this part of the legislation as requiring urgent review and amendment.

#### *Other concerns or forms of evasion*

Some informants identified the manipulation of vehicle GVM as a possible form of evasion. Manipulation of a vehicle's GVM may be motivated by several factors, including the opportunity to achieve a cheaper RUC rate or the ability to operate a vehicle which would usually require a heavy vehicle licence on a Class 1 licence. Regardless of the motivation, reducing vehicle GVM affects RUC payments and is therefore considered in this report.

There are two ways in which the manipulation of vehicle GVM has been observed. Firstly, there have been cases of vehicle manufacturers assigning different GVMs to virtually identical models to gain a more advantageous RUC rate. There is some question over whether this is in fact unlawful, but it may mean that some vehicles are paying less RUC than was intended for the particular vehicle type, which becomes problematic when the rate is substantially below that for its practical weight capacity, for example 9 tonnes instead of 12 tonnes.

Another form of GVM manipulation involves vehicle owners applying to change the vehicle's GVM. When GVM is changed it must be certified by an engineer, with appropriate documentation completed. This follows an established process, whereby the operator is asked why they are changing a GVM. For example, a spring may have been taken out. In some cases a change like this does not warrant a GVM modification, however the evaluation team heard anecdotal evidence that some minor modifications are resulting in certification anyway. It is understood that further investigation into this issue is ongoing, as modifications made to lower the GVM could weaken a vehicle but leave it large enough to carry heavier loads than it is capable of supporting safely.

Another form of evasion may be occurring where vehicles are registered as a Class B exempt vehicles, for example farm vehicles, however when the given addresses are identified as urban.

Finally, some forms of evasion are undertaken by those who may not warrant or register their vehicles, and therefore also not pay RUC. There is no way to measure missed revenue here, however it is likely that few operators would take this not insubstantial risk.

### **5.2.3 The development of a stronger NZTA investigative team, supported by greater information sharing, may deter RUC evasion**

A number of transport operators spoken to during this evaluation believed that enhancing the enforcement of the RUC system would help to prevent evasion. There is a perception amongst transport operators that CVIU RUC enforcement predominantly focuses on major state highways and transport operators in rural areas are less likely to be subject to roadside checks. One transport

operator said that in the 550,000km travelled in one week by their fleet, only three of their trucks were pulled over for a roadside inspection. This issue is discussed further in Section 5.4.3.

Feedback from the industry and NZTA personnel also suggests that there is a gap in investigation of RUC evasion. Under its new structure, the number of NZTA investigators decreased to just four nationwide, two in the North Island and two in the South Island. Many NZTA personnel spoken to felt this number is insufficient, and some transport operators reported a perception in the industry that fewer investigations were occurring, reducing the strength of this as a deterrent to evade RUC. It is noted that the form and role of the NZTA RUC Special Assessments team is still being developed, and that its work is evolving from calculating assessments to more active investigation. Developing a strong investigative team would help to deter transport operators from running the risk of evading RUC.

Additionally, information sharing between Police and NZTA has to date not been sufficient or consistent enough to support RUC investigations. Efforts are being made to improve the flow of information, and from April 2014 Police have begun entering data from the CVIR forms into the NZTA Road Inspection Database (RID) system, which the NZTA RUC Special Assessments team can use to inform their investigations. This is likely to further act as a deterrent to evade RUC.

### **5.3 NZTA processes related to RUC**

This section addresses the administrative complexity of the RUC system for NZTA, focussing on reduction in administrative complexity since the August 2012 changes, along with identifying areas requiring further improvement. The key evaluation focus of this section is the effectiveness of the new binding assessment process, and consideration of how the NZTA could reduce inefficiencies in RUC administration. The findings suggest that the trends identified in Cycle 1 of the evaluation in 2013 continue in Cycle 2. The similarities and exceptions are discussed in further detail below.

#### **5.3.1 The binding assessment process has created efficiency gains in NZTA RUC administration**

The efficiency gains found during the second cycle of evaluation resonate very closely with those identified in the first cycle of evaluation, which resulted overall in a small reduction in costs of RUC administration for the NZTA.

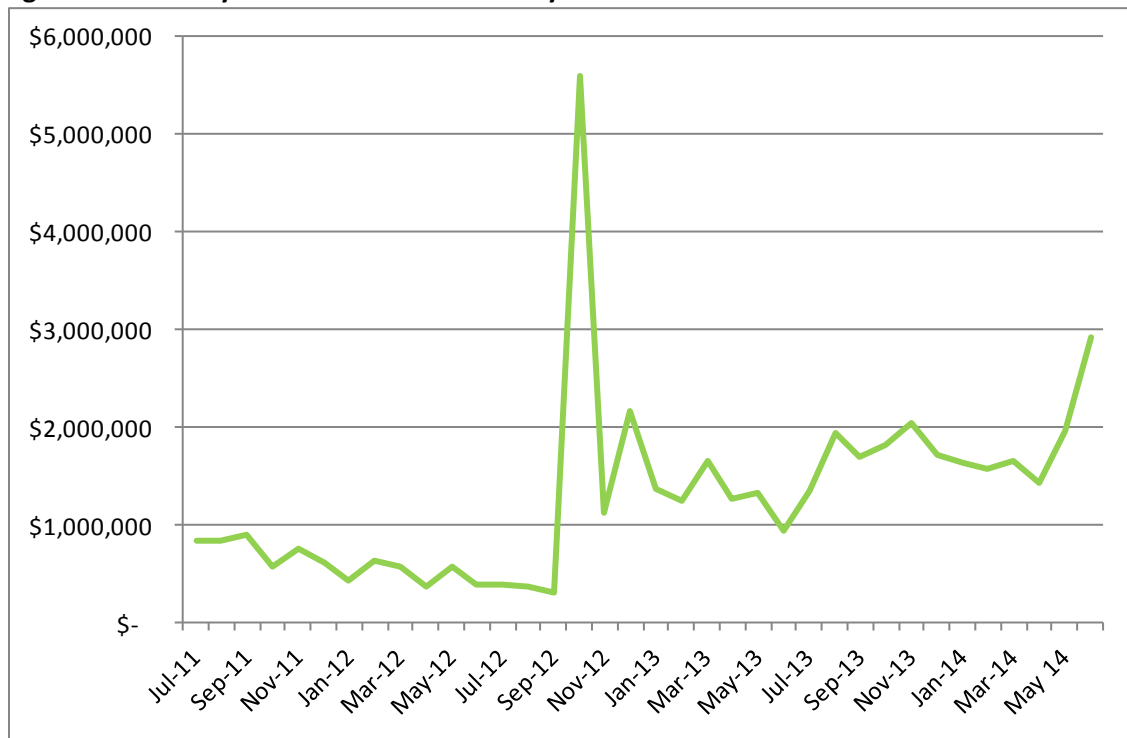
The NZTA's administration processes have been improved through the introduction of the binding assessment process. Under the previous RUC system, the NZTA had to engage with the transport operator to gain agreement for debt liability. NZTA informants identified that the new binding assessment process is particularly effective for dealing with heavy vehicle operators as they no longer need to engage in the process of signing a liability agreement, which required much NZTA administrative resource to engage with the operator and often included a visit to the company. Now an invoice (i.e. a binding assessment) is issued to the operator, and feedback suggests this process has saved considerable NZTA administrative time.

Another key change to the NZTA's processes has been the ability to automatically issue assessments for distance overrun, based on odometer information reported through WoF/CoF inspections. As shown in Table 8, this process has mainly been used for LDVs.

**Table 8: Number and value of binding assessments issued January to June 2014**

	Automatic		Manual	
	Number of invoices	Value	Number of invoices	Value
Heavy	525	\$1,142,233	1,668	\$2,475,769
Light	10,965	\$7,237,710	360	\$344,803

NZTA staff reported that the automatic assessment process has enabled them to be much more efficient and effective in identifying debt. As was found in evaluation cycle one, the new processes have resulted in substantially more invoiced debt. Figure 17 shows that, after a large backlog of invoices was sent immediately after the changes to the RUC system, the value of invoices sent per month remains higher than under the previous system.

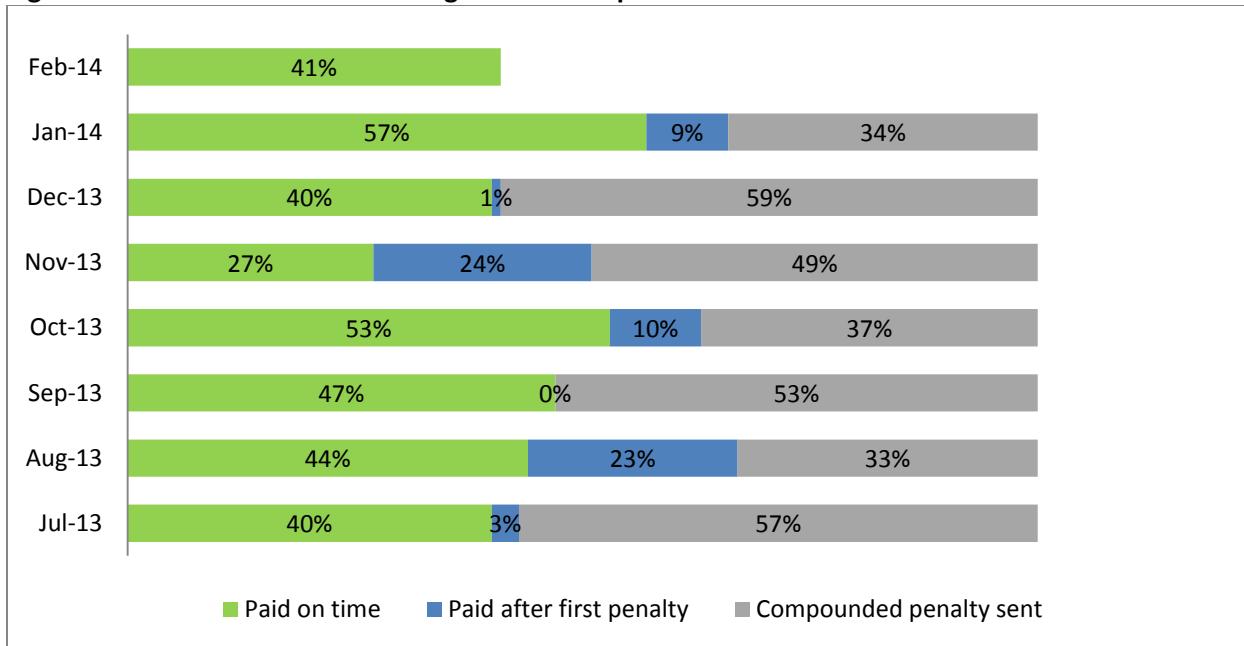
**Figure 17: Monthly invoiced RUC revenue July 2011 – June 2014**


### 5.3.2 Over half of the binding assessments are not paid on time

Evaluation cycle one found that only about 14 percent of the invoiced debt had been recovered. Data from the NZTA, displayed in Figure 18, shows that this has improved and an average of 43.6 percent of invoices are now paid after receiving the initial invoice.

