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Road User Charges Review Group

Supplementary Report to Economic Advice in respect
of Road User Charges: Financial Modelling

February 2009



Contents

1. Executive Summary.....	1
2. Introduction	4
3. Approach	6
4. Option Cost Analysis	9
5. Financial Model Input Assumptions	14
6. Sensitivity Analysis	19
Disclaimer	21
Appendix A: Option Descriptions	22
Appendix B: Assumption Book	30

1. Executive Summary

The Government established the Road User Charges Review Group (“RUCRG”), an independent committee, appointed by the Minister of Transport to undertake a review of the road user charges cost allocation model (“CAM”) and the method of collecting the proportion of transport network costs attributable to diesel vehicles.

The RUCRG requested economic advice in relation to possible alternatives to the existing road user charges system. The final report was submitted to the RUCRG on 13 February 2009.

To supplement the economic advice the RUCRG requested financial modelling to provide comparative analysis of the key cost drivers of implementing and operating the alternative charging options – both to Government (admin costs) and to operators (compliance costs).

For this supplementary report the RUCRG requested that Option D not be costed as the costs are too uncertain at this time. It further requested that a variation to Option A be costed which was not considered in the Economic Advice – this is Option A1.

Appendix A provides summary descriptions of each option.

It is important to note that the figures described below are based on indicative input assumptions which in many cases are highly subjective and therefore potentially subject to material inaccuracies.

Whilst every attempt has been made within the time available to gather data which enables reasonable estimates to be derived, it is appropriate to consider the analysis from an indicative comparative perspective

only as the absolute figures could vary significantly at the point of implementation and operation.

All figures are in \$2008 and are rounded to the nearest hundred thousand dollars.

Costs	Opt A	Opt A1	Opt B	Opt C
Upfront Govt	\$7.2m	\$6.8m	\$10.1m	\$9.8m
Ongoing Govt	\$55.9m	\$57.3m	\$49.2m	\$42.0m
Operator costs	\$31.3m	\$36.6m	\$31.2m	\$22.4m
Total Ongoing	\$87.2m	\$93.9m	\$80.4m	\$64.4m
Benefit vs status quo	\$14.4m	\$7.7m	\$21.2m	\$37.2m
Payback period	0.5 yrs	0.9 yrs	0.5 yrs	0.3 yrs

The implementation costs are relatively low compared to annual administration / compliance costs and furthermore relatively similar across the options so this is not a material differentiating factor. Options B & C are higher due to the cost of implementing a system around diesel excise payments (and refunds).

Option C has lower ongoing costs than the other options and is also significantly less costly to operate than the current system (status quo). Indeed, this is the key reason why Option C has been included in the overall economic analysis.

Option C sees the removal of the current RUC system completely and replacement with increased MVR license fees for HGVs, with minimal cost as the MVR license fee system is already well established, and a new diesel excise regime. Whilst implementing a diesel excise regime entails some new costs – particularly relating to processing applications for refunds – these are likely to be substantially lower than the costs of administering a RUC system.

Furthermore Option C has the lowest use of technology and lowest incentives to adopt it since while it allows for the possibility of operators installing OBUs to provide evidence for off-road refunds, it would be expected that the actual level of take-up would be low.

Options A and B are both likely to be somewhat less expensive for the Government to operate than the current system due to the simplification of the RUC system which reduces costs. This is partially offset by increased MVR licence fee transaction costs under Option A and diesel excise refund application processing and compliance costs under Option B. There is significant uncertainty about the costs of operating an efficient system for the processing of diesel excise refunds. Assuming that an approach piggy-backing on the current GST collection framework is feasible, it is considered likely that this would entail lower costs (under Option B) than the uplift in MVR costs (under Option A). For this reason Option A is assessed as more expensive to operate than Option B.

Uptake of OBUs under Options A, A1 and B is assumed to be 20% of the RUC-paying fleet under all options and is assumed to deliver savings in admin

costs to both the Government and to operators. These savings are expected to manifest in reduced time to administer RUC licence renewals, and to process RUC refunds for off road use. These savings have been included notwithstanding that there is a monthly lease cost associated with installation of OBUs which is not included here on the basis that OBU installation decisions would be primarily based on broader fleet management benefits.

Although operator costs for Options A and B have been assessed as relatively similar, a key differentiating factor is the deadweight burden to operators required to apply for diesel excise refunds under Option B which does not currently exist – particularly relating to businesses who currently have no interface with the RUC system as their use of diesel is restricted to off-road use (e.g. as an industrial manufacturing component). i.e. under Option A, the operator costs are largely borne by road users, while under Option B a portion of compliance costs shifts to consumers of diesel outside of the road transport sector and who are not the target of the tax.

Option C also bears these higher deadweight diesel refund costs but these are offset at a whole of economy level by reduced RUC admin costs – thus further shifting the compliance burden from road users to non road diesel consumers.

Option A1 represents the least change from the status quo and thus retains most of the current costs – in particular administration of RUC for the entire diesel fleet.

Evasion and revenue leakage

Since evasion/leakage expectations are built into the CAM and the CAM calculates RUC based on expected revenues net of evasion, this is not a true 'cost' to the economy, it is merely a transfer in cost burden from those who evade payment to those who do not. For this reason it is not included in the summary cost analysis above.

The table below provides an estimate of the value of evasion and how these costs might compare across the options.

All figures are lower than the status quo through the universal removal of actual weight specification within the RUC charging system.

Cost Type	Opt A	Opt A1	Opt B	Opt C
RUC evasion	\$6m	\$16.4m	\$1.9m	\$0m
MVR licence fees	\$12.4m	\$2.9m	\$2.9m	\$5.9m
Diesel evasion	\$0m	\$0m	\$8.3m	\$8.3m
OBU revenue leakage	\$3.3m	\$4.4m	\$1.0m	\$0m
Total evasion	\$21.6m	\$23.6m	\$14.1m	\$14.3m

A key assumption under Option A is that there will be increased rates of non-payment of MVR licence fees annually by light diesel vehicles, due to the substantial increased cost of licensing. Note, that persistent non-payment of MVR licence fees (greater than 12 months) leads to de-registration of the vehicle under current legislation.

Conclusions

This report suggests that:

- All options considered deliver savings against the status quo, with almost immediate payback on the upfront costs of implementation;
- Option C is the most cost efficient, delivering significant cost savings against the status quo;
- Option B is the next most cost efficient, followed by Option A then Option A1;
- Overall the annual cost savings (ranging between \$8m for Option A1 and \$37m for Option C) are not highly material compared against the total value of the revenues collected (less than 5%);
- The ratings for "efficiency" in the Economic Report should arguably be adjusted to place Option A and B on a more equal footing; i.e. both rated a 3-4 for efficiency where Option A was rated a 4 (better than the status quo) and Option B was rated a 1-2 (worse than the status quo);
- This change in the efficiency ratings does not, however, change the overall assessment that Option A is, on balance, economically advantageous compared against the alternative options, particularly over time; and
- The Economic Advice report did not consider Option A1, but it is clear that this option delivers the lowest level of cost efficiencies.

2. Introduction

The Government established the Road User Charges Review Group (“RUCRG”), an independent committee, appointed by the Minister of Transport to undertake a review of the Ministry’s road user charges cost allocation model (“CAM”) and the method of collecting the proportion of transport network costs attributable to diesel vehicles.

The RUCRG requested economic advice in relation to possible alternatives to the existing road user charges system. The final report was submitted to the RUCRG on 13 February 2009.

To supplement the economic advice the RUCRG requested financial modelling to provide comparative analysis of the key cost drivers of implementing and operating the alternative charging options – both to Government (admin costs) and to operators (compliance costs).

For this supplementary report the RUCRG requested that Option D not be costed as the costs are too uncertain at this time. It further requested that a variation to Option A be costed which was not considered in the Economic Advice – this is Option A1.

The range of options which have been identified are sufficiently different from each other to enable valid comparisons to be made. Simplifying assumptions had to be made as there are many variations to these options which could have been considered and potentially a hybrid of the options may be recommended by the RUCRG.

This report should be read in conjunction with the ‘Economic Advice in respect of Road User Charges’ report which sets out the detail of each option and evaluation of these options.

A summary of the key characteristics of each option are set out overleaf. Appendix A provides more detailed descriptions of each option.

Summary of Costed Options

Characteristic	Option A	Option A1	Option B	Option C
RUC based on usage?	Yes for vehicles over 3.5T	Yes for all vehicles	Yes for vehicles over 6T	No
Allowance for weight ¹	RUC charges vary according to weight	RUC charges vary according to weight	RUC charges vary according to weight	MVR licence fees vary according to weight
Diesel excise?	No	No	Yes	Yes
MVR licence fees levied	Higher rate for vehicles under 3.5T. Flat rate for all vehicles over 3.5T	Flat rate for all vehicles	Flat rate for all vehicles	Flat rate for all vehicles less than 6T, then scale for vehicles over 6T
Amount of MVR licence fee	Vehicles < 3.5T set at rate equal to current average RUC paid by these vehicles Other vehicles, retain current rate	Retain current rates	Retain current rates	No change for vehicles less than 6T, scale for vehicles over 6T adjusted for diesel excise
Refunds?	No for vehicles less than 3.5T, yes for vehicles over 3.5T based on distance	Yes for all vehicles which install OBUs and all heavy vehicles over 3.5T, based on distance	Yes for heavy vehicles over 6T only, both with respect to diesel excise, and RUC	Yes for heavy vehicles over 6T only and with respect to diesel excise only
Use of technology	Incentives for vehicles over 3.5T to use OBUs	Incentives for vehicles to use OBUs	Incentives for vehicles over 6T to use OBUs	Limited incentives – low technology option.

¹ In all cases weight would be referenced against the maximum allowable on-road gross laden weight as recorded in the MVR at the time of vehicle registration.

