



**Preliminary Cost Benefit
Analysis of Driver Licensing
Reform:
Licence Application, Testing
and Renewal**

**Report to Ministry of Transport and
New Zealand Transport Agency**

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Acronyms and Abbreviations

AA	Automobile Association
CBA	Cost benefit analysis
DLA	Driver licensing agent
GDLS	Graduated Driver Licensing System
MOT	Ministry of Transport
NZTA	New Zealand Transport Agency
PV	Present value
VINZ	Vehicle Inspection New Zealand
VTNZ	Vehicle Testing New Zealand

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Executive Summary

The Ministry of Transport (MOT) and the New Zealand Transport Agency (NZTA) are reviewing the driver licensing system in New Zealand to evaluate possible changes to improve the regulatory settings for driver licensing. Castalia has been engaged to evaluate the costs and benefits of possible changes to the requirements in licence application, testing, and renewals processes.

This report assesses the costs and benefits of two possible changes relating to licence application, testing, and renewals processes. These areas are listed in Table ES.1. We quantify costs and benefits, where possible. However, considerable uncertainty exists on at least one category of cost or benefit, which prevents net impacts from being directly estimated. Table ES.1 presents the maximum costs or minimum benefits required for the change to result in a net benefit.

Implementing changes to allow for online licensing is linked to changes in eyesight test frequency. This means that implementing the ‘foundational’ changes might be worthwhile, even if these changes do not provide net benefits if assessed on a stand-alone basis.

Table ES.1: Summary of the Changes Considered and their Net Impacts

Issue Area	Change delivering highest net benefit	Net benefit / Condition needed for net benefit	Comment
Vision test frequency	Only require eyesight test at first application (for a learners licence)	? Provides net benefits if social cost of injuries from ‘defective vision’ crashes does not increase by more than 10 percent	Change required to enable online licensing services
Online licence services, including renewals and endorsement applications	Only require eyesight test at first application (for a learners licence) and enable online services, including licence renewals and endorsement applications	? Provides net benefits if social cost of injuries from ‘defective vision’ crashes does not increase by more than 13.2 percent	Benefits of online services mean safety risk is less likely to outweigh costs than only removing vision testing

Disclaimer

The Driver Licensing Review Discussion Paper was drafted after this preliminary CBA was completed. While this helps to provide the discussion paper with additional direction on policy options, this also means that in some places the options evaluated in this report do not align exactly with options in discussion paper. We also note that the analysis and findings presented in this report are preliminary.

The options and the analysis will be refined and updated in the final CBA based on responses and new information gathered during consultation.

1 Introduction

The Ministry of Transport (MOT) is working with the New Zealand Transport Agency (NZTA) to reform the rules that govern the driver licensing system in New Zealand. MOT and NZTA have engaged Castalia to assess the costs and benefits of the changes being considered by the reform team.

The reform team are considering changes to licence classes and endorsements, and licence application testing and renewal. This report investigates the costs and benefits associated with driver licence application, testing, and renewals. This report describes:

- The rationale for changing the current settings for applying for, testing and renewing driver licences (Section 2)
- The costs and benefits of changes being considered, supported by quantitative estimates of the relevant effects where possible (Section 3).

The purpose of this report is to inform a discussion paper and consultation process on the driver licensing review. The analysis and findings are, therefore, preliminary, and will be updated based on responses and new information gathered during consultation.

2 Rationale for Changing Application, Testing, and Renewal Processes

The current processes to obtain and renew a driver licence aim to ensure that only capable and experienced drivers are able to gain a licence and lawfully drive on New Zealand roads. To achieve this road safety objective, licensing processes need to:

- Test for skill and promote driving experience
- Verify identity—assuring that the person sitting the relevant test and being issued the relevant licence is the same person identified on the licence.¹

Technological developments provide opportunities to save costs in licence application and renewals processes, without compromising on safety.

Table 2.1 compares the existing regulatory settings and the rationale for these processes to the possible changes to licence application, testing, and renewal processes that are being considered.

¹ The ability for licences to accurately verify identity also has flow on impacts in other industries, not related to driving, that rely on driver licences for this purpose, such as banking.