While this is an improvement from the early stages of the new system's implementation, an average of 46 percent of invoices result in a compounded penalty being issued. This requires sending follow up letters and reminders and the administrative resource required in following up unpaid debt undermines some of the efficiency gains achieved through the binding assessment process.



**Figure 18: NZTA RUC Data: Percentage of invoices paid on time**


Interviews with industry associations and the NZTA indicate that many LDV owners still struggle to understand the new invoicing system, and that this may be leading to the high rates of late payment for invoices. In many cases LDV owners that are issued invoices instead purchase additional RUC from agents and expect that their debt is paid.

The new invoicing system was designed to inform owners of their RUC owing, however many owners instead perceive it to be a reminder to purchase new RUC. This disconnect has meant that owners are often overrunning and waiting for the invoice to arrive from the NZTA to pay, rather than pre-purchasing as intended. The NZTA has re-worded the invoices several times for greater clarity.

For heavy commercial vehicles, NZTA personnel noted that the removal of the need to sign a liability agreement had saved NZTA time, but also led to a missed opportunity for customer contact. Under the liability agreement system, affected people would often contact the NZTA and could make payment arrangements to suit individual circumstances. This was also an opportunity for NZTA staff to provide education on the RUC system to encourage future compliance. While this presented an upfront administrative cost, ensuring future compliance may have led to longer term administrative savings.

### 5.3.3 The new NZTA staff structure and uptake of eRUC has saved NZTA administrative time

The new staff structure for the NZTA RUC administration team has also increased efficiency. Staff members with the Palmerston North based RUC team used to have geographically assigned areas that they specialised in, however under the new structure all staff are cross-trained and have hands on team leaders. On-going training has been provided to the team, for example on new administrative processes such as new forms for combination vehicle types and RUC exemptions. NZTA staff feel there has been a higher output as a result of this additional training, and feedback from the transport industry would

suggest a similar level of satisfaction, with some commending NZTA for their help with various issues either via email or on the phone.

A final gain for NZTA administrative efficiency has been made with the increased uptake of electronic RUC systems. Much like the trend identified in the first cycle of evaluation:

**“There has been an on-going upward trend in the uptake of electronic RUC systems [...]. The use of third party RUC providers is beneficial to the NZTA as it removes the need for the agency to directly administer RUC. While it is difficult to quantify the amount of time saved, uptake of electronic RUC has steadily increased and as at the end of March 2013 the number of vehicles issued with an electronic RUC licence stood at 12,113.”**

- **Cycle 1 report, p.41**

The number of vehicles with electronic RUC promises to increase further based on the intentions of many transport operators shared during the data collection phase of this cycle of evaluation. The uptake of eRUC by transport operators not only provides benefits for users, but for the NZTA also by easing some administration processes, such as in processing off-road claims.

Further uptake of eRUC systems may assist in NZTA achieving greater efficiency in some of their administration processes. A movement away from mechanical hubodometers to electronic hubodometers would result in extensive efficiency gains for the NZTA, as approximately 22,000 currently hubodometer changes occur each year, causing a lot of administrative work for NZTA.

Electronic RUC would also make it easier to implement post-payment of RUC. There was a desire from transport operators for a bulk post-payment option, for example monthly invoicing. Several transport operators argued that one monthly transaction would reduce administration costs for both the operator and the NZTA. We understand that a review of alternative payment schemes for RUC is currently underway, and that this may include consideration of post payment of RUC.

#### **5.3.4 The efficiency of NZTA processes could be improved through moving to online electronic forms**

Feedback from both NZTA and transport operators has highlighted that a number of NZTA processes are unnecessarily cumbersome, due to the majority of processes being a manual transaction. Processes highlighted as particularly burdensome included applications to change RUC licence type, overweight and HPMV permits, and RUC off road refunds.

Each of these forms is available in paper and electronic format and can be submitted via post or email. NZTA staff then enter the details into their system for processing. NZTA personnel stated that each one takes between 5 and 15 minutes to process. At the other end however, some transport operators wait days to weeks for the applications to be processed as NZTA staff may not process the form for several days after receiving it due to workload issues.

Moving these application processes to online forms with automatic data transfer into NZTA systems would provide an opportunity for administrative savings for the NZTA as well as a faster turn around for operators.

Interviews with NZTA personnel suggested that barriers to movement of more processes online included the extent to which this is seen as a priority by the agency, as well as the potential for error if forms are not manually checked by NZTA staff. The NZTA has recently introduced an online form for 50MAX permit applications, which went live in March 2014. This has resulted in the turnaround time for 50MAX permits decreasing from around 5 days to approximately 48 hours. The online process provides applicants with immediate notice that their application has been received and is able to identify potential errors.<sup>20</sup> This will provide a 'test case' for online processes, which will be useful in assessing the possibility of moving to an online format for other NZTA application forms.

## 5.4 Enforcement of RUC

This section addresses evaluation questions related to the on-going impact of the changes to the RUC system on New Zealand Police enforcement procedures. It also addresses perceptions from Police and industry on the coverage of policing, and Police perceptions of their role in the enforcement of RUC.

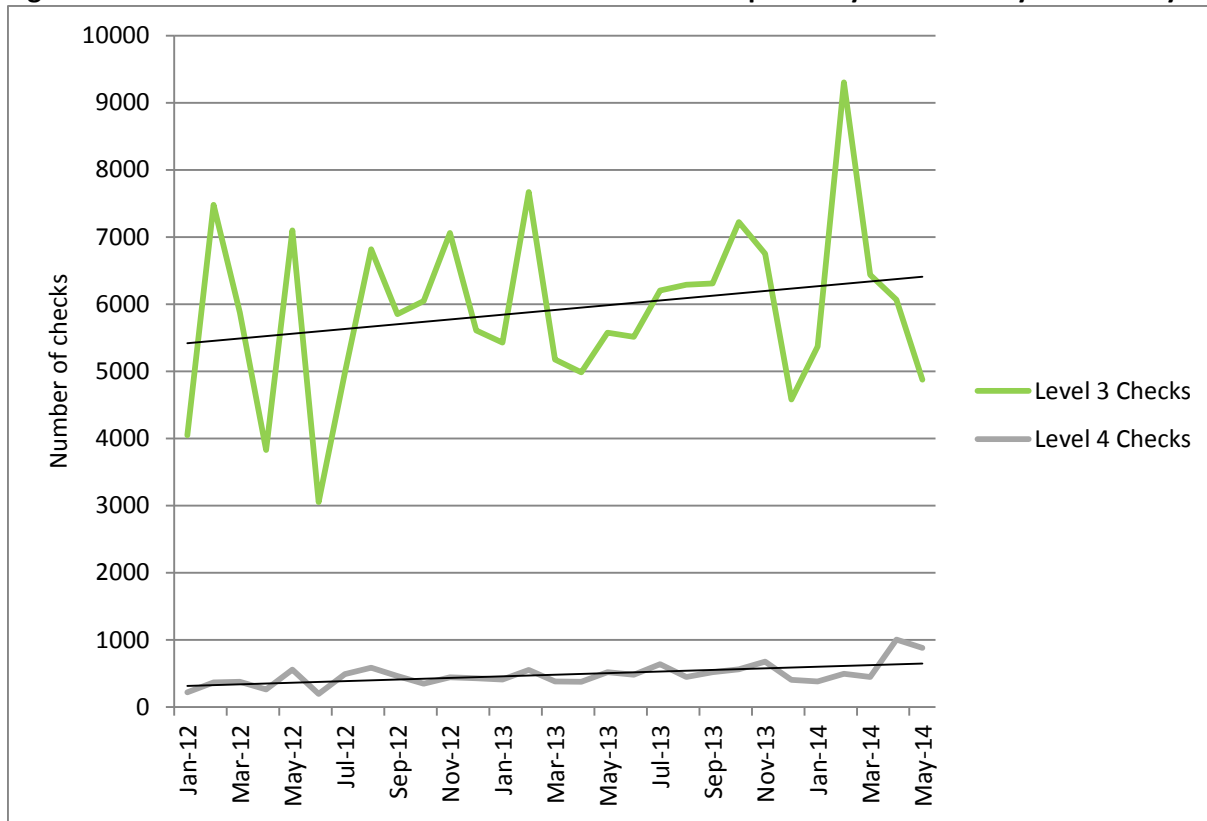
### 5.4.1 The simplified RUC system is more efficient to enforce

As reported in the previous evaluation cycle, Police generally have a positive view of the changes to the RUC system. Interviews with Police personnel suggested that the changes to the RUC system have simplified the enforcement of RUC, particularly for LDVs, and heavy vehicles under 44 tonnes. This is largely due to the removal of weight-based evasion as a RUC offence. Under the previous RUC system checking the compliance of heavy vehicles was complex because it involved both weight and distance checks. Removing the weight dimension of RUC has simplified the work of enforcement officers conducting roadside checks. This simplification has also led to a reported reduction in time needed to complete roadside checks, which has meant that Police have enjoyed some minor efficiency gains. Analysis of Police data on the number of level 3 and level 4 checks<sup>21</sup> completed, as displayed in Figure 19, shows an upward trend in the number of checks completed. The increase in the number of check does not appear to have been impacted by the August 2012 changes to the RUC system but rather is the continuation of an on-going upward trend.