3. Approach

The aim of this financial modelling exercise is to provide a high level comparison of the charging options. The financial modelling of the alternative options as requested by the RUCRG broadly involved the following steps:

1. Developing a financial model;
2. Assumptions workshop;
3. Model population; and
4. Option financial analysis.

These steps are discussed in further detail below.

Developing a financial model

The framework in terms of the key outputs required from the financial model were discussed and agreed with RUCRG.

The main cost categories were identified;

- Government administration costs;
- Vehicle operator compliance costs; and
- Lost revenue from evasion.²

The upfront cost requirements of each option were separately identified from the expected ongoing operational costs of the option. An outline assumptions book was produced of the expected required cost assumptions. This assumptions book formed the basis

² Revenue is not truly “lost” through evasion since the Cost Allocation Model allows for a projected level of evasion and calculates RUC accordingly. Therefore it is merely a transfer of costs from evaders to all other payers.

of the assumptions workshop. The populated assumptions book is contained in Appendix B.

Assumptions workshop

An assumptions workshop was held in Wellington with participants from The Ministry of Transport (“MoT”), The New Zealand Transport Agency (“NZTA”), RUCRG and Deloitte. The main aim of this workshop was to establish the main costs of the status quo and identify key cost drivers where the costs were likely to change from the status quo under each option and any additional costs which were likely to be incurred under each category.

Once each of the key cost drivers had been identified the participants best placed to source the expected cost were tasked to help populate the assumptions book with reasonable assumptions.

The limited time frame in which the outputs are required from the financial model meant that only the key cost drivers which were likely to change between options were focused on. This also meant that only existing available information could be used and if the information was not available estimations have been made by those most familiar with current systems most similar to proposals. Wherever possible the limitations around the assumptions provided have been identified.

Model population

Once the initial key cost assumptions had been obtained these were used to populate the financial model. The population of the financial model is an iterative process as gaps in the assumptions were identified and completeness and sense checks were carried out.

It should be noted that this is not a full costing process at this stage as the options are still under discussion but a high level comparison of the key cost drivers of the options identified.

Sensitivity analysis has been performed to evaluate the impact that a change in OBU uptake would have. The financial model output is based on 20% uptake of OBUs across all RUC-payers in Options A, A1 and B under the base case scenario. It has been assumed that the 20% of operators account for 50% of off-road RUC refund claims. In the sensitivity analysis it has been assumed that 10% OBU uptake corresponds to 30% of off-road RUC refund claims, 30% OBU uptake corresponds to 60% of off-road RUC refund claims, 40% OBU uptake corresponds to 70% of off-road RUC refund claims and 50% OBU uptake corresponds to 80% of off-road RUC refund claims.

Key Assumptions & Limitations

- Option D has not been costed on the basis that it is an aspirational option only and would not be implemented at the current time as it is recognised that the costs of implementation with current technology would make this uneconomic particularly for light vehicles. However, it is the view of the RUCRG that this situation may change within the near term (five years say).
- The cost of installing and paying for monthly maintenance and operation of OBUs has not been included in the analysis of vehicle operator compliance costs since the installation of these units is voluntary and it is therefore assumed that operators would only install the units if the benefits to them outweighed the costs.
- The mechanism for processing applications for refunds of diesel excise (under Options B and C) where the diesel is consumed in off-road business activities is subject to significant uncertainty presently. We have assumed that a relatively low cost approach would be feasible piggy-backing on IRD's GST collection/compliance processes with minimal system and process modifications needed.
- The assumptions used within the financial model are based on the status quo user behaviour and does not take into account behaviour changes which might occur as a result of revised charging system. For example a move to different vehicle types or between weight categories depending on the option.
- The financial model assumptions around the operating costs are based on a steady state and so do not take account of ramp up in usage or the time frame of implementation other than upfront costs of implementing. This means that the time value of money is not being taken into account.
- No financing costs have been assumed in relation to the upfront capital costs of implementation.

- The analysis carried out at this time is essentially high level focusing on the key cost drivers and those costs which are expected to change between options. Simplifying assumptions have been essential in order to estimate the cost implications for the purpose of comparative analysis and no reliance should be placed on the absolute costs calculated for each option.
- Some of the operating costs incurred under the current system are recovered by passing these through to the user by way of administration charges levied at the point of payment, and which vary depending on the payment channel chosen. The administration revenue recovered from the users has not been included within this analysis; the focus has been on the overall cost of the system, regardless of how costs are recovered.

4. Option Cost Analysis

The tables below provide an over-view of the comparative results across the options. All figures are rounded to the nearest hundred thousand and are in 2008 dollars

All the options costed show a net economic benefit compared against the status quo and because the upfront costs are relatively low the payback periods are

all less than 1 year. Option A1 shows the smallest net benefit as it has the least amount of change from the current system and hence the potential for cost reductions are the lowest.

Further explanation of these results are provided on the next pages.

Table 4.1 Comparative Overview of the Options: Net Economic Benefit

Cost Type	Status Quo	Option A	Option A1	Option B	Option C
One-off Implementation Costs	\$0m	\$7.2m	\$6.8m	\$10.1m	\$9.8m
Ongoing Costs to Government	\$59.8m	\$55.9m	\$57.3m	\$49.2m	\$42.0m
Benefit to Government compared to Status Quo	N/A	\$3.9m	\$2.5m	\$10.6m	\$17.8m
Payback Period	N/A	1.9 years	2.7 years	0.9 years	0.6 years
Operator/Industry Compliance Costs	\$41.8m	\$31.3m	\$36.6m	\$31.2m	\$22.4m
Benefit to Operators compared to Status Quo	N/A	\$10.5m	\$5.2m	\$10.6m	\$19.4m
Net Economic Impact (Annual) – Government and Operators	N/A	\$14.4m	\$7.7m	\$21.2m	\$37.2m
Net Economic Benefit Payback Period	N/A	0.5 years	0.9 years	0.5 years	0.3 years³

³ The significant net benefit needs to be weighed against loss in economic efficiency in other areas – refer to Economic Report.

Cost to Government

Table 4.2 Cost to Government

Cost Type	Status Quo	Option A	Option A1	Option B	Option C
One off implementation costs to Government					
Marketing & call centre	\$0m	\$2.1m	\$2.0m	\$3.0m	\$3.3m
Legislation costs	\$0m	\$1.1m	\$0.8m	\$1.1m	\$0.6m
Implementing diesel excise	\$0m	\$0m	\$0m	\$2m	\$2m
Implementing OBU Interface technology	\$0m	\$4m	\$4m	\$4m	\$4m
Total one off costs	\$0m	\$7.2m	\$6.8m	\$10.1m	\$9.8m
Ongoing cost to Government					
NZTA RUC admin costs	\$17.8m	\$6.7m	\$15.3m	\$6.1m	\$0m
Other enforcement costs ⁴	\$5.3m	\$5.3m	\$5.3m	\$5.3m	\$4.3m
NZTA MVR licence costs	\$36.7m	\$43.9m	\$36.7m	\$36.7m	\$36.7m
Diesel excise costs inc refund	\$0m	\$0m	\$0m	\$1.0m	\$1.0m
OBU administration costs	No material cost identified				
Total ongoing costs	\$59.8m	\$55.9m	\$57.3m	\$49.2m	\$42.0m

⁴ Includes police costs, MOT costs and infrastructure maintenance. Immaterial change to costs across options assumed except MoT RUC costs which have been removed under Option C.

The implementation costs are relatively low compared to annual administration / compliance costs and furthermore relatively similar across the options so this is not a material differentiating factor. Options B & C are higher due to the cost of implementing a system around diesel excise payments (and refunds).

Option C has lower ongoing costs than the other options and is also significantly less costly to operate than the current system (status quo). Indeed, this is the key reason why Option C has been included in the overall economic analysis.

Option C sees the removal of the current RUC system completely and replacement with increased MVR license fees for HGVs, with minimal cost as the MVR license fee system is already well established, and a new diesel excise regime. Whilst implementing a diesel excise regime entails some new costs – particularly relating to processing applications for refunds – these are likely to be substantially lower than the costs of administering a RUC system.

Furthermore Option C has the lowest use of technology and lowest incentives to adopt it since while it allows for the possibility of operators installing OBUs to provide evidence for off-road refunds, it would be expected that the actual level of take-up would be low.

Options A and B are both likely to be somewhat less expensive for the Government to operate than the current system due to the simplification of the RUC system which reduces costs. This is partially offset by increased MVR licence fee transaction costs under Option A and diesel excise refund application processing and compliance costs under Option B. There is significant uncertainty about the costs of operating an efficient system for the processing of diesel excise refunds. Assuming that an approach piggy-backing on the current GST collection framework

is feasible, it is considered likely that this would entail lower costs (under Option B) than the uplift in MVR costs (under Option A). For this reason Option A is assessed as more expensive to operate than Option B.

Option A1 represents the least change from the status quo and thus retains most of the current costs – in particular administration of RUC for the entire diesel fleet.

Operator Costs of Compliance

Although operator costs for Options A and B have been assessed as relatively similar, a key differentiating factor is the deadweight burden to operators required to apply for diesel excise refunds under Option B which does not currently exist – particularly relating to businesses who currently have no interface with the RUC system as their use of diesel is restricted to off-road use (e.g. as an industrial manufacturing component). i.e. under Option A, the operator costs are largely borne by road users, while under Option B a portion of compliance costs shifts to consumers of diesel outside of the road transport sector.

Option C also bears these higher deadweight diesel refund costs but these are offset at a whole of economy level by reduced RUC admin costs – thus further shifting the compliance burden from road users to all diesel consumers.

Uptake of OBUs under Options A, A1 and B (assumed to be 20% of the RUC-paying fleet under all options) is assumed to deliver savings in admin costs to both the Government and to operators. These savings are expected to manifest in reduced time to administer RUC licence renewals, and to process RUC refunds for off road use. These savings have been included notwithstanding that there is a monthly lease cost associated with installation of OBUs which is not included here on the basis that OBU installation decisions would be primarily based on broader fleet management benefits.