Table 2.1: Comparison of Rationale for Current Processes and Possible Changes

Current licensing processes	Rationale for current processes	Problem with current processes	Possible change(s) evaluated
Eyesight tests conducted at each graduated driver licensing system (GDLS) stage and 10-year renewals	Ensures licence holders' eyesight or eyesight correction is sufficient to drive safely	<ul style="list-style-type: none"> ▪ Imposes compliance cost on licence applicants with limited evidence on safety benefits of eyesight testing ▪ Creates a barrier for online licensing 	<ul style="list-style-type: none"> ▪ Only require eyesight test at first application (for a learners licence) ▪ Only require eyesight test at first application (for a learners licence) and at renewal closest to age 50 ▪ (Note: Vision testing requirements for drivers 75 years and over would not change under either option)
Processes to apply for and renew licences are largely in person	<ul style="list-style-type: none"> ▪ Enables verification of identity ▪ Allows eyesight to be tested 	<ul style="list-style-type: none"> ▪ Does not respond to social and technological changes ▪ Creates compliance costs for driver licence holders ▪ Does not promote goal of more online government services 	<ul style="list-style-type: none"> ▪ Enable online services, including licence renewals and endorsement applications ▪ (Note: Use of online services would change based on vision testing requirements)

3 Cost Benefit Analysis

Each of the changes being considered generates costs and benefits. This section evaluates these effects, and quantifies the likely impacts where possible. Assumptions used in CBA are listed in Appendix A, together with estimates of a plausible range for each assumption. Table 3.1 summarises the costs and benefits of each change being considered.

Two options are considered within each area (vision testing and online licensing). These options generally have the same categories of costs and benefits, and we examine the costs and benefits of two options in the same section noting any differences in estimated effects. The net benefits for each option are reported separately in Table 3.1.

This preliminary CBA does not include general costs associated with any policy changes, such as the costs from additional advertising or publicity campaigns, or from support services, such as additional call centre staff. These costs will be further investigated and incorporated into the CBA in the next stage of the process.

Table 3.1: Summary of the Costs and Benefits of the Changes Considered

Section	Issue area	Possible change	Costs	Benefits	Condition needed to achieve net benefit
3.1	Vision testing	1) Only require eyesight test at first application (learners)	Possible safety risk from a lower opportunity to notice deteriorated vision over a 60-year period	<ul style="list-style-type: none"> ▪ Time saving for all GDLS applications and renewals after first application ▪ Enables online licensing 	If social cost of injuries from ‘defective vision’ crashes does not increase by more than 10 percent
		2) Only require eyesight test at first application (learners) and renewals closest to 50	Possible safety risk from inability to catch deteriorated vision over a 25 to 35-year period	<ul style="list-style-type: none"> ▪ Time saving for GDLS applications and renewals after first application (except for renewal closest to 50) ▪ Enables online licensing, aside from eyesight test at renewal closest to 50 	If social cost of injuries from ‘defective vision’ crashes does not increase by more than 7.7 percent
3.2	Online licensing	1) Provide online service delivery, with eyesight certificate only required at first application	<ul style="list-style-type: none"> ▪ Initial capital investment in IT infrastructure ▪ Ongoing IT maintenance and support costs ▪ Possible safety risk from a lower opportunity to notice deteriorated vision over a 60-year period 	<ul style="list-style-type: none"> ▪ Time savings from avoiding visits to driver licensing agent ▪ Processing savings ▪ Administrative savings from rationalising licensing branches 	If social cost of injuries from ‘defective vision’ crashes does not increase by more than 13.2 percent

Section	Issue area	Possible change	Costs	Benefits	Condition needed to achieve net benefit
		2) Provide online service delivery, with eyesight certificate only required at first application and at renewal closest to 50	<ul style="list-style-type: none"> ▪ Initial capital investment in IT infrastructure ▪ Ongoing IT support costs ▪ Safety risk from inability to catch deteriorated vision over a 25 to 35-year period 	<ul style="list-style-type: none"> ▪ Time savings from avoiding visits to driver licensing agent for renewals other than for renewal nearest to 50 years of age ▪ Smaller time saving (either for eyesight certificate or for other aspects of renewal) at renewal closest to 50 ▪ Processing savings ▪ Administrative savings from rationalising licensing branches 	If social cost of injuries from 'defective vision' crashes does not increase by more than 9.3 percent

3.1 Reducing the Frequency of Vision Testing

Vision tests are required each time an individual applies for a new licence class or endorsement or renews their driver licence. To prove their vision is up to the standard required, drivers can either submit an eyesight certificate or medical certificate (which specifically covers eyesight for driving) that is no more than 60 days old, or have an eye test at a driver licensing agent (DLA).

These requirements mean that drivers must have eyesight tests at:

- Each application stage of the GDLS
 - Learner, restricted, full stages for Class 1 (car) and 6 (motorcycle)
 - Learner and full stages for Classes 2-5 (vans and heavy vehicles), and
- At every licence renewal:
 - Every 10 years for drivers under the age of 75
 - For drivers at the age of 75
 - For drivers at the age of 80
 - Every 2 years for drivers over the age of 80.

Around 650,000 eyesight tests (including re-tests) were conducted during the 12 months ending 30 June 2014 across all of these licence categories.

The eyesight tests impose compliance costs on drivers progressing through the GDLS (with several eyesight tests within a short timeframe) and when renewing their licence. Requirements for in-person eyesight tests are also an obstacle to online licensing.