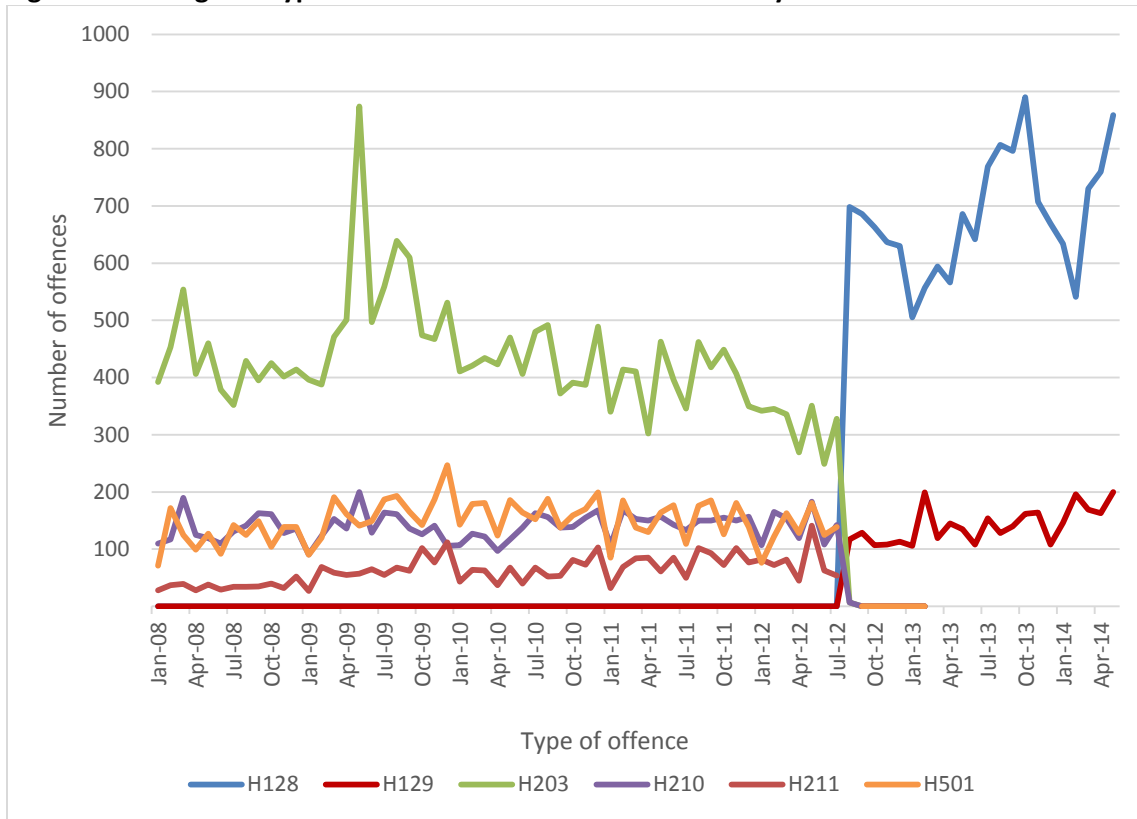
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<sup>20</sup> Diesel Talk, *50MAX Permits Online*, <http://dieseltalk.co.nz/news/50max-maps-permits-online>, Accessed 20 June, 2014.

<sup>21</sup> Level 3 checks involve an inspection of the operator's drivers licence, registration and CoF, RUC compliance, and aspects of the vehicle including headlights and taillights, brakes, tyres, seat-belt and chassis. Level 4 checks also involve weighing the vehicle.

**Figure 19: Number of level 3 and level 4 roadside checks completed by CVIU January 2012 – May 2014**


Data from Police shows an increase in the number of distance-based infringements issued. Figure 20 below shows that the number of infringements issued for distance-based evasion (represented by the grey and yellow lines prior to the RUC changes) increased significantly following the August 2012 changes (represented by the red and blue lines).

**Figure 20: Changes in types and number of offences detected by Police**


The following table details the offence codes of the previous graph.

**Table 9: Policing offences description**

Code	Description
H128	Exceeded maximum reading on distance licence - light RUC vehicle (RUC Act 2012)
H129	Exceeded maximum reading on distance licence - heavy RUC vehicle (RUC Act 2012)
H203	Drove outside mileage stated on licence (RUC Act 1977)
H210	Drove outside mileage stated on licence (operator) (RUC Act 1977)
H211	Operator exceeded gross weight on distance licence (RUC Act 1977)
H501	Exceeded gross weight distance licence (RUC Act 1977)

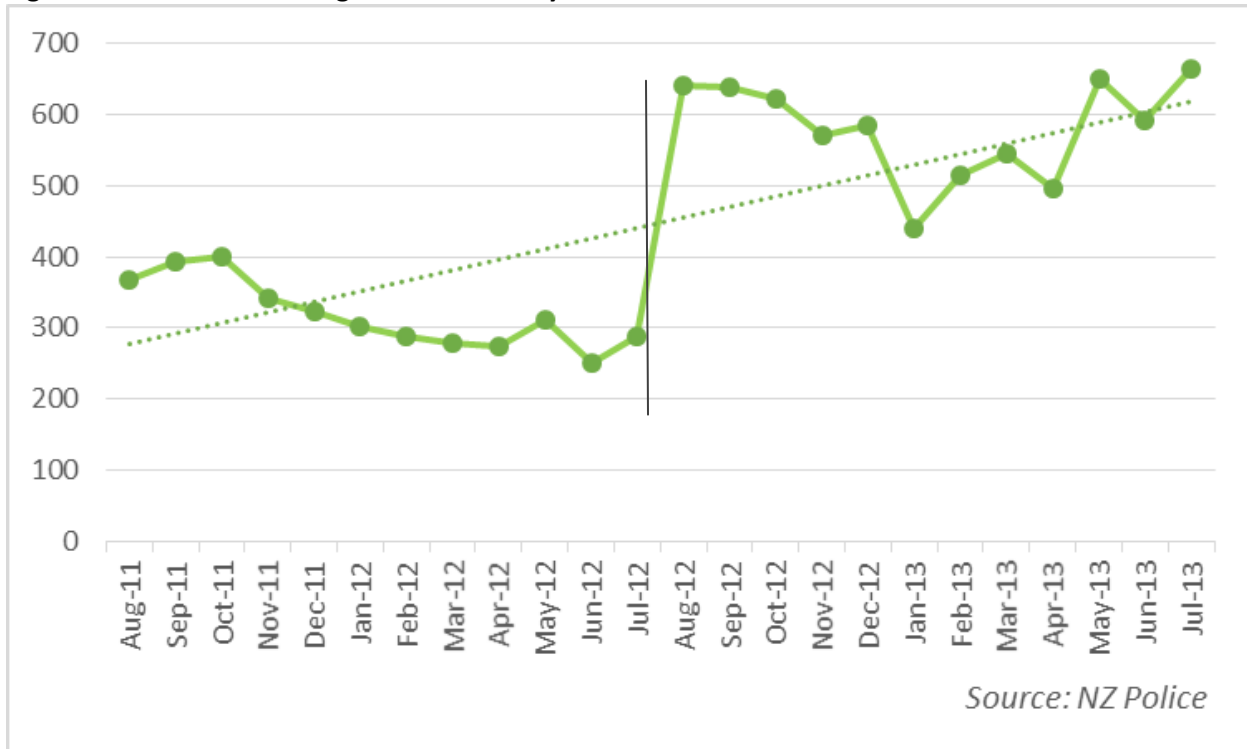
Interviews with Police personnel suggested that the simplification of the system has meant that non-CVIU Police are now more disposed to stopping vehicles:

**“Frontline staff used to avoid RUC like the plague, even specialists like highway patrol... In general Police did not know how to detect RUC offences. It is much simpler for them now.”**  
 - senior Police officer

This is a possible reason for the significant increase in distance-based offences detected by Police following the changes. Figure 21 illustrates the dramatic increase in infringements issued by non-CVIU Police staff from August 2012, during which time the number of infringements issued effectively

doubled over the following eleven month period. It is difficult to isolate an exact reason for this increase, but discussions with senior Police suggest that the change to a flat fee for distance overrun has made it easier for non-CVIU officers to issue infringements.

**Figure 21: Number of infringements issued by non-CVIU Police staff**



Overall, Police think that the infringement system is working well, whereby most of the common offences are now dealt with by issuing infringements. Several offences previously required prosecution through a District Court. Now Police are able to issue infringement notices, which allows for a significant time saving as they no longer have to invest time in collecting and collating evidence.

However, both senior and field CVIU staff voiced the desire for further chargeable offences to be made into infringements. For instance, not obtaining an additional licence is currently a chargeable offence requiring prosecution. The cost of the additional licence is not a huge expense, nor is the court issued fine. As a result, Police often issue warnings to operators instead of the requisite court process, as the administrative time for them, the court and the operator is not proportionate to the offence.

**5.4.2 Police understanding of the RUC system has continued to improve**

Overall CVIU field staff and senior Police staff believe that the Police force has developed a strong understanding of the new RUC system. This has been confirmed by the industry as a vast majority of operators have found Police to be fair and well informed. While there were several reported instances of Police inconsistency in RUC enforcement during the first cycle of evaluation, this issue appears to have been resolved; none of the transport operators we spoke to reported any specific instances of inconsistencies in policing efforts.

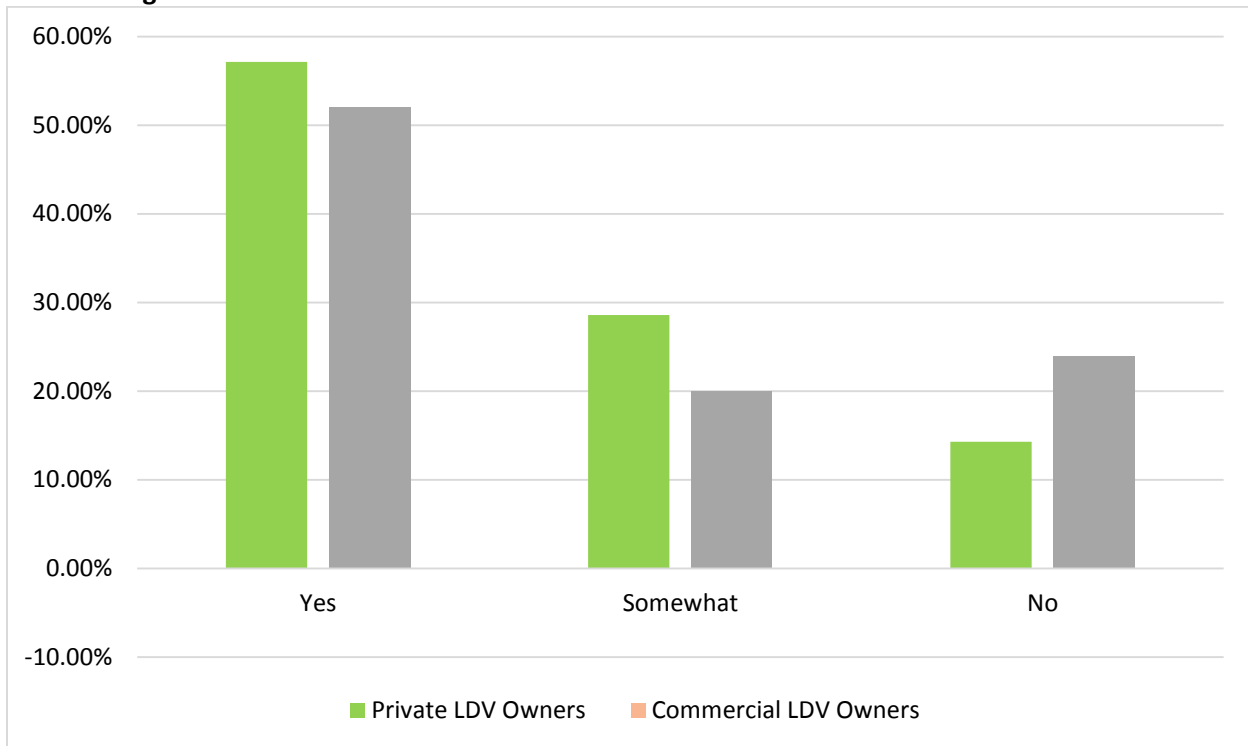
Overall, the Police reported that their internal training is more than adequate in continuing to educate staff. Currently, four training sessions are provided per annum, however this training is only provided to the road policing staff. Supervisors are also mandated to attend these trainings, who then in turn, relay RUC-related information back to the teams they supervise. Local CVIU offices also run their own RUC training with staff, to deal with any issues or gaps in knowledge that are apparent. Police have also recently issued a new electronic Road Policing Guide, which details a substantial amount of RUC information that can be accessed remotely and electronically so that Police can have information on hand, if required.