Table 4.3 Operator Costs

Cost Type	Status Quo	Option A	Option A1	Option B	Option C
Operator/Industry Compliance Costs					
RUC administration ⁵	\$21.6m	\$8.6m	\$17.3m	\$8.0m	\$0m
MVR administration	\$18.5m	\$21.8m	\$18.5m	\$18.5m	\$18.5m
Refunds of RUC & Diesel Excise	\$1.7m	\$0.9m	\$0.9m	\$4.7m	\$3.9m
Total compliance costs	\$41.8m	\$31.3m	\$36.6m	\$31.2m	\$22.4m

⁵ Not including administration costs paid to NZTA

Evasion and Leakage

Since evasion/leakage expectations are built into the CAM (i.e. the CAM calculates RUC based on expected revenues net of evasion), this is not a true 'cost' to the economy, it is merely a transfer in cost burden from those who evade payment to those who do not. All options show lower estimated levels of evasion than the status quo due to the removal of the system requiring operators to specify an actual expected on-road weight when purchasing their RUC license.

Option A, A1 and B encourage the uptake of OBUs which reduces RUC evasion. However this is more than offset by the increase in leakage from OBU technology using the current assumption of 2.5% revenue leakage from OBUs. This indicates that the current evasion figures used in the model are likely to represent a very conservative assessment of the current level of evasion in the system.

Options A, B and C (in particular) remove categories of vehicles from the RUC system thus further removing opportunities for evasion in respect of distance travelled. This does not apply to A1. However in Options B and C this is partially replaced by new opportunities for evasion in relation to erroneous/fraudulent claims for refunds of diesel excise duty.

A key assumption under Option A is that there will be increased rates of non-payment of MVR licence fees annually by light diesel vehicles, due to the substantial increased cost of licensing. Note, that persistent non-payment of MVR licence fees (greater than 12 months) leads to de-registration of the vehicle under current legislation.

Any system involving the use of technology to collect data on which revenue collection will be based will also require specification of an acceptable level of technology leakage.

Table 4.4 Revenue Evasion and Leakage

Evasion/Leakage	Status Quo	Option A	Option A1	Option B	Option C
RUC evasion	\$43m	\$6m	\$16.4m	\$1.9m	\$0m
MVR licence fees	\$2.9m	\$12.4m	\$2.9m	\$2.9m	\$5.9m
Diesel evasion	\$0m	\$0m	\$0m	\$8.3m	\$8.3m
OBU revenue leakage	\$0m	\$3.3m	\$4.4m	\$1.0m	\$0m
Total evasion	\$45.9m	\$21.6m	\$23.6m	\$14.1m	\$14.3m

5. Financial Model Input Assumptions

The financial model assumptions are divided up in the three key areas;

- Government administration costs;
- Vehicle operator compliance costs and third party costs; and
- Lost revenue from evasion.

These figures are approximations and further work should be carried out to refine these numbers. The basis of the estimates included in the table is set out in the assumptions book in Appendix B.

Government administration costs

One-Off Implementation Costs

NZTA

Under all options there will be one-off upfront costs incurred by NZTA. These costs are split into two distinct cost categories, marketing costs and call centre costs. Marketing costs would involve the cost of informing the users of changes to the system through advertising, education, pamphlets etc. The budget for the Northern Gateway Toll Road was \$1m to target the Auckland area, informing the road users and encouraging the use of road and cost effective payment channels.

Changes to the RUC system will require information to be transmitted to all RUC payers nationwide, not just in the Auckland area and on this basis the base budget allowed for has been \$2 million. In addition for Options B and C it will be necessary to inform all diesel buyers of the new tax and the off road refund process.

Call centre costs would also increase initially due to increased number of calls being made to NZTA enquiring about the new system.

Implementing diesel excise tax

If a diesel tax was introduced along the lines of petrol fuel excise duty being taxed at source (and passed through to consumers eg at the pump), the set up costs to the Government could be kept to a minimum by adding on to the existing fuel tax system. There would be costs relating to legislation changes but little else.

The more significant implementation costs are likely to relate to setting up systems to allow those businesses which consume diesel other than for on-road use to apply for a refund on the diesel excise. The approach considered is to piggy-back on IRD's current systems and processes as they relate to GST – ie, to allow GST registered businesses to apply for refunds and offset this against GST payable.

Costs of implementation would therefore relate to changes in IRD's forms, websites and systems to process GST returns and cashflows and link to NZTA systems to recover refunds from that source. A contingency amount of \$2 million has been allowed for this.

Implementing OBU Technology and Standards

Under Options A, B and C HGVs (and light vehicles under A1) have the option of voluntarily adopting technology which allows real-time measurement of actual distance and location. Since the use of technology under Options A, A1 and B involves post-payment there is the need for accounts to be set-up and systems to allow for reconciliation of payments from service providers and the auditing of payments. There are also system integration costs to the Government as between the OBU data and Government systems.

Cashflow implications

Under Options A, A1 and B there is likely to be a one off cashflow implication during the first year of implementation as those who opt for use of OBUs to track road use data move from the RUC pre pay system to an account based post pay system. This will only have significant cashflow implications for the first year of operation, with a one off cost to the Government and a one off gain to the users.

This is not included within the financial model as the model does not take into account the time value of money or charges during the establishment period which would need to be carefully considered if changes were pursued. It will also not impact the overall cost as the cost to the Government will offset the gain to the user.

The likely cash flow impact has been assessed in the table below but these have not been included as costs within the financial model.

	Status Quo	Opt A	Opt A1	Opt B
Delay	N/A	1 month	1 month	1 month
Proportion of uptake	0%	20%	20%	20%
RUC Revenue impacted	\$874m	\$652m	\$874m	\$205m
One off cash flow impact	\$0m	(\$10.9m)	(\$14.6m)	(\$3.4m)

Ongoing costs

Key inputs include:

- Reductions to RUC administration costs due to the removal of the requirement to specify actual weight, the uptake of OBUs and due to the removal of light vehicle RUC-payers from the system in Option A and B. RUC no longer applies under Option C.
- Reductions in enforcement costs relating to RUC specifically (but recognising that other enforcement activities covered by the CAM – eg Police safety checks on HGVs will still be required).

- Under Option A, increased costs relating to MVR license payment transactions. It is expected that the volume of transactions would increase significantly as most light vehicle users would choose to pay more frequently (an extra two transactions per vehicle per year has been assumed).
- Increased costs relating to diesel excise – in particular to process applications for diesel excise refunds. On the assumption that this piggy-backs on the GST system, it is considered that marginal costs may not be significant with most emphasis on enforcement of eligibility for refunds.

Vehicle operator compliance costs and third party costs

- This analysis focuses on the time spent by operators in terms of administration paper work for RUC, MVR and diesel excise refund applications, as appropriate. Costs are calculated based on expected time consumed to complete paperwork taking into account time savings which might be expected from installation of OBUs as appropriate.
- Costs to operators relating to auditing and road side inspection have not been included here, all options will require a certain level of auditing and this cost is assumed not to be materially different between the options.
- Costs relating to leasing OBUs have not been included as it is assumed that this voluntary decision will be made based on wider benefits beyond RUC administration. This assumption

needs to be tested (refer section 6, sensitivity analysis).

Lost revenue from evasion

Evasion of RUC

Since evasion/leakage expectations are built into the CAM and the CAM calculates RUC based on expected revenues net of evasion, this is not a true 'cost' to the economy, it is merely a transfer in cost burden from those who evade payment to those who do not.

There are no reliable figures on the current amount of tax avoided through RUC. MoT estimates that in 2008 there was at least \$30 million evasion in relation to heavy vehicles and \$13 million in relation to light vehicles and these figures have been used in the financial model but are seen as a very conservative assessment of the level of evasion (other sources have estimated that the evasion figure could be as high as \$200 million, however this is not based on a reliably measured source).

Under Options A and B the light vehicle amount of \$13million is removed together with 75% of the heavy vehicle evasion. This is to account for the evasion being made up of a mix of weight and distance based fraud. No information has been provided on the split between distance and weight evasion so 75% weight evasion has been assumed based on discussions with the RUCRG (the only area of evasion reduced under A1). The amount of RUC evasion is significantly lower under Option B than Option A as there is diesel excise under Option B so it has been assumed that the amount of RUC charges would decrease. Under Option C there is no RUC and therefore nil evasion in relation to RUC.

Evasion of MVR licence fees

Currently on average 88% of all vehicles are fully compliant and 98.5% are compliant within the 12 month period. The MVR licence fee will increase under Options A and C which may result in delays in collecting the fee and a potential decrease in the 88% and 98.5% compliance levels especially under Option A. The compliance levels are more likely to change under Option A than Option C due to light vehicle operators being less likely to comply. We have assumed that the 98.5% compliance level will decrease to 97% under Option A but remain unchanged under Option C.

The 88% may reduce as the MVR licence fee increases and therefore costs of collection are likely to be higher and this is covered under operating costs.

Evasion of diesel excise (Options B and C)

For Options B and C which involve diesel excise the main risk of lost revenue is through fraudulent refund claims. As the diesel excise is likely to be taxed at source and fully passed through to the end consumer, there is significantly reduced ability to evade payment. However, as refunds can be claimed and there is limited recourse on the user for those refund claims found to be fraudulent from audit and compliance processes there is significant risk of lost revenue by this means.

It is very difficult to calculate the potential level of evasion within New Zealand. Research has been carried out into the level of evasion which is seen overseas to give an indication of the likely proportion of evaded revenue. In the US there are various reports on the evasion of fuel tax including one which estimates a 16.3% loss of diesel tax through evasion, omission and errors⁶. One of the main causes of evasion was cross border issues as each state may have a different excise policy.

In Great Britain there is a commitment to reduce and maintain levels of fraud in relation to diesel excise to 2%; however in 2002 this percentage was 6%⁷. A reduction has been achieved through customs enforcement activity and was estimated to be at 2% by 2006. The fraudulent activity in the UK is through inappropriate use of non taxed fuel.