To unlock compliance cost savings and to enable online licensing, the review has identified two potential options to only require eyesight testing at:

- **The first application only:** Require an eyesight test at the first application (learners licence) and no eyesight tests required until driver is 75 or over
- **The first application and closest licence renewal to the age of 50:** Require an eyesight test at the first application (learners licence) and at the licence renewal where the driver is closest to 50 years old. Outside of these requirements, no further eyesight tests are required until the driver is 75 or over.

Under both of the options, the requirements for eyesight tests at renewals for older drivers (renewal at 75 and 80, and every 2 years over the age of 80), and for commercial drivers will not be affected.

3.1.1 Costs of reducing the frequency of vision testing

Vision tests are conducted to determine whether a driver has adequate eyesight to drive without posing a safety risk. Both options have the potential to impose a higher level of safety risk by removing opportunities to detect deterioration in a driver's vision.

While New Zealand currently tests driver vision relatively frequently (at each licence renewal every 10 years), eyesight deterioration can still occur between licence renewals. This is shown by the fact that the vision tests administered by DLAs do identify drivers that require vision correction. The impacts of poor vision are also shown by the injuries from crashes that occur where defective vision is cited as a contributing factor. From 2009 to 2014, crashes with an average of 1.8 fatalities, 4.6 serious injuries, and 25.8 minor injuries

cited defective vision as a contributing factor.² These injuries generate an average social cost of \$12.3 million per year.³

Assessing the potential safety risk from reduced vision testing

If vision is only tested at the first licence application, a driver's vision could go unchecked for up to 60 years. This time period could be up to 35 years between the first application and the renewal at age 50 under the second option, with a further 15 years between that test and entering the eyesight testing regime for older drivers at the age of 75.

In reality, many drivers who need corrected vision will visit their doctor or optometrist regardless of the eyesight testing requirements imposed by the driver licensing system. Some drivers will visit medical professionals as part of regular monitoring of their health (and eyesight). Drivers who take personal responsibility for their vision are unlikely to pose additional safety risks under either of the options being considered in this review.

What is more relevant to this CBA is whether having processes to regularly test vision results in fewer crashes and injuries. Research commissioned by NZTA has looked at crash rates before and after vision correction conditions were placed on drivers—in an effort to isolate any safety effects from vision testing. This research found that drivers who face new requirements to have their vision corrected (either by identifying this need at the driver licensing agent or at a doctor's appointment) do not have a significantly different crash risk than when they did not require vision correction to hold a licence.

While this finding suggests that vision correction conditions may not change the social cost of injuries from road crashes, further analysis is required to conclude that existing eyesight tests have no impact on road safety risks. There are a range of methodological challenges in trying to isolate these effects, including:

- **Timeframes for analysis.** The NZTA research mentioned above included a relatively small number of crashes 3 years before and after a licence condition was imposed for vision correction. It may not be appropriate to extrapolate the results of this study forward over a long period (25 to 35 years)—for example, if crashes caused by defective vision only happen 5-10 years after a licence condition is imposed
- **Compliance with licence conditions.** It may be unknown whether drivers with vision correction conditions actually wear corrective lenses at the time of a crash. Having a licence condition does not automatically mean the condition is followed
- **Using correction without a licence condition.** In a similar way, drivers that do not have a licence condition may nevertheless wear corrective lenses. These drivers may be conscious that their eyesight will need to be tested at regular intervals – and are therefore content to wait until their next licence renewal for an eyesight test. In such cases, the licence condition would not be expected to change safety risk.
- **Defective vision in the control group.** Drivers without a licence condition may have developed defective vision after their licence renewal. Again, this

² Averages determined using Crash Analysis System data from 2009 to 2014. Available at <http://www.nzta.govt.nz/resources/crash-analysis-system-data/index.html>. Note that defective vision is likely to under-reported in official crash data as a contributing factor compared to other crash types (for example, speed or alcohol).

³ MOT, The Social Cost of Road Crashes and Injuries 2014. Available at <http://www.transport.govt.nz/assets/Uploads/Research/Documents/Social-Cost-June-2014-update.pdf>.

would mean that we might not expect much difference between the two groups of drivers in an analysis of crash statistics

- **Driver characteristics.** Drivers with a licence condition to wear lenses might come from a different age group than drivers without such a condition. These drivers may also have different driving patterns, profiles, and attitude towards risk. Further analysis to account for other factors would provide greater confidence in the conclusions from the study.

Due to time constraints, this CBA has not investigated these methodological issues any further. We therefore do not know whether these issues would affect the findings of the research mentioned above. However, if more information becomes available, it may be possible to review the above analysis when developing the final CBA.

For this preliminary CBA, we can say that any increase in safety risk will be larger under the first option (only requiring a vision test at the first licence application). This is because the second option requires an eyesight test at the nearest licence renewal to 50 years of age, providing an additional opportunity to identify vision defects.