#### **5.4.3 The current fine regime for LDV RUC overrun is not perceived to be a strong deterrent**

Police staff reported that distance overrun was common amongst LDVs. This is confirmed by analysis of NZTA data, which shows that over 20 percent of light passenger cars/vans which passed their WoF/CoF inspection were overrun from April 2013 to March 2014, and around 17 percent of light goods vans/trucks/utility vehicles were overrun during this period (see Section 4.1.2). There is the view amongst Police that a \$200 infringement fine does not adequately deter LDV owners from overrunning their RUC distance licence.

Results of a survey conducted with private and commercial LDV owners give some weight to this Police perception. While a majority of both private and commercial respondents (57 percent and 52 percent respectively) believed that the \$200 fine was a deterrent to incurring overrun, there is still a substantial proportion of both types of LDV owners that viewed the \$200 fine as somewhat of a deterrence (29 percent of private LDV owners and 20 percent of commercial owners) or no deterrence (14 percent of private owners and 24 percent of commercial).

**Figure 22: Survey respondents’ perceptions of the extent that the \$200 fine is a deterrent to overrunning RUC distance licence**



One senior Police informant suggested that a possible solution to the perceived current lack of deterrence would be the implementation of a scaled infringement system based on a scale or degree of overrun. For example, he suggested that an overrun of 0-5,000km results in a \$200 fine; 5,000-10,000km a \$400 fine and; 10,000km or above a \$500 fine. By implementing a scaled infringement system such as this, the informant believed that a greater deterrent for overrun would be achieved for those drivers aware of the fine to begin with.

Perceptions of whether or not the fine is a deterrent may be linked to a lack of knowledge about the fine, as discussed in Section 4.1.2 and displayed in Table 1, where private LDV owners are identified to have a particularly low awareness of the fine. For this group, any change in the fine amount would have little effect on the perception of it as a deterrent. However, the increase in the number of fines issued by Police for distance licence overrun, as outlined in Section 5.4.1, will likely be acting as a passive deterrent for other drivers regardless of the fine amount, as greater awareness of the extent of fining proliferates among LDV owners.

**5.4.4 The coverage of RUC enforcement is inconsistent, particularly in rural areas**

Both Police and industry reported that there has been an inconsistent coverage of policing of the RUC system on the roads. This perception is particularly strong amongst the transport industry, with a number of case study operators stating that they do not believe there are enough CVIU officers on the road. One of New Zealand’s largest freight operators reported that for the month of April their trucks were only stopped by CVIU officers once every 100,000km of distance travelled. There is concern from



the industry that non-compliant operators continue to be non-compliant in certain areas, predominantly rural, as the threat of being detected by Police is very low. This issue is not new, and has not occurred as a result of the changes to the RUC system, but was reported to be an ongoing issue which is acting as a barrier to greater RUC compliance.

Perceptions from CVIU staff and the industry suggest that inconsistent Police coverage may be due to the small number of CVIU officers on the road. Currently there are 111 CVIU officers in New Zealand. One CVIU officer stated that his staff “could be doubled and [they] would still not have enough.” Police reported that their average rate of vehicle checks were once every 44,000km.<sup>22</sup> Senior Police staff also reported that their coverage had some inconsistencies, but attributed this as a by-product of focusing their resources on specific areas of higher volume road use, such as state highways, to maximise the impact of their force.

Part of the problem for inconsistent coverage could possibly be attributed to the lack of weigh-stations in rural areas. Police noted that without enough weigh stations it is difficult for CVIU staff to ensure the compliance of all vehicles in that region, and particularly those running on 50MAX and HPMV permits.

#### **5.4.5 RUC is not perceived as a high priority by Police**

There is a perception amongst Police that RUC is not a high priority for enforcement. The focus of the Road Policing Programme is on “preventing harm, saving lives, targeting repeat and high-risk offenders, and working with Police’s partners to protect the people in our communities from death and serious injury”.<sup>23</sup> Police aim to do this by reducing behavioural and vehicle risk on the roads by prioritising factors such as speeding, drunk driving, and vehicle faults.

Police do not view the non-payment of RUC as a safety concern, and as a result, it is not a strong focus for them. Police believe that committing more time to the enforcement of RUC would mean that the enforcement of other activities would decrease. The checking of RUC is primarily a by-product of safety check stops, and as such Police are not inclined to stop a vehicle purely on the basis of checking its RUC. Interviews with senior Police staff found that they would not be motivated to run an operation focused solely on the detection of unpaid RUC.

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<sup>22</sup> NZTA Research Report 500, *Strategic electronic monitoring and compliance of heavy commercial vehicles in the upper North Island*, October 2012.

<sup>23</sup> New Zealand Police, *Road Policing Strategic Plan 2011-2015*, 2011.

## 6 CONCLUSIONS AND RECOMMENDATIONS

This section sets out a summary of key findings and conclusions regarding the impact of the new RUC system on transport operators and government, and recommendations to enhance the on-going delivery of the new RUC system.

### 6.1 Conclusions

The evaluation addressed eight key focus areas related to the impacts of the new RUC system on both transport operators and government agencies. The following tables set out our conclusions related to each of these evaluation focus areas and provide a summary of the key evidence on which the conclusions are based.

#### 6.1.1 Impacts of the new RUC system on transport operators

Transport operators have largely been receptive of the new system. In the 22 months that the changes to the RUC system have been in place, key impacts of the changes on transport operators have included substantial efficiency gains through the uptake of HPMV permits and electronic RUC systems. Smaller efficiency gains are observable at the system level, including loading their vehicles to higher weights and purchasing RUC in larger increments. The application of the RUC system to the LDV sector remains problematic, with distance overrun common amongst this group. Further details of these conclusions are provided in Table 10.

**Table 10: Conclusion related to the impact of the changes to the RUC system on transport operators**

Evaluation theme	Conclusions	Evidence
Understanding of the RUC system by LDV owners	Inadequate education resources leave many LDV owners with little knowledge of the wider RUC system beyond purchasing RUC for their vehicle.	<ul style="list-style-type: none"> <li>• Many survey respondents identified having learned of their RUC obligations via word of mouth rather than from an NZTA resource (commercial LDV users 43%, private LDV owners 60%)</li> <li>• Only 13% of private LDV users and no commercial LDV users had received RUC education from an NZTA resource.</li> <li>• Supplementary comments from LDV users suggested they knew enough about the system to be able to purchase RUC, but lacked knowledge of the broader rationale for the system.</li> </ul>
Compliance with the RUC system by LDV owners	Distance overrun is a common form of non-compliance among LDV owners	<ul style="list-style-type: none"> <li>• Over 20% of light passenger cars/vans were overrun from April 2013 to March 2014 at their WoF or CoF inspection, and around 17% of light goods vans/trucks/utility vehicles were overrun during this period.</li> <li>• Of the survey respondents, 24 percent of LDV</li> </ul>

Evaluation theme	Conclusions	Evidence
		owners for private use admitted overrunning their distance licences and 20 percent of commercial LDV respondents allowed their distance licence to overrun. <ul style="list-style-type: none"> <li>The Napier/Hastings CVIU ran a recent operation in which they stopped courier drivers, which returned 70% overrun distance licences.</li> </ul>
Effectiveness of RUC processes for overweight vehicles	HPMV permits are viewed favourably by the industry for the productivity benefits they provide.	<ul style="list-style-type: none"> <li>The NZTA has identified the potential for up to 20% productivity gains for operators on 50MAX permits.</li> <li>The percentage of HPMV distance travelled as a proportion of total distance travelled by heavy standard trucks has increased from 12 percent in Jul-Sep 2012 to 20 percent in Apr-Jun 2013</li> </ul>
	Operators perceive the requirement to pay RUC up to the permit weight rather than the load weight as a barrier to uptake of HPMVs.	<ul style="list-style-type: none"> <li>Some operators are only purchasing up to their load weight, and one operator did this in the hope of initiating legal proceedings to address this requirement in a formal legal setting.</li> </ul>
Shifts in vehicle loading and purchasing patterns	At a systemic level, operators are now loading their vehicles to a higher capacity than before.	<ul style="list-style-type: none"> <li>There has been a slight increase in average vehicle load weight, most significantly in nine axle full-trailer combinations (+1.09 tonnes) and seven axle articulating trailer combinations (+1.27 tonnes).</li> </ul>
	Demand for trailers has shifted to enable uptake of HPMV and 50MAX permits for greater efficiency with vehicle loading for operators.	<ul style="list-style-type: none"> <li>Survey results indicated a strong trend in increased demand for 5 axle full trailers, with one manufacturer reporting that these comprise 90 percent of their sales.</li> <li>There is a corresponding decrease in 4 axle trailers.</li> <li>Data presenting the first time registration of heavy trailers confirms a clear decrease in four axle trailers and a corresponding increase in fixe axle trailers.</li> </ul>
Cost savings for transport operators	Transport operators are purchasing RUC in larger increments, suggesting a small reduction in administration time	<ul style="list-style-type: none"> <li>The average distance purchased per transaction has increased by 7.9 percent when comparing the 12 month period before and 12 month period after the August 2012 changes</li> </ul>
Uptake of eRUC systems	Uptake of eRUC systems continues, particularly among larger fleets whose operations involve off-road	<ul style="list-style-type: none"> <li>From the month of July 2013 eRUC sales as a percentage of total sales increased from 13.9 percent to 17.6 percent in June of 2014</li> </ul>

Evaluation theme	Conclusions	Evidence
	travel.	
	The benefits of eRUC systems include greater fleet management ability and reduced administrative time.	<ul style="list-style-type: none"> <li>• Operators reported that the amount of time spent on administering RUC had decreased significantly as a result of taking on eRUC systems.</li> <li>• eRUC systems have also removed the possibility of human error, both in recording and purchasing of RUC.</li> <li>• The eRUC systems allow drivers to switch the system to a “set and forget” automated purchase.</li> </ul>
	Cost is the primary barrier preventing wider uptake amongst transport operators.	<ul style="list-style-type: none"> <li>• Currently an eRUC system costs between \$800 and \$900 per unit with an additional \$40 monthly administration fee.</li> </ul>

### 6.1.2 Impacts of the new RUC system on government

The Ministry of Transport outlined numerous goals in amending the RUC Act. The evaluation findings suggest that the objective of a revenue neutral outcome of the changes appears to have been achieved, and that weight-based evasion has been largely eliminated.