This international experience is not directly comparable as the proposal for New Zealand is that the excise will be applied to all diesel so there is no option to use untaxed diesel, untaxed diesel is dyed in the UK and US. The NZ evasion would arise through false claims for refunds. It has been assumed that excise refunds would be processed by IRD like other taxes, and the penalties and disincentives for inaccurate or fraudulent refund claims would be similar to those which apply to other taxes. This has formed the basis for assumptions here. The real difficulty will be in establishing the physical end use of diesel for which refunds have been claimed.

⁶ 'Determining the rates of motor fuel evasion for the state of Montana' Montana Department of Transportation May 2007

⁷ 'UK Oil Strategy' Joint HMRC Industry oils intelligence and security forum activity report 05 (02)

OBU evasion / leakage (Options A, A1 and B)

The OBU technology is not 100% accurate, there is potential for lost revenue through system error or fraud. This has been estimated at 2.5% of revenue collected via this means. A 20% uptake of OBUs has been assumed – including light vehicles under A1. For the base case, these vehicles have been assumed to account for 50% of off-road RUC refund claims since vehicles which have considerable off-road travel are likely to receive greater benefits from installing OBUs.

Section 6 presents some sensitivity analysis around these assumptions.

6. Sensitivity Analysis

Sensitivity analysis has been performed to evaluate the impact that a change in OBU uptake would have. As the cost of installing and paying for monthly maintenance and operation of OBUs decreases over time, it would be expected that OBU uptake would increase. This cost has not been included in the analysis of vehicle operator compliance costs since the installation of these units is voluntary and it is therefore assumed that operators would only install the units if the benefits to them outweighed the costs. Key benefits which would influence this installation decision are assumed to be outside of RUC administration e.g. improved fleet management.

The financial model output in the previous sections is based on 20% uptake of OBUs across all RUC-payers in Options A, A1 and B (noting that A1 has the highest number of RUC-payers, followed by A, then B), which is our base case scenario. Sensitivity analysis has been undertaken based on OBU uptake of 10, 30%, 40% and 50%. Under the base case it was assumed that the 20% of vehicle operators accounted for 50% of off-road RUC refund claims. In the sensitivity analysis it has been assumed that 10% OBU uptake corresponds to 30% of off-road RUC refund claims, 30% OBU uptake corresponds to 60% of off-road RUC refund claims, 40% OBU uptake corresponds to 70% of off-road RUC refund claims and 50% OBU uptake corresponds to 80% of off-road RUC refund claims.

An OBU uptake of 10% has been included to analysis the economic impact that an uptake of less than 20%, as under the base case, would have.

Table 6.1 below provides the net economic benefit compared against the status quo based on different uptake of OBUs.

Table 6.1 Net Economic Impact (Annual) – Government and Operators

OBU Uptake	Opt A	Opt A1	Opt B	Opt C
10%	\$12.8m	\$5.0m	\$19.7m	\$37.2m
20% (base)	\$14.4m	\$7.7m	\$21.2m	\$37.2m
30%	\$15.8m	\$10.2m	\$22.5m	\$37.2m
40%	\$17.1m	\$12.6m	\$23.8m	\$37.2m
50%	\$18.5m	\$15.0m	\$25.0m	\$37.2m

The net economic benefit increases across all options as the uptake of OBUs increases except from Option C. Under Option C it has been assumed that there is no uptake of OBUs. The majority of the increase in economic benefit is due to a decrease in costs for vehicle operators. The only benefit to the Government is from a decrease in costs in administering off-road RUC refunds. As OBU uptake increases by 10%, government costs decrease by \$100k per year under Options A, A1 and B.

The economic benefit to operators from an increase in OBU uptake arises from a decrease in RUC administration costs and a decrease in costs related to applying for off-road RUC refunds. With OBUs installed, RUC charges and refunds are calculated automatically by providers. The net economic benefit increases greatest under Option A1 due to both light and heavy vehicles having OBUs installed. The net economic benefit increases by similar amounts under Options A and B due to there being only a small amount of vehicles between 3.5 and 6 tonnes that do not pay RUC under Option B.

Table 6.2 below shows the amount of revenue evasion and leakage based on different uptake of OBUs

Table 6.2 Revenue Evasion and Leakage

OBU Uptake	Opt A	Opt A1	Opt B	Opt C
10%	\$20.7m	\$23.5m	\$13.8m	\$14.3m
20% (base)	\$21.6m	\$23.6m	\$14.1m	\$14.3m
30%	\$22.5m	\$23.8m	\$14.4m	\$14.3m
40%	\$23.4m	\$23.9m	\$14.7m	\$14.3m
50%	\$24.3m	\$24.0m	\$14.9m	\$14.3m

The amount of revenue evasion and leakage increases across all options as the uptake of OBUs increases except from Option C. Revenue evasion and leakage increases due to the increase in leakage from OBU technology outweighing the decrease in RUC evasion. This further indicates that the current evasion figures used in the model are likely to represent a very conservative assessment of the current level of evasion in the system.

The increase in revenue evasion and leakage is the least under Option A1 due to both light and heavy vehicles having OBUs installed. The decrease in RUC evasion outweighs the increase in leakage from OBU technology from light vehicles. The increase in revenue evasion and leakage is higher under Option A than Option B due to a greater amount of RUC being collected and therefore the impact of the increase in leakage from OBU technology outweighing the decrease in RUC evasion is greater.

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Appendix A: Option Descriptions

Option A: RUC for vehicles over 3.5 tonnes only, with option of technology enabled measurement of on-road distance. Removal of actual weight specification and supplementary RUC licenses. License fees only for vehicles under 3.5 tonnes

Component	Description
Underlying principles	Light vehicles excluded from RUC system. The key principle here is to keep it simple for light vehicles. Significant emphasis therefore on license fees for these vehicles – CAM will allow for this. HGVs and buses remain in RUC system which is adapted to be at the same time simpler to administer but also future-proofed for technology enhancements. Refunds for off-road use restricted to HGVs.
Heavy goods vehicles / buses and coaches	Powered vehicles and trailers over 3.5 tonnes, with different categories according to axle configurations. Charges based on a RUC system integrating distance and weight (based on maximum gross laden weight). Base annual MVR license fee unchanged from current license fees.
Light vehicles not currently paying fuel excise	Vehicles up to 3.5 tonnes to pay a flat rate annual MVR licence fee with no graduation for weight. Excluded from RUC system. Note that vehicles over 3.5 tonnes included in RUC system (i.e. under this option effectively classified with HGVs). Payment options for MVR license fee to spread cost over year.
Basis for measuring distance	HGVs/buses – operators encouraged to adopt technology which allows real-time measurement of actual distance and location (off or on road). Incentive is ability to pay on account in arrears, including automatic offsets of on and off road travel. Operators can still choose to pay as per current system – in advance, with hub-odometers used for enforcement purposes. Not applicable for light vehicles under 3.5 tonnes.
Basis for measuring weight	No consideration for vehicles up to 3.5 tonnes Operators over 3.5 tonnes to pay based on max permissible on-road gross laden weight.
Location component	HGVs/buses – refund for off-road use (automatic off-set with appropriate technology) No refund system for light vehicles in respect of MVR license fees paid.
Time of travel component?	No

Component	Description
Congestion component?	No
Application of technology	HGV/bus operators encouraged to install on-board units (OBUs) to accurately measure real time distance/location (on-off road). Approved OBUs will be connected to licensed providers of tracking services who will periodically submit data to the billing agency for payment on account.
Enforcement / evasion	Licensed software providers of tracking services will be subject to audit and regulated requirements to report GPS outages etc. Operators connected to this service less likely to be targeted for enforcement stops. May need to consider additional roadside (ANPR/DSRC) technology for verification/enforcement purposes, particularly in urban areas. Evasion not an issue for light vehicles under 3.5 tonnes.
Back office processes and costs of compliance	Establish a system for payment of RUC on account for vehicles with OBUs with linkages to software providers for data. No need for vehicles with OBUs to apply for off-road refunds. For vehicles without OBUs, current systems for processing payment and refunds generally to be streamlined (reduce payment options, more online purchases). Off-road refunds for light vehicles under 3.5 tonnes no longer possible.
Future proofed	Encourages installation of approved OBUs into vehicles over 3.5 tonnes. No diesel tax so no issues with fuel usage as a proxy for distance and weight.

Additional points

- Electric vehicles pay license fee (could have incentives considered)
- No exceptions for buses

Option A1: RUC retained for all vehicles which currently pay RUC, with option of technology enabled measurement of on-road distance. Removal of actual weight specification and supplementary RUC licenses.