**Table 11: Conclusions related to the impact of the RUC changes on government**

Evaluation criteria	Conclusions	Evidence
Revenue neutrality	Analysis of RUC revenue for light and heavy vehicles suggests that the changes to the RUC system have been broadly revenue neutral.	<ul style="list-style-type: none"> <li>• RUC revenue per kilometre has changed by +0.4 percent for light vehicles and -0.3 percent for heavy vehicles.</li> <li>• The overall change is -4.4 percent, primarily due to a change in the mix of light and heavy vehicles resulting in a larger proportion of RUC being light vehicles</li> <li>• The relatively small change in light and heavy rates indicates that the August 2012 RUC changes have been broadly revenue neutral.</li> </ul>
Reduced evasion	Weight based evasion has largely been eliminated.	<ul style="list-style-type: none"> <li>• Police data shows that the percent of RUC evaded has decreased from 4 percent in 2012 to 1.2 percent in 2013 and remained at 1.2 percent in 2014.</li> </ul>
	Other forms of evasion are perceived to continue, such as hubodometer and	<ul style="list-style-type: none"> <li>• A CVIU officer estimated that 1-2 percent of vehicles are evading with hubodometer tampering.</li> </ul>

Evaluation criteria	Conclusions	Evidence
	odometer tampering.	<ul style="list-style-type: none"> <li>• Odometer switches are hard to detect, however anecdotal evidence suggests the practice is occurring.</li> </ul>
Reduced administrative complexity for NZTA	The new binding assessment system has created efficiency gains in NZTA RUC administration	<ul style="list-style-type: none"> <li>• The binding assessment process means NZTA staff no longer need to negotiate with operators to sign a liability agreement.</li> <li>• Monthly invoiced debt is approximately double what it was under the previous RUC system.</li> </ul>
	Efficiency gains are hampered by the need to follow up on unpaid debt.	<ul style="list-style-type: none"> <li>• Data from NZTA shows that an average of only 43.6% of invoices are paid after receiving the initial invoice.</li> <li>• Administrative resource required in following up unpaid debt.</li> </ul>
	The efficiency of NZTA processes could be improved through moving to online electronic forms	<ul style="list-style-type: none"> <li>• NZTA takes five to 15 minutes to process most applications, however some transport operators report waiting weeks for a response.</li> <li>• An online application form for 50MAX permits decreased processing time from around 5 days to approximately 48 hours</li> <li>• There is widespread support from transport operators for moving more processes online.</li> </ul>
Simplified and efficient police enforcement of RUC	Police proceedings have increased possibly due to the simplification of the system.	<ul style="list-style-type: none"> <li>• There is a strong correlation between the August 2012 RUC changes and a substantial increase in the number of infringements that have been issued by non-CVIU officers.</li> <li>• Senior Police staff suggest that the simplification of the RUC system has made it easier for non-CVIU officers to detect RUC offences and issue proceedings.</li> </ul>
	The CVIU want more charges to be made infringements.	<ul style="list-style-type: none"> <li>• Both senior and field CVIU staff voiced the desire for further chargeable offences to be made infringements, such as the penalty for not obtaining an additional licence.</li> </ul>
	Operators feel there is inconsistent enforcement of RUC, particularly in rural areas.	<ul style="list-style-type: none"> <li>• Both Police and industry reported that there has been an inconsistent coverage of policing on the roads.</li> <li>• One of New Zealand's largest freight operators reported that for the month of April their trucks were only stopped by CVIU officers once every 100,000km of distance travelled.</li> <li>• Police reported that their average rate of vehicle</li> </ul>

Evaluation criteria	Conclusions	Evidence
		checks were once every 44,000km. <ul style="list-style-type: none"> <li>• Police focus their resources on specific areas of higher volume road use, such as state highways.</li> </ul>

## 6.2 Recommendations

Based on the findings of the second cycle of evaluation of the new RUC system, we have identified a number of recommendations relating to the on-going delivery of the new RUC system.

### **Recommendation one: review Section 12 of the RUC Act 2012**

There are several issues regarding the interpretation and application of Section 12 of the RUC Act 2012. The key area in which this is evident is the legislative requirement of HPMV permit holders to purchase RUC up to their maximum permit weight rather than their actual load weight, and the dissatisfaction this has been met with by transport operators. We recommend that the Ministry, in partnership with the NZTA, undertake a review of Section 12 of the RUC Act. A review of Section 12 of the Act will be a substantial undertaking, and will require industry consultation. It is not expected that this recommendation is a 'quick fix' but rather a long term solution to some of the outstanding issues in the RUC system.

### **Recommendation two: consider adding an additional weight band for LDVs**

Many LDV users perceive the system to be unfair due to small diesel cars paying the same RUC rate as larger light diesel vehicles. Adding an additional weight band for LDVs, such as under 2 tonnes, would help to mitigate this. While much of the perception of inequity among the LDV user group is likely due to a lack of understanding of the RUC system and the rationale behind each vehicle type's RUC rate, the difference in revenue is likely to be insignificant but would improve LDV users' perceptions of the RUC system. Any changes to do with creating vehicle types will need to align with the legislative purpose of the Act (i.e. that charges on RUC vehicles for their use of the roads that are in proportion to the costs that the vehicles generate) and should not undermine the simplicity of the RUC system.

### **Recommendation three: better target education at LDV owners to inform them of their RUC obligations**

The evaluation identified a gap in the provision of specific information about RUC for LDV owners, leading to a lack of understanding of the system. This may be contributing to the high rates of distance overrun amongst LDVs. We recommend developing a more user-friendly website resource, as well as a hard copy pamphlet or brochure which can be made available at petrol stations, RUC agents, vehicle dealerships, and with vehicle change of ownership forms. A brochure format would allow a brief overview and key points, so as to not 'bog down' readers, however it should also provide a link to additional resources where further more in depth information is available, such as the NZTA website.

**Recommendation four: move some NZTA RUC processes from a manual to an online format**

Moving more processes to an online format would result in efficiency gains for both NZTA and the transport sector. Processes that should be targeted initially include applications to change RUC licence type, overweight and HPMV permits, and RUC off road refunds. The recent introduction of an online form for 50MAX permit applications will be useful to test the possibility of moving to an online format for other NZTA application forms. We encourage the Ministry to pursue consideration of shifting to online services alongside consideration of alternative payment schemes, which is underway at present.

**Recommendation five: work with Police to identify which offences they would like to become infringements, rather than court processes**

Police have succeeded in using the new simplified RUC system to increase the number of infringements issued. This could be enhanced if a number of other proceedings which are currently chargeable offences were made infringements. At present, police tend to issue a warning for some chargeable offences instead of proceeding with the requisite court process due to the administrative resource required for this, particularly when considering the seriousness of the offence in proportion to the penalty and process. We recommend working with Police to review the chargeable offences and identify those that could become infringements instead based on the established principles as to what offences can and cannot legally be made infringements.

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## APPENDIX ONE: EVALUATION FRAMEWORK AND QUESTIONS

The RUC evaluation framework identifies a number of questions to be explored during the evaluation, categorised by subject area (e.g., vehicle types, efficiencies, impact of new RUC system). The evaluation questions are focused on an assessment of progress towards the expected outcomes of the new RUC system. Implicit within this is a comparison of how the modernised RUC system operates in comparison to the previous system. The questions have been adapted from those in the evaluation framework to ensure that they are relevant for evaluation Cycle 2 (i.e., impacts of the new RUC system at the system level), and are outlined in table 10 below.

**Table 12: Evaluation questions**

Subject area	Expected outcome(s) of new RUC system	Evaluation questions	Methods and data sources
Light Diesel Vehicles (LDVs)	<p><b>Increased understanding of the RUC system</b></p> <p><b>Reduced evasion</b></p>	<ul style="list-style-type: none"> <li>• To what extent do LDV owners understand the RUC system?</li> <li>• To what extent are LDV owners compliant with their RUC obligations, and why?</li> <li>• What improvements could be made to enhance the RUC system in relation to LDVs?</li> </ul>	<ul style="list-style-type: none"> <li>• Key informant interviews:                             <ul style="list-style-type: none"> <li>○ AA</li> <li>○ Police.</li> </ul> </li> <li>• Focus groups/in-depth interviews with LDV owners (including private vehicle owners and owners of light commercial vehicles).</li> <li>• Survey of LDV owners.</li> <li>• Comparison of RUC revenue for LDVs and the expected revenue based on vehicle numbers</li> <li>• Police data on penalties issued to LDVs.</li> </ul>
Overweight vehicles	<p><b>Improved efficiency in vehicle use</b></p>	<ul style="list-style-type: none"> <li>• How does the RUC system interact with the overweight permit system?</li> <li>• To what extent does RUC act as a barrier or incentive to uptake of HPMV permits?</li> <li>• What impact has use of H permits had on freight efficiency?</li> </ul>	<ul style="list-style-type: none"> <li>• Analysis of NZTA data on:                             <ul style="list-style-type: none"> <li>○ number of HPMV permits issued</li> <li>○ RUC sales trends for H type vehicles.</li> </ul> </li> <li>• Analysis of Weight-in-Motion data.</li> <li>• Case studies with heavy vehicle operators.</li> <li>• Key informant interviews:                             <ul style="list-style-type: none"> <li>○ Heavy Haulage Association</li> <li>○ Road Transport</li> </ul> </li> </ul>

Subject area	Expected outcome(s) of new RUC system	Evaluation questions	Methods and data sources
			Forum.
Cost savings for operators	<b>Improved efficiency in vehicle use</b>	<ul style="list-style-type: none"> <li>• What impact have the RUC changes had on:                             <ul style="list-style-type: none"> <li>○ vehicle use patterns</li> <li>○ vehicle loading patterns</li> <li>○ types of vehicles ordered</li> </ul> </li> <li>• What impact have any changes in vehicle use, loading and ordering patterns had on freight efficiency?</li> </ul>	<ul style="list-style-type: none"> <li>• Survey of vehicle dealers and trailer manufacturers to identify what is driving choice, to for trends in types of new vehicles being ordered.</li> <li>• Analysis of Weigh-in-Motion data.</li> <li>• Analysis of new vehicle registration data.</li> <li>• Case studies with a range of transport operators.</li> </ul>
	<b>Reduced compliance costs for operators</b>	<ul style="list-style-type: none"> <li>• To what extent have there been compliance cost savings for operators at the system level?</li> </ul>	<ul style="list-style-type: none"> <li>• Analysis of NZTA transaction data (trends in the number of RUC transactions by type, volume and purchase method).</li> </ul>
RUC revenue	<b>Revenue neutrality</b>	<ul style="list-style-type: none"> <li>• To what extent is the new RUC system maintaining the level of RUC revenue that would have been generated by the previous system?</li> <li>• What impacts have changes in vehicle use patterns had, or are likely to have, on RUC revenue?</li> <li>• To what extent have changes of vehicle type and overlapping licences had on RUC revenue?</li> </ul>	<ul style="list-style-type: none"> <li>• Analysis of gross and net RUC sales by licence type.</li> <li>• Comparison of Weigh-in-Motion data trends with RUC revenue trends.</li> <li>• Comparison of VKT across licence type with RUC revenue trends.</li> </ul>

Subject area	Expected outcome(s) of new RUC system	Evaluation questions	Methods and data sources
	<b>Reduced evasion</b>	<ul style="list-style-type: none"> <li>• What on-going impacts have the RUC changes had on the level of evasion?</li> </ul>	<ul style="list-style-type: none"> <li>• Police Heavy Vehicle Compliance Survey</li> <li>• Police data on penalties issued.</li> <li>• Case studies with a range of transport operators.</li> </ul>
eRUC	<b>Enhanced RUC system through the use of electronic management systems</b>	<ul style="list-style-type: none"> <li>• What are the benefits to operators and the government through use of electronic RUC systems?</li> <li>• To what extent have operators taken up electronic RUC systems?</li> <li>• What types of operators have taken up electronic RUC systems (e.g., company and fleet size) and why?</li> <li>• What barriers exist for operators to move to an eRUC system (e.g., cost)?</li> <li>• What can be done to enhance and increase use of electronic management systems?</li> </ul>	<ul style="list-style-type: none"> <li>• Key informant interviews:                             <ul style="list-style-type: none"> <li>○ MoT</li> <li>○ NZTA</li> <li>○ eRUC system providers</li> </ul> </li> <li>• Analysis of electronic system providers uptake data</li> <li>• Analysis of NZTA transaction data</li> <li>• Case studies/in-depth interviews:                             <ul style="list-style-type: none"> <li>○ operators who currently use eRUC systems</li> <li>○ operators who do not use eRUC systems</li> </ul> </li> </ul>
Efficiencies in NZTA processes	<b>Reduced administrative complexity for government</b>	<ul style="list-style-type: none"> <li>• How could NZTA reduce inefficiencies in RUC administration?</li> <li>• What further technological efficiencies have been achieved for NZTA and electronic system providers (e.g., off-road refund process via electronic vs manual submissions)?</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Key informant interviews:                             <ul style="list-style-type: none"> <li>○ NZTA administration staff</li> </ul> </li> <li>• Review of NZTA RUC information collection and capture methods.</li> </ul>
	<b>Improved effectiveness and efficiency of recovery of unpaid RUC</b>	<ul style="list-style-type: none"> <li>• How effective are the new assessment processes in collecting unpaid RUC?</li> </ul>	<ul style="list-style-type: none"> <li>• Key informant interviews:                             <ul style="list-style-type: none"> <li>○ NZTA personnel</li> </ul> </li> <li>• Analysis of data on assessments issued and</li> </ul>

Subject area	Expected outcome(s) of new RUC system	Evaluation questions	Methods and data sources
			debt recovery rates
On-going exploration of impacts of new system	<b>Simplified enforcement of RUC</b>	<ul style="list-style-type: none"> <li>• What on-going impacts have the new RUC system had on Police enforcement?</li> </ul>	<ul style="list-style-type: none"> <li>• Key informant interviews:                             <ul style="list-style-type: none"> <li>○ NZ Police personnel</li> <li>○ CVIU officers</li> </ul> </li> </ul>
	<b>Increased understanding of the RUC system</b>	<ul style="list-style-type: none"> <li>• Are there any areas of confusion or areas that are not well understood?</li> </ul>	<ul style="list-style-type: none"> <li>• Case studies with a range of transport operators.</li> </ul>

## APPENDIX TWO: CASE STUDY INTERVIEW GUIDE

1. Background information	
1a	What is the informant's role? What is the relevance of this role to RUC (eg do they purchase RUC, oversee vehicle fleets, make vehicle purchases)?
1b	Find out some background information about the company (may need to make distinctions between the company as the case study unit and any parent company): <ul style="list-style-type: none"> <li>• how many employees</li> <li>• how long has it been in operation</li> <li>• what type of load(s) do they carry</li> <li>• where do they provide transport services (i.e. local carrier, regionally, nation-wide)</li> <li>• do they use mainly urban or rural roads (or both)</li> <li>• company ownership model</li> </ul>
1c	How many vehicles (or fleets) does the company own or use?
1d	What type of vehicle/s does the company own or use:
1e	How is RUC managed? <ul style="list-style-type: none"> <li>• What is the approximate FTE allocated to RUC?</li> <li>• How do they purchase RUC (online, agent, DirectConnect, eRUC provider, etc.)?</li> <li>• Describe a typical purchase (eg, how many kilometres and how often make purchase).</li> <li>• How many RUC transactions (eg, per month)?</li> </ul>
1f	Are they a member of an industry association/group (which)?
2. Views on the August 2012 changes to the RUC system	
2a	The new RUC system has been in place since August 2012 (18 months). Overall, what aspect of the new system are working well? Are there any areas that are in need of improvement?
2b	Is the new RUC system easier to understand than the previous system? Why/why not?
2c	Are there any of the RUC changes that are confusing or unclear?
3. Changes to processes made as a result of the August 2012 changes to the RUC system	
3a	<ul style="list-style-type: none"> <li>• Did you make any adjustments to your RUC administration processes as a result of the change? If so, what were these?</li> </ul>

4. Permits (HPMV and 50 MAX)	
4a	Do you use the HPMV and/or 50MAX permit system? If yes, how do you find the system?
4b	What do you see as the advantages of HPMV and 50 MAX permits?
4c	How does the RUC system interact with the permit system? Has the RUC system created any barriers to the uptake in HPMV or 50 MAX permits?
5. Heavy vehicles (i.e. those operating up to VDAM tolerance <u>without</u> a permit)	
5a	Do you operate any vehicles at the VDAM tolerance (or did you prior to the RUC changes)?
5b	Do you understand your obligations relating to RUC for vehicles operating at the VDAM tolerance?
5c	Have you made any changes in the way you load vehicles at the 44 – 45.5 tonne weight bracket?
6. Evasion	
6a	The changes to the RUC system are intended to eliminate weight-based evasion. In your view has this been effective?
6b	Has your perception of the risks associated with RUC evasion changed? In what ways?
6c	Are you aware of any ways that dishonest operators could evade RUC (i.e. any rumours in the sector)?
6d	Overall do you believe that the RUC system is more credible? Are there fewer opportunities for evasion?
7. Recovery of unpaid RUC	
7a	Have you received any RUC invoices (ie a binding assessment) from NZTA since the RUC changes were implemented in August 2012? If yes, what for (e.g. amount owing due to hubo change, etc)?
7b	Did you agree with the reason for the invoice, and the amount?
7c	Have you ever questioned or disputed the invoice? If so, how did you find the process (ie was it reasonable, fair?)
8. Electronic RUC	

8a	<p>Do you use an electronic management system (EMS)?</p> <p>If yes:</p> <ul style="list-style-type: none"> <li>• ERoad or International Telematics?</li> <li>• How long have you used it?</li> <li>• How many vehicles are fitted with an EDR?</li> </ul> <p>If no:</p> <ul style="list-style-type: none"> <li>• Why not?</li> <li>• Do you intend to move to an EMS at some stage?</li> </ul>
8b	<p>What do you see as the main advantages of an EMS?</p> <p>To what extent is (or was) eRUC a factor in your decision to get an EMS (ie, is it the main driver or are there other key incentives, such as safety, environmental)?</p> <p>What other factors might incentivise EMSs?</p>
8c	<p>What are the main barriers to uptaking EMSs?</p>
8d	<p>Do the currently available electronic management systems meet transport operator needs? Why/why not?</p>
<b>9. Impact on efficiency, vehicle purchases and/or vehicle use</b>	
9a	<p>Have you made any changes to the way you load or use your vehicles since the RUC changes?</p>
9b	<p>What are the main drivers behind vehicle loading and use decisions (e.g. RUC, safety, customer demands)?</p>
9c	<p>Are there any barriers to using and loading your vehicles more efficiently?</p>
9d	<p>Have you purchased any new vehicles since August 2012? What vehicles did you purchase? Why?</p>
9e	<p>To what extent did you consider RUC when making your vehicle purchasing decisions?</p>
<b>10. Enforcement of RUC</b>	
10a	<p>In your view, how well are Police enforcing the RUC system?</p>
10b	<p>Are there any inconsistencies or things that are not clear in Police enforcement of the system?</p>
<b>11. Suggested changes to the system</b>	
11a	<p>If you were given the opportunity to change something about the RUC system, what modifications would you make? Why?</p>

12. Concluding comments	
12a	Are there any other important points or issues related to Road User Charges that we have not discussed yet?



## APPENDIX THREE: PRIVATE LIGHT DIESEL VEHICLE USER SURVEY

### Section A: Screening questions

Good morning/afternoon/evening. My name is XXXXX from Allen and Clarke, which is an independent research and evaluation company undertaking an evaluation for the Ministry of Transport on the road user charges system. We're conducting a short survey of private light diesel vehicle users, and I am interested to hear about your experiences and understanding of the road user charges system.

**Can I ask you a few questions?** It should take no more than 5 minutes.

#### 1. Do you own this diesel vehicle?

Yes.....  (Move to Q4)  
 No.....  (Move to Q3)

#### 2. Do you have anything to do with the road user charges for this vehicle as a user?

Yes.....   
 No.....  (Thank & close)

### Section B: Your experience of Road User Charges

#### 3. What triggers you to purchase RUC?

Looking at the windscreen.....   
 Looking at the odometer.....   
 Receiving a reminder letter from NZTA.....   
 Upon getting a WOF.....   
 By keeping tabs on distance travelled.....   
 Upon invoice from NZTA.....   
 If anticipating a long journey.....   
 Other [SPECIFY].....

#### 4. At what point do you purchase RUC?

With approximately less than 50km remaining.....   
 With approximately 51 – 100km remaining.....   
 With approximately 101-200 km remaining.....   
 With approximately 201 – 300km remaining.....   
 With approximately 301 – 400km remaining.....   
 With approximately 401 – 500 km remaining.....   
 With approximately 501 - 1000km remaining.....   
 With over 1000km remaining.....   
 Once expired .....   
 Do not purchase RUC .....

**5. The fine for overrunning a RUC distance licence is \$200. Were you aware of this?**

Yes.....

No.....

**6. Does this fine deter you at all from not paying RUC on time?**

Clear yes.....

Grey 'somewhat'.....

Clear no.....

No answer.....

*For Questions 7 and 8 populate the table below*

**7. How did you find out about your RUC obligations?**
**8. How would you rate the quality of this information?**

*[Go through each source and the quality for each if applicable to participant]*

Source of education	Quality of education	Comments
Vehicle dealer	Good – Satisfactory – Poor	
Previous owner	Good – Satisfactory – Poor	
NZTA website	Good – Satisfactory – Poor	
Word of mouth	Good – Satisfactory – Poor	
NZTA RUC Agent	Good – Satisfactory – Poor	
Other [SPECIFY]	Good – Satisfactory – Poor	

**9. Do you have any suggestions to improve the education of RUC for light diesel vehicle owners?**
**10. Overall, how do you rate your understanding of your RUC obligations?**

Very poor.....