Component	Description
Underlying principles	Tweaking to the current system to reduce costs and opportunities for evasion – in particular through removing actual weight specification. Providing operators with option to pay RUC in arrears and on account if they install OBUs – which will also avoid need to apply for refunds for off-road use. Other than use of technology, no new systems or processes introduced and no significant changes to timing or methods of payments. Base annual MVR license fees unchanged from current license fees.
Heavy goods vehicles / buses and coaches	Powered vehicles and trailers over 3.5 tonnes, with different categories according to axle configurations. Charges based on a RUC system integrating distance and weight (based on maximum gross laden weight).
Light vehicles not currently paying fuel excise	Vehicles up to 3.5 tonnes (maximum gross laden weight). Charges based on a RUC charges for distance only. Refunds for off-road use only available if install OBUs. Pay a flat rate annual MVR licence fee with no graduation for weight. Different scale may be required for electric vehicles.
Basis for measuring distance	All operators (fleet / commercial in particular) encouraged to adopt technology which allows real-time measurement of actual distance and location (off or on road). Incentive is ability to pay on account in arrears, including automatic offsets of on and off road travel. Owners / operators who choose not to install OBUs continue to pay as per current system – in units of 1000km in advance, with hub/odometers used for enforcement purposes.
Basis for measuring weight	No consideration for vehicles up to 3.5 tonnes Operators over 3.5 tonnes to pay based on max permissible on-road gross laden weight.
Location component	All vehicles over 3.5 tonnes and all light vehicles with OBUs installed – refund for off-road use (automatic off-set with appropriate technology)
Time of travel component?	No
Congestion component?	No

Component	Description
Application of technology	Operators encouraged to install on-board units (OBUs) to accurately measure real time distance/location (on-off road). Approved OBUs will be connected to licensed providers of tracking services who will periodically submit data to the billing agency for payment on account.
Enforcement / evasion	Licensed software providers of tracking services will be subject to audit and regulated requirements to report GPS outages etc. Operators connected to this service less likely to be targeted for enforcement stops. May need to consider additional roadside (ANPR/DSRC) technology for verification/enforcement purposes, particularly in urban areas.
Back office processes and costs of compliance	Establish a system for payment of RUC on account for vehicles with OBUs with linkages to software providers for data. No need for vehicles with OBUs to apply for off-road refunds. For vehicles without OBUs, current systems for processing payment and refunds generally to be streamlined (reduce payment options, more online purchases). Off-road refunds for light vehicles no longer possible unless fitted with OBUs.
Future proofed	Encourages installation of approved OBUs into all vehicles, particularly fleet and commercial operators. No diesel tax so no issues with fuel usage as a proxy for distance and weight.

Option B: Excise duty on diesel. Additional RUC for heavy vehicles. Removal of actual weight specification and supplementary RUC licenses.

Component	Description
Underlying Principles	Option B includes the introduction of excise duty on diesel. The introduction of excise duty on diesel provides a proxy charge for distance for light vehicles under 3.5 tonnes which is absent from Option A. This added degree of sophistication does however add complications such as the need for refunds on the excise duty for off-road use. Option B reduces the emphasis for light vehicles on the MVR license fees, which would remain at current levels. The cut-off for vehicles included in RUC is raised from 3.5 tonnes to 6 tonnes.
Heavy goods vehicles / buses	Powered vehicles and trailers over 6 tonnes, with different categories according to axle configurations. Charged excise duty on all diesel purchases. Additional "top-up" RUC based on a system integrating distance and max gross laden weight. Base annual MVR license fee unchanged from current license fees.
Light vehicles not currently paying fuel excise	Pay excise duty on diesel. Vehicles up to 6 tonnes to pay a flat rate annual MVR licence fee with no graduation for weight. Excluded from RUC system. Different scale may be required for electric vehicles.
Basis for measuring distance	HGVs/Buses (RUC) – operators encouraged to adopt technology which allows real-time measurement of actual distance and location (off or on road). Incentive is ability to pay on account in arrears, including automatic offsets of on and off road travel. Operators can still choose to pay as per current system – in advance, with hub-odometers used for enforcement purposes. Not applicable for light vehicles (fuel usage becomes proxy).
Basis for measuring weight	HGVs/Buses (RUC) – operators pay based on max gross laden weight (capped at legal road limit). Light vehicles classified as those with up to 6 tonnes max gross laden weight otherwise weight not applicable.
Location component	HGVs/buses – refund of RUC for off-road use (automatic off-set with appropriate technology) No refund system for light vehicles (MVR license fees or diesel excise duty)
Time of travel component?	No
Congestion component?	No

Component	Description
Application of technology	HGV/bus operators encouraged to install on-board units (OBUs) to accurately measure real time distance/location (on-off road). Approved OBUs will be connected to licensed providers of tracking services who will periodically submit data to the billing agency for payment on account.
Enforcement / evasion	Licensed software providers of tracking services will be subject to audit and regulated requirements to report GPS outages etc. May need to consider additional roadside (ANPR/DSRC) technology for verification/enforcement purposes, particularly in urban areas. Evasion not an issue for light vehicles.
Back office processes and costs of compliance	Establish a system for payment on account for HGVs with OBUs, with linkages to software providers for data. New systems required for refunds of diesel excise duty for off-road travel (HGV/buses only, not available to light vehicles) No need for HGVs with OBUs to apply for off-road refunds of RUC. For HGVs without OBUs, current systems for processing payment and refunds of RUC to be streamlined.
Future proofed	Encourages adoption of approved OBUs by HGVs and buses (but only be vehicles over 6 tonnes). For light vehicles there is no incentive to install OBUs. Emphasis on diesel excise duty may not be sustainable long term with changes in vehicle technology and new forms of motive power.

Option C: Excise duty on diesel. No RUC. Scale of MVR license fees differentiated by weight for all vehicles.

Component	Description
Underlying Principles	Option C removes RUC and introduces excise duty on diesel. Option C is most similar to Option B but without RUC. The emphasis moves to excise duty on diesel as the proxy for distance based charging on all vehicles, with the weight component now largely captured through the graduated MVR license fees for all vehicles.
Heavy goods vehicles / buses	Powered vehicles and trailers over 6 tonnes, with different categories according to axle configurations. Pay excise duty on diesel. No RUC. Replaced by graduated scale of MVR license fees differentiated according to maximum gross laden weight permissible and axle configuration.
Light vehicles not currently paying fuel excise	Vehicles up to 6 tonnes. Pay excise duty on diesel Pay a flat rate annual licence fee with no graduation for weight. Different scale may be required for electric vehicles. Payment options for license fee to spread cost over year.
Basis for measuring distance	Not applicable. Fuel consumption used as a proxy.
Basis for measuring weight	Graduated MVR license fees calculated based on max gross laden weight permissible, with lowest charge on scale set for vehicles 6 tonnes and under
Location component	HGVs/buses – refund of diesel excise duty for off-road use. No refunds for light vehicles.
Time of travel component?	No
Congestion component?	No
Application of technology	None other than what may be considering for back office processing purposes. Operators may choose to install OBUs to provide off-road distance data for diesel excise duty refunds.
Enforcement / evasion	Not a significant concern.

Component	Description
Back office processes and costs of compliance	Need to establish a system for refunds of excise duty for off-road use (inc non-transport operators). For those vehicles which choose to install OBUs this can be used but will also need to allow for a paper-based system for those without OBUs. Systems for processing payment and refunds generally can be streamlined. Compliance cost burden shifted on to other industries.
Future proofed	No incentive to install OBUs unless the vehicle does significant off-road distances (HGVs only). For light vehicles there is no incentive to install OBUs. Emphasis on diesel excise duty may not be sustainable long term with changes in vehicle technology and new forms of motive power.

Appendix B: Assumption Book

DRAFT MODEL ASSUMPTIONS

Government Administration Costs

Item	Status Quo	Option A	Option A1
One-Off Implementation Costs			
NZTA One-Off Marketing Costs	N/A	<p>Northern Gateway Toll Road has budget of \$1m to target one area of the country. This covers explaining the road and the system, encourage use of the road and cost-effective payment channels.</p> <p>Under Option A need to inform all RUC owners but they don't necessarily have to act.</p> <p>Estimated cost of \$2m</p>	<p>Northern Gateway Toll Road has budget of \$1m to target one area of the country. This covers explaining the road and the system, encourage use of the road and cost-effective payment channels.</p> <p>Under Option A1 need to inform all RUC owners but they don't necessarily have to act.</p> <p>Estimated cost of \$2m</p>
NZTA One-Off Call Centre Costs	N/A	<p>Only comparable experience is reaction to ACC increases. NZTA's easiest available RUC stats (used for this assumption) defines light vehicles as less than 4 tonnes.</p> <p>Under Option A assume 30% of light RUC owners will call to check/complain. Assume \$3 cost per call. Assume 190,000 vehicles and 1.25 vehicles per owner so $190,000/1.25*0.3*\\$3$ equals \$136.8k</p>	<p>Only comparable experience is reaction to ACC increases. NZTA's easiest available RUC stats (used for this assumption) defines light vehicles as less than 4 tonnes.</p> <p>Under Option A1 the number of one-off calls would likely be small as the only avenue likely to generate calls is the weight changes and this is unlikely to generate a lot of calls either.</p> <p>Estimate no/negligible change due to publicity.</p>
Cost of Legislation	N/A	<p>Cost of legislation is approximately \$1.05m based on 2.5 FTE's for 2 years and \$50k of expert legal advice. This does not include parliament time but does have an allowance for overheads.</p>	<p>Cost of legislation is approximately \$800k based on the number of staff needed being halfway between the amount needed in Option A and Option C and \$50k of expert legal advice. This does not include parliament time but does have an allowance for overheads.</p>

DRAFT MODEL ASSUMPTIONS

Government Administration Costs

Item	Option B	Option C	Information Source	Information Date Received
One-Off Implementation Costs				
NZTA One-Off Marketing Costs	Northern Gateway Toll Road has budget of \$1m to target one area of the country. This covers explaining the road and the system, encourage use of the road and cost-effective payment channels.	Northern Gateway Toll Road has budget of \$1m to target one area of the country. This covers explaining the road and the system, encourage use of the road and cost-effective payment channels.	Heather	6-Feb-09
	Under Option B need to inform all RUC owners but they don't necessarily have to act. Need to inform all diesel buyers of off-road refund process.	Under Option C need to inform all RUC owners but they don't necessarily have to act. Need to inform all diesel buyers of off-road refund process.	Deloitte estimate using \$1m Northern Gateway Toll Road figure as a base	16-Feb-09
	Estimated cost of \$3m due to all diesel users needing to be informed.	Estimated cost of \$3m due to all diesel users needing to be informed.	Heather	15-Feb-09
NZTA One-Off Call Centre Costs	Only comparable experience is reaction to ACC increases. NZTA's easiest available RUC stats (used for this assumption) defines light vehicles as less than 4 tonnes.	Only comparable experience is reaction to ACC increases. NZTA's easiest available RUC stats (used for this assumption) defines light vehicles as less than 4 tonnes.	Heather	10-Feb-09
	Under Option B assume 5,000 owners of >6T vehicles and 5,000 aggrieved non-vehicle users. Cost is 10,000*\$3 equals \$30k	Assume 25% of RUC owners will call to check/complain. Assume 725,000 vehicles and 330,000 owners so 330,000*0.25*\$3 equals \$247.5k plus 5000 aggrieved non-vehicle users (5,000*\$3 equals \$15k) equals \$262.5k in total	Heather	15-Feb-09
	Cost of legislation is approximately \$1.05m based on 2.5 FTE's for 2 years and \$50k of expert legal advice. This does not include parliament time but does have an allowance for overheads.	Cost of legislation is approximately \$550k based on half the number of staff needed compared to Options A and B and \$50k of expert legal advice. This does not include parliament time but does have an allowance for overheads.	Hilary	17-Feb-09