Poor.....

Sufficient.....

Good.....

Very good.....

**11. Are there any parts of the RUC system that you do not understand?**

**12. Do you have any suggestions to improve the RUC system for light diesel vehicle owners?**

That's the end of the survey. Thank you very much.

If you have any queries regarding the survey you can contact Jessie McMath at Allen and Clarke on 890 7308.

Thank you very much for your time and have a good morning/afternoon/evening.

**Record:**

Interviewer name:

Date:

Time:

Day of week:

Location of interview:

Type of light diesel vehicle being driven:

## APPENDIX FOUR: COMMERCIAL LIGHT DIESEL VEHICLE USER SURVEY

### Section A: Screening questions

Good morning/afternoon/evening. My name is XXXXX from Allen and Clarke, which is an independent research and evaluation company undertaking an evaluation for the Ministry of Transport on the road user charges system. We're conducting a short survey of commercial light diesel vehicle users, and I am interested to hear about your experiences and understanding of the road user charges system.

**Can I ask you a few questions?** It should take no more than 5 minutes.

**1. Do you use light diesel vehicle(s) in your business/trade (i.e. less than 3.5 tonnes)?**

Yes.....  (Thank & close)  
 No.....  (Thank & close)

**2. Do you own this diesel vehicle?**

Yes.....  (Move to Q4)  
 No.....  (Move to Q3)

**3. Do you have anything to do with the road user charges for this vehicle as a user?**

Yes.....   
 No.....

(If the response is 'no', thank and ask for someone who does administer the RUC for the vehicle, and close if not available)

### Section B: Background

**4. What type of business/trade do you operate?**

Plumber.....   
 Electrician.....   
 Furniture removal.....   
 Builder.....   
 Courier.....   
 Other [SPECIFY].....

**5. What type(s) of light diesel vehicles do you drive for the purpose of your business/trade?**

Car.....   
 Ute.....   
 Van.....   
 Small truck (2 axles).....   
 Other [SPECIFY].....

**6. How long have you been driving a light diesel vehicle for the purpose of your business/trade?**

Since before August 2012.....	<input type="checkbox"/>
From August 2012 onwards.....	<input type="checkbox"/>

**7. What is your light diesel vehicle primarily used for in the course of your business?**

Transporting goods.....	<input type="checkbox"/>
Transport to the location of work.....	<input type="checkbox"/>
Other [SPECIFY].....	<input type="checkbox"/>

**8. Approximately how many kilometres would you travel per year in a light diesel vehicle for the purpose of your business?**

Less than 500km.....	<input type="checkbox"/>
501 – 1000km.....	<input type="checkbox"/>
1001 – 2000km.....	<input type="checkbox"/>
2001 – 3000km.....	<input type="checkbox"/>
3001 – 4000km.....	<input type="checkbox"/>
4001 – 5000km.....	<input type="checkbox"/>
5001 – 7500km.....	<input type="checkbox"/>
7501 – 10000km.....	<input type="checkbox"/>
10001 – 15000km.....	<input type="checkbox"/>
15001 – 20000km.....	<input type="checkbox"/>
More than 20000km.....	<input type="checkbox"/>

**Section C: Your experience of Road User Charges**
**9. What triggers you to purchase RUC?**

Looking at the windscreen.....	<input type="checkbox"/>
Looking at the odometer.....	<input type="checkbox"/>
Receiving a reminder letter from NZTA.....	<input type="checkbox"/>
Upon getting a WOF.....	<input type="checkbox"/>
By keeping tabs on distance travelled.....	<input type="checkbox"/>
Upon invoice from NZTA.....	<input type="checkbox"/>
Other [SPECIFY].....	<input type="checkbox"/>

**10. At what point do you purchase RUC?**

With approximately less than 50km remaining.....	<input type="checkbox"/>
With approximately 51 – 100km remaining.....	<input type="checkbox"/>
With approximately 101-200 km remaining.....	<input type="checkbox"/>
With approximately 201 – 300km remaining.....	<input type="checkbox"/>
With approximately 301 – 400km remaining.....	<input type="checkbox"/>
With approximately 401 – 500 km remaining.....	<input type="checkbox"/>
With approximately 501 - 1000km remaining.....	<input type="checkbox"/>
With over 1000km remaining.....	<input type="checkbox"/>
Once expired .....	<input type="checkbox"/>
Do not purchase RUC .....	<input type="checkbox"/>

**11. Approximately how often do you purchase RUC?**

Daily.....	<input type="checkbox"/>
Twice weekly.....	<input type="checkbox"/>
Once weekly.....	<input type="checkbox"/>
Fortnightly.....	<input type="checkbox"/>
Three weekly.....	<input type="checkbox"/>
Monthly.....	<input type="checkbox"/>
Other [SPECIFY].....	<input type="checkbox"/>

**12. Approximately how much RUC would you typically purchase in each transaction?**

Less than 100km.....	<input type="checkbox"/>
101 – 200km.....	<input type="checkbox"/>
201 – 300km.....	<input type="checkbox"/>
301 – 400km.....	<input type="checkbox"/>
401 – 500km.....	<input type="checkbox"/>
501 – 1000km.....	<input type="checkbox"/>
1001 – 2000km.....	<input type="checkbox"/>
2001 – 3000km.....	<input type="checkbox"/>
3001 – 4000km.....	<input type="checkbox"/>
4001 – 5000km.....	<input type="checkbox"/>
5001 – 10000km.....	<input type="checkbox"/>
More than 10000km.....	<input type="checkbox"/>
Other [SPECIFY].....	<input type="checkbox"/>

**13. The fine for overrunning a RUC distance licence is \$200. Were you aware of this?**

Yes.....	<input type="checkbox"/>
No.....	<input type="checkbox"/>

**14. Does this fine deter you at all from not paying RUC on time?**

Clear yes.....	<input type="checkbox"/>
Grey 'somewhat'.....	<input type="checkbox"/>
Clear no.....	<input type="checkbox"/>
No answer.....	<input type="checkbox"/>

**For Questions 15 and 16 populate the table below**

**15. How did you find out about your RUC obligations?**

**16. How would you rate the quality of this information?**

***[Go through each source and the quality for each if applicable to participant]***

Source of education	Quality of education	Comments
Vehicle dealer	Good – Satisfactory – Poor	
Previous owner	Good – Satisfactory – Poor	
NZTA website	Good – Satisfactory – Poor	
Word of mouth	Good – Satisfactory – Poor	
NZTA RUC Agent	Good – Satisfactory – Poor	
Other [SPECIFY]	Good – Satisfactory – Poor	

**17. Do you have any suggestions to improve the education of RUC obligations for light diesel vehicle owners?**

**18. Overall, how do you rate your understanding of your RUC obligations?**

Very poor.....	<input type="checkbox"/>
Poor.....	<input type="checkbox"/>
Sufficient.....	<input type="checkbox"/>
Good.....	<input type="checkbox"/>
Very good.....	<input type="checkbox"/>

**19. Are there any parts of the RUC system that you do not understand?**

**20. Do you have any suggestions to improve the RUC system for light diesel vehicle owners?**

That's the end of the survey. Thank you very much.

If you have any queries regarding the survey you can contact Jessie McMath at Allen and Clarke on 890 7308.

Thank you very much for your time and have a good morning/afternoon/evening.

**Record:**

Interviewer name:

Date:

Time:

Day of week:

Location of interview:

Company:

Type of light diesel vehicle being driven:



## APPENDIX FIVE: SURVEY OF TRAILER MANUFACTURERS

<b>1. Background information</b>
<ul style="list-style-type: none"> <li>• How many employees does your company have?</li> <li>• How long the company has been in operation?</li> <li>• What types of trailers do you manufacture?</li> <li>• What industries do you manufacture trailers for?</li> <li>• How many trailers do you manufacture per year?</li> </ul>
<b>2. Purchasing trends prior to the 2012 changes</b>
<ul style="list-style-type: none"> <li>• What were the trends in trailer orders and/or sales prior to the RUC changes in 2012?                             <ul style="list-style-type: none"> <li>○ The types and sizes/axles of the trailers purchased</li> <li>○ Operator type and trailer type purchased</li> </ul> </li> </ul>
<b>3. Purchasing trends after the 2012 changes</b>
<ul style="list-style-type: none"> <li>• What were the trends in trailer orders and/or sales following the RUC changes in 2012?                             <ul style="list-style-type: none"> <li>○ Changes in specific types and sizes/number of axles of the trailers purchased</li> <li>○ Operator type and trailer type purchased</li> </ul> </li> <li>• Has there been an increase in trailer conversions following the RUC changes?                             <ul style="list-style-type: none"> <li>○ Adding/removing axles</li> </ul> </li> <li>• Which industries experienced the greatest change in trailer demand?</li> </ul>
<b>4. The effects of the RUC changes on purchasing</b>
<ul style="list-style-type: none"> <li>• To what extent did the RUC changes influence these trends?</li> <li>• To what extent has the introduction of HPMV and 50MAX permits contributed to these changes?</li> </ul>

## APPENDIX SIX: SURVEY OF TRUCK DEALERS

<b>1. Background information</b>
<ul style="list-style-type: none"> <li>• How many employees does your company have?</li> <li>• How long the company has been in operation?</li> <li>• What types of trucks to you sell?</li> <li>• How many trucks do you sell per year?</li> <li>• What industries do you sell to?</li> </ul>
<b>2. Purchasing trends prior to the 2012 changes</b>
<ul style="list-style-type: none"> <li>• What were the trends in truck orders and/or sales prior to the RUC changes in 2012?                             <ul style="list-style-type: none"> <li>○ What were the most popular types and sizes trucks purchased across various transport operators? (forestry, aggregates, general freight)</li> </ul> </li> </ul>
<b>3. Purchasing trends after the 2012 changes</b>
<ul style="list-style-type: none"> <li>• Have you seen any changes in trends of truck orders and/or sales following the RUC changes in 2012?                             <ul style="list-style-type: none"> <li>○ Changes in specific types and sizes trucks purchased – (GVM or number of axles)</li> <li>○ Any correlations between operator type and trucks purchased? (What kind of operators are purchasing what kind of trucks?)</li> </ul> </li> <li>• Which industries, if any, have experienced the greatest change in truck orders?</li> </ul>
<b>4. The effects of the RUC changes on purchasing</b>
<ul style="list-style-type: none"> <li>• To what extent do you think the RUC changes influenced these trends?</li> </ul>
<b>5. Changes in permitting</b>
<p>To what extent has the introduction of HPMV and 50MAX permits contributed to these changes?</p>

## APPENDIX SEVEN: BREAKDOWN OF CHANGES IN RUC REVENUE AND DISTANCE

Table 13 shows a detailed breakdown of changes in RUC revenue and distance for the 12 months prior to and 12 months following the August 2012 RUC changes. Revenue figures have been adjusted to remove the effect of the annual RUC price adjustment. The change in RUC revenue per km is shown in the right column.