Item	Status Quo	Option A	Option A1
Implementing Diesel Excise Tax	N/A	N/A	N/A
Implementing OBU Interface Technology	N/A	<p>Cost of developing the NZTA web service interface is \$3m</p> <p>Cost of establishing standards for the interface and security for OBUs is \$1m</p> <p>Total cost of \$4m</p>	<p>Cost of developing the NZTA web service interface is \$3m</p> <p>Cost of establishing standards for the interface and security for OBUs is \$1m</p> <p>Total cost of \$4m</p>
Treasury Cash Flow Costs	N/A	One-off working capital loss noted but not included in model	One-off working capital loss noted but not included in model
Ongoing Costs			
NZTA RUC Administration Costs			
Current Costs	\$17.8m based on current NZTA model and expected volumes for 2008/09.	\$17.8m based on current NZTA model and expected volumes for 2008/09.	\$17.8m based on current NZTA model and expected volumes for 2008/09.

Item	Option B	Option C	Information Source	Information Date Received
Implementing Diesel Excise Tax	Implementation costs to IRD using GST based system would be approximately \$2m.	Implementation costs to IRD using GST based system would be approximately \$2m.	Deloitte	13-Feb-09
Implementing OBU Interface Technology	Cost of developing the NZTA web service interface is \$3m	Cost of developing the NZTA web service interface is \$3m	Tony	12-Feb-09
	Cost of establishing standards for the interface and security for OBUs is \$1m	Cost of establishing standards for the interface and security for OBUs is \$1m		
	Total cost of \$4m	Total cost of \$4m		
Treasury Cash Flow Costs	One-off working capital loss noted but not included in model	One-off working capital loss noted but not included in model	Deloitte Estimate	16-Feb-09
Ongoing Costs				
NZTA RUC Administration Costs				
Current Costs	\$17.8m based on current NZTA model and expected volumes for 2008/09.	\$17.8m based on current NZTA model and expected volumes for 2008/09.	Heather - Reviewed Budget	12-Feb-09

Item	Status Quo	Option A	Option A1
Less: Reduction in Off-Road Refunds	N/A	<p>The cost of administering refunds under the status quo is approximately \$1m.</p> <p>Assume 20% uptake of OBUs by heavy vehicles and that these vehicles account for 50% of off road refunds. Assume decrease in costs is \$1m*0.5 equals \$500k.</p> <p>Off-road refunds are very rare for light vehicles so there is no/negligible change due to this.</p> <p>Sensitivity analysis: 10% OBU uptake - 30% off road refunds - \$300k decrease in costs 30% OBU Uptake - 60% off road refunds - \$600k decrease in costs 40% OBU Uptake - 70% off road refunds - \$700k decrease in costs 50% OBU Uptake - 80% off road refunds - \$800k decrease in costs</p>	<p>The cost of administering refunds under the status quo is approximately \$1m.</p> <p>Assume 20% uptake of OBUs by heavy vehicles and that these vehicles account for 50% of off road refunds. Assume decrease in costs is \$1m*0.5 equals \$500k.</p> <p>Off-road refunds are very rare for light vehicles and light vehicles are still able to claim off road refunds if an OBU is installed so there is no/negligible change due to this.</p> <p>Sensitivity analysis: 10% OBU uptake - 30% off road refunds - \$300k decrease in costs 30% OBU Uptake - 60% off road refunds - \$600k decrease in costs 40% OBU Uptake - 70% off road refunds - \$700k decrease in costs 50% OBU Uptake - 80% off road refunds - \$800k decrease in costs</p>
Less: No Supplementary Licences	N/A	Direct transaction costs of \$344k	Direct transaction costs of \$344k
Less: Decreased Enforcement	N/A	Less 90% of work done by LDV section and 10% of Audit section. Less 80% of work done by investigation section. Based on a straight percentage cut across these programmes, reduction in costs of approx \$2.3m	Less 80% of work done by investigation section. Based on a straight percentage cut across these programmes, reduction in costs of approx \$1.7m
Less: No RUC for Vehicles <3.5T	N/A	75.6% of vehicles are under 3.5T and these vehicles account for 49.9% of licences. Decreases direct transaction costs by \$4.245m and estimated other costs by \$3.702m, total cost decrease of \$7.947m.	N/A

Item	Option B	Option C	Information Source	Information Date Received
Less: Reduction in Off-Road Refunds	The cost of administering refunds under the status quo is approximately \$1m.	N/A (Included under "No RUC for all vehicles")	Assumptions Workshop	2-Feb-09
	Assume 20% uptake of OBUs by heavy vehicles and that these vehicles account for 50% of off road refunds. Assume decrease in costs is \$1m*0.5 equals \$500k.		Tony	10-Feb-09
			RUCRG Meeting	17-Feb-09
			Delaney	12-Feb-09
	Off-road refunds are very rare for light vehicles as well as vehicles between 3.5T and 6T so there is no/negligible change due to this.			
	Sensitivity analysis: 10% OBU uptake - 30% off road refunds - \$300k decrease in costs 30% OBU Uptake - 60% off road refunds - \$600k decrease in costs 40% OBU Uptake - 70% off road refunds - \$700k decrease in costs 50% OBU Uptake - 80% off road refunds - \$800k decrease in costs			
Less: No Supplementary Licences	Direct transaction costs of \$344k	N/A (Included under "No RUC for all vehicles")	Heather	6-Feb-09
Less: Decreased Enforcement	Less 90% of work done by LDV section and 10% of Audit section. Less 80% of work done by investigation section. Based on a straight percentage cut across these programmes, reduction in costs of approx \$2.3m.	N/A (Included under "No RUC for all vehicles")	Delaney	12-Feb-09
			Delaney	16-Feb-09
Less: No RUC for Vehicles <3.5T	N/A	N/A	Heather	12-Feb-09

Item	Status Quo	Option A	Option A1
Less: No RUC for Vehicles <6T	N/A	N/A	N/A
Less: No RUC for all Vehicles	N/A	N/A	N/A
NZTA MVR Licence Costs	<p>\$6.50 admin fee per licence (plus other admin fees and recoveries) is set at right level to cover the total cost of MVR</p> <p>Number of MVR licence transactions per year is 5,648,648</p> <p>Total cost is \$6.50*5,648,648 equals \$36.716m</p>	<p>If licence fee increases by approx \$800 pa for vehicles less than 3.5T, then assume people will buy 2 extra licences per year than under the status quo so 3.3 licences per year (current average is 1.3 transactions per person)</p> <p>There are 500,000 vehicles less than 4T. There aren't many between 3.5T and 4T so assume 500,000 vehicles less than 3.5T. Increased number of transactions is 1m. This is similar to the decrease in RUC transactions.</p> <p>Increases direct transaction costs by \$3.521m and estimated other costs increase by \$3.702m (same as the decrease from RUC). Overall increase in costs is \$7.223m an total cost is \$36.716m+\$7.223m equals \$43.939m</p>	<p>Same as status quo</p> <p>Total cost is \$36.716m</p>
Other Enforcement Costs			
Police Costs	\$4m per year	\$4m (Costs will not change much and if they do it is likely that they will be re-allocated elsewhere)	\$4m (Costs will not change much and if they do it is likely that they will be re-allocated elsewhere)
MOT RUC Costs	\$1m in 2008/09	\$1m	\$1m
NZTA State Highways Infrastructure Maintenance	\$300k	\$300k	\$300k

Item	Option B	Option C	Information Source	Information Date Received
Less: No RUC for Vehicles <6T	Includes all vehicles <6t. Decreases direct transaction costs by \$4.565m and estimated other costs by \$3.96m, total cost decrease of \$8.525m.	N/A	Heather	12-Feb-09
Less: No RUC for all Vehicles	N/A	\$17.8m	Heather - Reviewed Budget	12-Feb-09
NZTA MVR Licence Costs	Same as status quo	Increased ticket prices for >6t, but have assumed minimal change in behaviour.	NZTA	6-Feb-09
	Total cost is \$36.716m	So same cost of status quo of \$36.716m.	NZTA	12-Feb-09
			Heather	19-Feb-09
Other Enforcement Costs				
Police Costs	\$4m (Costs will not change much and if they do it is likely that they will be re-allocated elsewhere)	\$4m (Costs will not change much and if they do it is likely that they will be re-allocated elsewhere)	Memo sent from Hilary to RUCRG	7-Nov-08
MOT RUC Costs	\$1m	N/A	Memo sent from Hilary to RUCRG	7-Nov-08
NZTA State Highways Infrastructure Maintenance	\$300k	\$300k	Memo sent from Hilary to RUCRG	7-Nov-08

Item	Status Quo	Option A	Option A1
Diesel Excise Costs			
Administration Costs of Diesel Excise	N/A	N/A	N/A
IRD Cost of Diesel Refund System	N/A	N/A	N/A
Costs of New OBU Technology			
Administration Costs of OBUs	N/A	These are covered under monthly lease price paid by vehicle operator	These are covered under monthly lease price paid by vehicle operator