**Table 13: Powered vehicle RUC revenue and distance and change in revenue per km following August 2012 changes**

Weight category	Powered	Vehicle type description	Number of axles (prime mover or first trailer)	Vehicle type (prime mover or first trailer)	Licence type	12 months prior to August 2012			12 months after August 2012			Change in revenue per km	
						Sum of RUC revenue adjusted	Sum of RUC distance	Sum of Revenue per km	Sum of RUC revenue adjusted	Sum of RUC distance	Sum of Revenue per km		
Light	Powered	Bus	2	1	Standard	8,294,021	150,784,412	\$0.0550	10,568,785	193,638,848	\$0.0546	-0.7%	
		Goods van/truck/utility	2	1	Standard	212,163,988	3,890,047,289	\$0.0545	235,267,181	4,307,355,468	\$0.0546	0.2%	
		Motor Caravan	2	1	Standard	2,087,449	37,514,095	\$0.0556	4,345,203	80,046,173	\$0.0543	-2.3%	
		Passenger car/van	2	1	Standard	159,044,871	2,923,824,532	\$0.0544	164,451,411	3,001,149,038	\$0.0548	0.7%	
<b>Powered Total</b>						<b>381,590,329</b>	<b>7,002,170,328</b>	<b>\$0.0545</b>	<b>414,632,580</b>	<b>7,582,189,527</b>	<b>\$0.0547</b>	<b>0.4%</b>	
<b>Light Total</b>						<b>381,590,329</b>	<b>7,002,170,328</b>	<b>\$0.0545</b>	<b>414,632,580</b>	<b>7,582,189,527</b>	<b>\$0.0547</b>	<b>0.4%</b>	
Heavy	Powered	Bus	2	1	Standard	2,606,827	44,181,000	\$0.0590	213,601	3,071,502	\$0.0695	17.8%	
			2	Standard	30,717,072	170,421,000	\$0.1802	32,872,940	181,124,562	\$0.1815	0.7%		
		<b>2 Total</b>					<b>33,323,899</b>	<b>214,602,000</b>	<b>\$0.1553</b>	<b>33,086,541</b>	<b>184,196,064</b>	<b>\$0.1796</b>	<b>15.6%</b>
		3	5	Standard	18,279,968	70,525,000	\$0.2592						
			6	Standard	168,793	874,000	\$0.1931			12,382	136,207	\$0.0909	-52.9%
			311	Standard						17,566,050	70,705,055	\$0.2484	
		<b>3 Total</b>					<b>18,448,761</b>	<b>71,399,000</b>	<b>\$0.2584</b>	<b>17,578,432</b>	<b>70,841,262</b>	<b>\$0.2481</b>	<b>-4.0%</b>
		4	14	Standard	67,002	335,000	\$0.2000			171,162	881,000	\$0.1943	-2.9%
5	19	Standard	6,536	125,000	\$0.0523			3,176	10,000	\$0.3176	507.3%		
<b>Bus Total</b>						<b>51,846,198</b>	<b>286,461,000</b>	<b>\$0.1810</b>	<b>50,839,311</b>	<b>255,928,326</b>	<b>\$0.1986</b>	<b>9.7%</b>	
		Goods van/truck/utility	2	1	Standard	17,055,855	277,994,118	\$0.0614	4,053,787	56,244,129	\$0.0721	17.4%	

	2		Standard	108,287,279	880,932,344	\$0.1229	97,656,744	923,063,585	\$0.1058	-13.9%
<b>2 Total</b>				<b>125,343,134</b>	<b>1,158,926,462</b>	<b>\$0.1082</b>	<b>101,710,531</b>	<b>979,307,714</b>	<b>\$0.1039</b>	<b>-4.0%</b>
3	5		Standard	1,502,597	5,071,000	\$0.2963				
	6		Standard	276,251,131	750,134,301	\$0.3683	243,287,623	682,298,624	\$0.3566	-3.2%
			H-licence				7,067,087	23,469,082	\$0.3011	
	308		Standard				11,784,660	35,706,000	\$0.3300	
	309		Standard				3,882,324	15,285,070	\$0.2540	
<b>3 Total</b>				<b>277,753,728</b>	<b>755,205,301</b>	<b>\$0.3678</b>	<b>266,021,694</b>	<b>756,758,776</b>	<b>\$0.3515</b>	<b>-4.4%</b>
4	14		Standard	287,494,002	851,012,778	\$0.3378	218,128,277	640,360,421	\$0.3406	0.8%
			H-licence				10,692,526	41,556,402	\$0.2573	
	408		Standard				58,639,231	199,067,561	\$0.2946	
	409		Standard				1,578,703	5,119,000	\$0.3084	
<b>4 Total</b>				<b>287,494,002</b>	<b>851,012,778</b>	<b>\$0.3378</b>	<b>289,038,737</b>	<b>886,103,384</b>	<b>\$0.3262</b>	<b>-3.4%</b>
5	19		Standard	888,346	2,528,000	\$0.3514	653,774	2,190,000	\$0.2985	-15.1%
			H-licence				94,889	480,000	\$0.1977	
<b>5 Total</b>				<b>888,346</b>	<b>2,528,000</b>	<b>\$0.3514</b>	<b>748,663</b>	<b>2,670,000</b>	<b>\$0.2804</b>	<b>-20.2%</b>
Unknown	Unkn		Standard				755,567	0		
			H-licence				264,015	1,210,000	\$0.2182	
<b>Unknown Total</b>							<b>1,019,582</b>	<b>1,210,000</b>	<b>\$0.8426</b>	
<b>Goods van/truck/utility Total</b>				<b>691,479,210</b>	<b>2,767,672,541</b>	<b>\$0.2498</b>	<b>658,539,207</b>	<b>2,626,049,874</b>	<b>\$0.2508</b>	<b>0.4%</b>
Motor Caravan	2	1	Standard	4,283,582	72,354,000	\$0.0592	1,471,853	25,760,662	\$0.0571	-3.5%
		2	Standard	7,423,980	98,964,394	\$0.0750	7,496,671	111,611,513	\$0.0672	-10.4%
<b>2 Total</b>				<b>11,707,562</b>	<b>171,318,394</b>	<b>\$0.0683</b>	<b>8,968,524</b>	<b>137,372,175</b>	<b>\$0.0653</b>	<b>-4.4%</b>
3	5		Standard	83,248	574,000	\$0.1450				
	6		Standard	211,838	1,072,000	\$0.1976	406,925	1,603,324	\$0.2538	28.4%
<b>3 Total</b>				<b>295,086</b>	<b>1,646,000</b>	<b>\$0.1793</b>	<b>406,925</b>	<b>1,603,324</b>	<b>\$0.2538</b>	<b>41.6%</b>
4	14		Standard	106,930	641,000	\$0.1668	178,638	548,000	\$0.3260	95.4%
<b>Motor Caravan Total</b>				<b>12,109,578</b>	<b>173,605,394</b>	<b>\$0.0698</b>	<b>9,554,087</b>	<b>139,523,499</b>	<b>\$0.0685</b>	<b>-1.9%</b>
Passenger car/van	2	1	Standard	2,429,887	41,698,000	\$0.0583	59,049	834,014	\$0.0708	21.4%
<b>2 Total</b>				<b>2,429,887</b>	<b>41,698,000</b>	<b>\$0.0583</b>	<b>59,049</b>	<b>834,014</b>	<b>\$0.0708</b>	<b>21.4%</b>

	<b>Passenger car/van Total</b>				<b>2,429,887</b>	<b>41,698,000</b>	<b>\$0.0583</b>	<b>59,049</b>	<b>834,014</b>	<b>\$0.0708</b>	<b>21.4%</b>
<b>Powered Total</b>					<b>757,864,873</b>	<b>3,269,436,935</b>	<b>\$0.2318</b>	<b>718,991,654</b>	<b>3,022,335,713</b>	<b>\$0.2379</b>	<b>2.6%</b>
Trailer	Trailer	1	24	Standard	566,857	5,288,000	\$0.1072	428,959	4,202,600	\$0.1021	-4.8%
		2	27	Standard	79,866	828,000	\$0.0965	119	1,000	\$0.1190	23.3%
			28	Standard	1,156,443	8,060,000	\$0.1435	715,409	5,884,000	\$0.1216	-15.3%
			29	Standard	19,310,015	159,502,073	\$0.1211	17,332,271	152,385,994	\$0.1137	-6.1%
			30	Standard	2,245,553	11,262,000	\$0.1994	2,093,296	11,924,000	\$0.1756	-11.9%
			929	Standard				348,540	4,190,000	\$0.0832	
		<b>2 Total</b>			<b>22,791,877</b>	<b>179,652,073</b>	<b>\$0.1269</b>	<b>20,489,635</b>	<b>174,384,994</b>	<b>\$0.1175</b>	<b>-7.4%</b>
		3	33	Standard	43,207,539	269,299,554	\$0.1604	29,730,112	190,239,711	\$0.1563	-2.6%
			37	Standard	24,447,807	91,922,662	\$0.2660	18,035,327	69,464,773	\$0.2596	-2.4%
			939	Standard				5,255,168	86,502,255	\$0.0608	
		<b>3 Total</b>			<b>67,655,346</b>	<b>361,222,216</b>	<b>\$0.1873</b>	<b>53,020,607</b>	<b>346,206,739</b>	<b>\$0.1531</b>	<b>-18.3%</b>
		4	43	Standard	142,340,261	700,360,144	\$0.2032	141,932,201	716,901,764	\$0.1980	-2.6%
		5	951	Standard				3,782,065	24,755,000	\$0.1528	
	<b>Trailer Total</b>				<b>233,354,341</b>	<b>1,246,522,433</b>	<b>\$0.1872</b>	<b>219,653,467</b>	<b>1,266,451,097</b>	<b>\$0.1734</b>	<b>-7.4%</b>
	<b>Trailer Total</b>				<b>233,354,341</b>	<b>1,246,522,433</b>	<b>\$0.1872</b>	<b>219,653,467</b>	<b>1,266,451,097</b>	<b>\$0.1734</b>	<b>-7.4%</b>
<b>Heavy Total</b>					<b>991,219,214</b>	<b>4,515,959,368</b>	<b>\$0.2195</b>	<b>938,645,121</b>	<b>4,288,786,810</b>	<b>\$0.2189</b>	<b>-0.3%</b>
<b>Grand Total</b>					<b>1,372,809,543</b>	<b>11,518,129,696</b>	<b>\$0.1192</b>	<b>1,353,277,701</b>	<b>11,870,976,337</b>	<b>\$0.1140</b>	<b>-4.4%</b>