Evasion/Leakage			
Item	Status Quo	Option A	Option A1
Lost revenue from RUC Evasion - Heavy Vehicles	\$30m for 2009 for heavy vehicles	<p>Estimate of 75% weight evasion and 25% distance evasion. Assume weight evasion disappears due to simplification of RUC system.</p> <p>Assume 20% uptake of OBUs by heavy vehicles so that there is no RUC evasion from these vehicles.</p> <p>Evasion is estimated as $\\$30m * 0.25 * (1 - 0.2)$ equals \$6m</p> <p>Sensitivity Analysis: 10% OBU uptake: \$6.75m evasion 30% OBU uptake: \$5.25m evasion 40% OBU uptake: \$4.5m evasion 50% OBU uptake: \$3.75m evasion</p>	<p>Estimate of 75% weight evasion and 25% distance evasion. Assume weight evasion disappears due to simplification of RUC system.</p> <p>Assume 20% uptake of OBUs by heavy vehicles so that there is no RUC evasion from these vehicles.</p> <p>Evasion is estimated as $\\$30m * 0.25 * (1 - 0.2)$ equals \$6m</p> <p>Sensitivity Analysis: 10% OBU uptake: \$6.75m evasion 30% OBU uptake: \$5.25m evasion 40% OBU uptake: \$4.5m evasion 50% OBU uptake: \$3.75m evasion</p>

Item	Option B	Option C	Information Source	Information Date Received
Diesel Excise Costs				
Administration Costs of Diesel Excise	\$25k	\$25k	Hilary from visit to Customs	4-Feb-09
IRD Cost of Diesel Refund System	The costs to IRD would be small due to current systems and staff being used. Assume \$1m ongoing costs per year as a contingency.	The costs to IRD would be small due to current systems and staff being used. Assume \$1m ongoing costs per year as a contingency.	Deloitte	13-Feb-09
Costs of New OBU Technology				
Administration Costs of OBUs	These are covered under monthly lease price paid by vehicle operator	These are covered under monthly lease price paid by vehicle operator	Tony	9-Feb-09

Evasion/Leakage				
Item	Option B	Option C	Information Source	Information Date Received
Lost revenue from RUC Evasion - Heavy Vehicles	Estimate of 75% weight evasion and 25% distance evasion. Assume weight evasion disappears due to simplification of RUC system. Assume 20% uptake of OBUs by heavy vehicles so that there is no RUC evasion from these vehicles. Assume \$447m of diesel excise collected from heavy vehicles. Since \$652m is currently collected in RUC from heavy vehicles assume \$205m is collected in RUC. Evasion is estimated at $\$30m * 0.25 * (1 - 0.2) * (205/652)$ equals \$1.887m Sensitivity Analysis: 10% OBU uptake: \$2.122m evasion 30% OBU uptake: \$1.651m evasion 40% OBU uptake: \$1.415m evasion 50% OBU uptake: \$1.179m evasion	No RUC so nil	RUCRG Meeting	17-Feb-09
			Assumptions Workshop	2-Feb-09
			Jonathan	7-Feb-09
			Tony	10-Feb-09

Item	Status Quo	Option A	Option A1
Lost revenue from RUC Evasion - Light Vehicles	\$13m	No RUC so nil	<p>Assume 20% uptake of OBUs by light vehicles so that there is no RUC evasion from these vehicles.</p> <p>Evasion is $\\$13m \times (1 - 0.2)$ equals \$10.4m</p> <p>Sensitivity Analysis: 10% OBU uptake: \$11.7m evasion 30% OBU uptake: \$9.1m evasion 40% OBU uptake: \$7.8m evasion 50% OBU uptake: \$6.5m evasion</p>
Evasion of MVR Licence Fees	<p>88% of vehicles are MVR licence compliant and 98.5% within 12 months</p> <p>\$190m is currently collected in MVR licence revenue. If 1.5% of this is evaded, total evasion is $0.015 \times 190m$ equals \$2.85m</p>	<p>Assume \$222m of RUC currently paid by light vehicles is covered under the MVR.</p> <p>If 3% is evaded (due to increased MVR licence fee for light vehicles) the total evasion under option A is $0.03 \times (\\$222m + \\$190m)$ equals \$12.36m</p>	Same as status quo so \$2.85m
Lost revenue from Diesel Evasion - % of Evasion	N/A	N/A	N/A
Lost revenue from Diesel Evasion - \$ Amount of Off Road Diesel Consumed	N/A	N/A	N/A

Item	Option B	Option C	Information Source	Information Date Received
Lost revenue from RUC Evasion - Light Vehicles	No RUC so nil	No RUC so nil	NZTA	2-Feb-09
			Tony	16-Feb-09
Evasion of MVR Licence Fees	Same as status quo so \$2.85m	Assume \$447m of diesel excise collected from heavy vehicles. Since \$652m is currently collected in RUC from heavy vehicles assume \$205m is collected in MVR.	NZTA	5-Feb-09
			RUCRG meeting	11-Feb-09
			RUCRG meeting	17-Feb-09
			Memo sent from Hilary to RUCRG	2-Oct-08
			Jonathan	7-Feb-09
Lost revenue from Diesel Evasion - % of Evasion	2%	2%	Deloitte estimate from NZTA and Jonathan's information	10-Feb-09
			RUCRG meeting	11-Feb-09
Lost revenue from Diesel Evasion - \$ Amount of Off Road Diesel Consumed	Estimate of \$416.832m based on diesel excise set at 40c per litre.	Estimate of \$416.832m based on diesel excise set at 40c per litre.	Jonathan	7-Feb-09
	Total evasion is 0.02*416.832m equals \$8.33664m	Total evasion is 0.02*416.832m equals \$8.33664m		

Item	Status Quo	Option A	Option A1
Revenue Leakage from OBU Technology	N/A	<p>Estimate of 2.5%</p> <p>Assume 20% uptake of OBUs by heavy vehicles</p> <p>Lost revenue is $2.5\% * 20\% * \\$652\text{m}$ (heavy RUC revenue) equals \$3.26m</p> <p>Sensitivity Analysis : 10% OBU uptake: \$1.63m lost rev 30% OBU uptake: \$4.89m lost rev 40% OBU uptake: \$6.52m lost rev 50% OBU uptake: \$8.15m lost rev</p>	<p>Estimate of 2.5%</p> <p>Assume 20% uptake of OBUs by both heavy and light vehicles</p> <p>Lost revenue is $2.5\% * 20\% * \\$874\text{m}$ (current RUC revenue) equals \$4.37m</p> <p>Sensitivity Analysis: 10% OBU uptake: \$2.185m lost rev 30% OBU uptake: \$6.555m lost rev 40% OBU uptake: \$8.74m lost rev 50% OBU uptake: \$10.925m lost rev</p>

Vehicle Operator Compliance Costs			
Item	Status Quo	Option A	Option A1
One-Off Upfront Costs			
Cost of OBUs	N/A	OBUs are voluntary so assume operators use OBUs due to the benefits outweighing the costs. So cost of OBUs not included in the model	OBUs are voluntary so assume operators use OBUs due to the benefits outweighing the costs. So cost of OBUs not included in the model
Cash Flow	N/A	One-off working capital gain noted but not included in model	One-off working capital gain noted but not included in model

Item	Option B	Option C	Information Source	Information Date Received
Revenue Leakage from OBU Technology	Estimate of 2.5%	N/A as no RUC	Tony	10-Feb-09
	Assume 20% uptake of OBUs by heavy vehicles		Memo sent from Hilary to RUCRG	2-Oct-08
	Assume \$447m of diesel excise collected from heavy vehicles. Since \$652m is currently collected in RUC from heavy vehicles assume \$205m is collected in RUC.		Tony	16-Feb-09
	Lost revenue is $2.5\% * 20\% * \$205m$ (heavy RUC revenue) equals \$1.025m			
	Sensitivity Analysis:			
	10% OBU uptake: \$0.5125m lost rev			
	30% OBU uptake: \$1.5375m lost rev			
	40% OBU uptake: \$2.05m lost rev			
	50% OBU uptake: \$2.5625m lost rev			

Vehicle Operator Compliance Costs

Item	Option B	Option C	Information Source	Information Date Received
One-Off Upfront Costs				
Cost of OBUs	OBUs are voluntary so assume operators use OBUs due to the benefits outweighing the costs. So cost of OBUs not included in the model	OBUs are voluntary so assume operators use OBUs due to the benefits outweighing the costs. So cost of OBUs not included in the model	RUCRG meeting	11-Feb-09
Cash Flow	One-off working capital gain noted but not included in model	One-off working capital gain noted but not included in model	Deloitte Estimate	16-Feb-09

Ongoing Costs

RUC Administration Costs

Item	Status Quo	Option A	Option A1
Hours per Annum Spent on Paperwork by Businesses	912,483	<p>RUC by light vehicles comprises 49.9% of RUC licences. Due to no RUC on light vehicles assume that the number of transactions decreases by 49.9% and this is partly taken into account by the paperwork by individuals disappearing.</p> <p>Assume 20% uptake of OBUs by heavy vehicles</p> <p>Number of business hours equals $(912,483 + 186,883) * (1 - 0.499) * (1 - 0.2)$ equals 440,626 hours</p> <p>Sensitivity Analysis: 10% OBU uptake: 495,704 hours 30% OBU uptake: 385,548 hours 40% OBU uptake: 330,469 hours 50% OBU uptake: 275,391 hours</p>	<p>Assume 20% uptake of OBUs by heavy vehicles</p> <p>Number of business hours equals $912483 * (1 - 0.2)$ equals 729,986</p> <p>Sensitivity Analysis: 10% OBU uptake: 821235 hours 30% OBU uptake: 638738 hours 40% OBU uptake: 547490 hours 50% OBU uptake: 456242 hours</p>
Hours per Annum Spent on Paperwork by Individuals	186,883	<p>No RUC for light vehicles so nil</p>	<p>Assume 20% uptake of OBUs by light vehicles</p> <p>Number of hours equals $186883 * (1 - 0.2)$ equals 149,506</p> <p>Sensitivity Analysis: 10% OBU uptake: 168,195 hours 30% OBU uptake: 130,818 hours 40% OBU uptake: 112,130 hours 50% OBU uptake: 93,442 hours</p>

Ongoing Costs

RUC Administration Costs

Item	Option B	Option C	Information Source	Information Date Received
Hours per Annum Spent on Paperwork by Businesses	RUC by vehicles <6T comprises 53.7% of RUC licences. Due to no RUC on vehicles <6T assume that the number of transactions decreases by 53.7% and this is partly taken into account by the paperwork by individuals disappearing.	N/A	Research NZ presentation slides	10-Feb-09
	Assume 20% uptake of OBUs by heavy vehicles		NZTA	12-Feb-09
	Number of business hours equals $(912,483 + 186,883) * (1 - 0.537) * (1 - 0.2)$ equals 407,205 hours		Tony	10-Feb-09
	Sensitivity Analysis: 10% OBU uptake: 458,106 hours 30% OBU uptake: 356,305 hours 40% OBU uptake: 305,404 hours 50% OBU uptake: 254,503 hours		Deloitte estimate from Research NZ and NZTA information	12-Feb-09
Hours per Annum Spent on Paperwork by Individuals	No RUC for light vehicles so nil	N/A	Research NZ presentation slides	10-Feb-09

Item	Status Quo	Option A	Option A1
Average Transport Sector Wage	19.63 Total cost is $(912483+186883)*19.63$ equals \$21.58m	19.63 Total cost is $440626*19.63$ equals \$8.649m Sensitivity Analysis: 10% OBU uptake: \$9.731m 30% OBU uptake: \$7.568m 40% OBU uptake: \$6.487m 50% OBU uptake: \$5.406m	19.63 Total cost is $(729986+149506)*19.63$ equals \$17.264m Sensitivity Analysis: 10% OBU uptake: \$19.423m 30% OBU uptake: \$15.106m 40% OBU uptake: \$12.948m 50% OBU uptake: \$10.790m
MVR Administration Costs			
Number of Transactions	Number of MVR licence transactions per year is 5,648,648	If licence fee increases by approx \$800 pa for vehicles less than 3.5T, then assume people will buy 2 extra licences per year than under the status quo so 3.3 licences per year (current average is 1.3 transactions per person) There are 500,000 vehicles less than 4T. There aren't many between 3.5T and 4T so assume 500,000 vehicles less than 3.5T. Increased number of transactions is 1m. This is similar to the decrease in RUC transactions. Number of MVR licence transactions per year is $5,648,648+1,000,000$ equals 6,648,648	Number of MVR licence transactions per year is 5,648,648
Time Spent per Transaction	10 minutes based on simplest RUC transaction types from Research NZ report	10 minutes based on simplest RUC transaction types from Research NZ report	10 minutes based on simplest RUC transaction types from Research NZ report
Average Transport Sector Wage	19.63 Total cost is $5648648*(1/6)*19.63$ equals \$18.480m	19.63 Total cost is $6648648*(1/6)*19.63$ equals \$21.752m	19.63 Total cost is $5648648*(1/6)*19.63$ equals \$18.480m

Item	Option B	Option C	Information Source	Information Date Received
Average Transport Sector Wage	19.63	N/A	Research NZ presentation slides	10-Feb-09
	Total cost is 407205*19.63 equals \$7.993m Sensitivity Analysis: 10% OBU uptake: \$8.993m 30% OBU uptake: \$6.994m 40% OBU uptake: \$5.995m 50% OBU uptake: \$4.996m		Deloitte estimate from Research NZ and NZTA information	12-Feb-09
MVR Administration Costs				
Number of Transactions	Same as status quo (5,648,648)	Increased ticket prices for >6t, but have assumed minimal change in behaviour.	NZTA	12-Feb-09
		So number of transactions is the same as the status quo (5,648,648)	Heather	19-Feb-09
Time Spent per Transaction	10 minutes based on simplest RUC transaction types from Research NZ report	10 minutes based on simplest RUC transaction types from Research NZ report	Deloitte estimate from Research NZ report	30-Jan-08
Average Transport Sector Wage	19.63	19.63	Research NZ - Average Transport Sector Wage from Stats NZ	4-Feb-09
	No change in total cost from status quo (\$18.480m)	No change in total cost from status quo (\$18.480m)	Deloitte estimate from Research NZ and NZTA information	12-Feb-09

Item	Status Quo	Option A	Option A1
Cost of Applying for Refunds Number of Transactions	Number of off road refund RUC transactions per year is 166,000	<p>Assume 20% uptake of OBUs by heavy vehicles and that these vehicles account for 50% of off road refunds. Assume number of manual refunds is 83,000</p> <p>Off-road refunds are very rare for light vehicles so there is no/negligible change due to this.</p> <p>Sensitivity analysis: 10% OBU Uptake - 30% off road refunds - 116,200 refunds 30% OBU Uptake - 60% off road refunds - 66,400 refunds 40% OBU Uptake - 70% off road refunds - 49,800 refunds 50% OBU Uptake - 80% off road refunds - 33,200 refunds</p>	<p>Assume 20% uptake of OBUs by heavy vehicles and that these vehicles account for 50% of off road refunds. Assume number of manual refunds is 83,000</p> <p>Off-road refunds are very rare for light vehicles and light vehicles are still able to claim off road refunds if an OBU is installed so there is no/negligible change due to this.</p> <p>Sensitivity analysis: 10% OBU Uptake - 30% off road refunds - 116,200 refunds 30% OBU Uptake - 60% off road refunds - 66,400 refunds 40% OBU Uptake - 70% off road refunds - 49,800 refunds 50% OBU Uptake - 80% off road refunds - 33,200 refunds</p>
Time Spent per Transaction	32 minutes based on weighted average from Research NZ report	32 minutes based on weighted average from Research NZ report	32 minutes based on weighted average from Research NZ report

Item	Option B	Option C	Information Source	Information Date Received
Cost of Applying for Refunds Number of Transactions	Assume 20% uptake of OBUs by heavy vehicles and that these vehicles account for 50% of off road refunds. Assume number of manual RUC refunds is 83,000	RUC refunds disappear as there is no RUC	NZTA	12-Feb-09
	Off road refunds are very rare for light vehicles as well as for vehicles between 3.5 and 6 tonnes so assume no/negligible change due to this.	Number of enterprise units in the categories identified by the RUCRG as eligible for refunds is 123,312.	Tony	10-Feb-09
		Assume bi-monthly refund process	Hilary from StatsNZ data and discussions with Tony	10-Feb-09
		Assume number of transactions is 123,312*6 equals 739,872	RUCRG Meeting	17-Feb-09
	Sensitivity analysis: 10% OBU Uptake - 30% off road refunds - 116,200 RUC refunds			
	30% OBU Uptake - 60% off road refunds - 66,400 RUC refunds			
	40% OBU Uptake - 70% off road refunds - 49,800 RUC refunds			
	50% OBU Uptake - 80% off road refunds - 33,200 RUC refunds			
	Number of enterprise units in the categories identified by the RUCRG as eligible for diesel refunds is 123,312.			
	Assume bi-monthly diesel refund process			
Assume number of diesel refund transactions is 123,312*6 equals 739,872				
Time Spent per Transaction	32 minutes for RUC refunds	16 minutes for diesel refunds	Deloitte estimate from Research NZ report	30-Jan-08
	16 minutes for diesel refunds		Deloitte estimate based on RUCRG meeting	17-Feb-09

Item	Status Quo	Option A	Option A1
Average Transport Sector Wage	19.63 Total cost is $166000 \times (32/60) \times 19.63$ equals \$1.738m	19.63 Total cost is $83,000 \times (32/60) \times 19.63$ equals \$869k Sensitivity Analysis: 10% OBU uptake: \$1.217m 30% OBU uptake: \$695k 40% OBU uptake: \$521k 50% OBU uptake: \$348k	19.63 Total cost is $83,000 \times (32/60) \times 19.63$ equals \$869k Sensitivity Analysis: 10% OBU uptake: \$1.217m 30% OBU uptake: \$695k 40% OBU uptake: \$521k 50% OBU uptake: \$348k
Removal of Off-Road Refunds	N/A	There will be increased costs for operators who currently claim off-road refunds and will not be able to under this option. However, overall there will not be increased costs so this is more of an equity issue and not included in the model	There will be increased costs for light vehicle operators who currently claim off-road refunds and will not be able to under this option if they do not install an OBU. However, overall there will not be increased costs so this is more of an equity issue and not included in the model

Third Party Costs			
Item	Status Quo	Option A	Option A1
Fuel Supply Chain Costs	N/A	N/A	N/A

Item	Option B	Option C	Information Source	Information Date Received
Average Transport Sector Wage	19.63	19.63	Research NZ - Average Transport Sector Wage from Stats NZ	4-Feb-09
	Total cost is $83000 \times (32/60) \times 19.63 + 739872 \times (16/60) \times 19.63$ equals \$4.742m	Total cost is $739872 \times (16/60) \times 19.63$ equals \$3.873m	Deloitte estimate	12-Feb-09
	Sensitivity Analysis:			
	10% OBU uptake: \$5.090m			
	30% OBU uptake: \$4.568m			
	40% OBU uptake: \$4.394m			
	50% OBU uptake: \$4.221m			
Removal of Off-Road Refunds	There will be increased costs for operators who currently claim off-road refunds and will not be able to under this option. However, overall there will not be increased costs so this is more of an equity issue and not included in the model	There will be increased costs for operators who currently claim off-road refunds and will not be able to under this option. However, overall there will not be increased costs so this is more of an equity issue and not included in the model	N/A	N/A

Third Party Costs

Item	Option B	Option C	Information Source	Information Date Received
Fuel Supply Chain Costs	Discussions with oil companies have begun but no indication of change in costs. Would likely be small, maybe similar % increase as Customs	Discussions with oil companies have begun but no indication of change in costs. Would likely be small, maybe similar % increase as Customs	Hilary	9-Feb-09

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