3.1.2 Benefits of reducing the frequency of vision testing

Under both options for reducing the frequency of vision testing, drivers will save time by not having to complete an eyesight test as part of the licence renewal process and the cost of administering licence renewals should also decrease.

Renewal applicants will avoid the time currently spent doing a vision test at the DLA

Automobile Association (AA) data indicates that the time spent renewing a licence is approximately 15 minutes per application.⁴ A report analysing the future of counter-based licensing services determined that the eyesight test accounts for around 10 percent of the time interacting with a licensing agent.⁵ This suggests removing the requirement to have an eyesight test would save an average of 1.5 minutes for each renewal or application. This saving would not apply at the first application, renewals for drivers over 75 or, in the case of the second option, at the renewal closest to the age of 50.

The size of the benefits of each option depends on the number of renewals avoided. Currently, there are around 650,000 eyesight tests (including re-tests) per year. To estimate this saving, we remove the number of tests related to:

- Renewals for drivers aged over 75 and 80 (the number of renewal applications for the year ended June 2014 for these groups was 20,500 and 45,000 respectively)
- Learner licences issued (approximately 67,000 in the year ended June 2014).⁶

Removing renewals for older drivers and first time applications leaves approximately 515,000 vision tests per year that could be avoided under the first option. This provides a total time saving of approximately 775,000 minutes per year.

⁴ See <http://www.aa.co.nz/drivers/driver-licences/renewing-or-replacing-your-licence/>.

⁵ Driver Licensing and Driver Testing Review: Future State Report. Tenzing Management and Technology Consultants, June 2011.

⁶ We have used the number of learner licences issues rather than learner licence tests conducted, as an applicant only has to do the eyesight test once at their licence application, regardless of whether they pass or fail the test.

The value of applicants' time will vary depending on how the time would otherwise be used

Some applicants will apply to renew their driver licence during their personal/leisure time. Others will renew their licence during work hours, but will work longer hours to compensate for this lost work time (effectively substituting personal/leisure time to avoid any loss of work productivity). Other applicants will renew their licence during work time. The possible value of each driver's time therefore ranges from the value of non-work time (\$9.80 per hour in the NZTA Economic Evaluation Manual (EEM)) to a value that reflects productive work time (\$33.87 per hour in the NZTA EEM).

For this analysis, we are interested in the average value of time saved. Because we know that some drivers will use their personal/leisure time to renew their licence and others will complete this task during work hours, the plausible range for the average value of time is much narrower. We expect this range to be closer to the lower bound value of \$9.80 because the number of people employed as a percentage of the number of people who could be working (the labour force participation rate) is less than 100 percent. For the midpoint of the range, we assume that 60 percent of applicants visit the DLA during non-work time, and 40 percent visit during work time. This gives a weighted average value of time of \$19.43 per hour. Given the uncertainty about the value attaching to different applicants' time, we apply a range around this value that changes the proportion of applicants visiting the DLA during work time of +/- 10 percentage points (\$17-\$22 per hour).

Applying this range provides an estimated value of time saved under the first option of between \$219,000 and \$282,000 per year.

Under Option 2, the eyesight tests performed at the renewal closest to the age of 50 would also need to be removed from the number of avoided vision tests. Given that data is not collected on the ages of people that sit the eyesight test, we use the proportion of New Zealand's population that is between the ages of 45 and 54 (around 14 percent) to determine that of the original 650,000 eyesight tests, approximately 92,000 are related to drivers in this age group. After removing renewals for older drivers, first time applications, and renewals for the 45-54 age group, approximately 425,000 eyesight tests could be avoided per year under the second option. This avoids around 637,000 minutes of vision tests every year. Applying the range of \$17-\$22 per hour to the value of this time provides an annual time saving worth between \$181,000 and \$232,000.

Reducing the number of vision tests avoids the costs associated with false fails of the vision test

Less frequent vision testing will also lead to less cost for drivers that are incorrectly determined to have defective vision (that is false failures of the vision test). These drivers are required to obtain eyesight certificates and then submit these certificates to the licence agent to renew their driver licence. Removing the eyesight test requirement will reduce the costs associated with false conclusions of defective vision. These savings include:

- **The fees paid to obtain an eyesight certificate:** These fees can be either to a doctor (with a national average of \$37.14 per visit)⁷ or optometrist (with a national average of \$78.23 per visit)⁸. We apply the average of these values as the fee to each applicant.

⁷ Statistics New Zealand, 'New Zealand in Profile 2015'

⁸ Statistics New Zealand, Quarterly Weighted Average Prices for New Zealand

- **The time spent obtaining and submitting the certificate:** This time covers that spent at, and travelling to and from the required medical professional (assumed to be an hour), the time spent travelling back to the licensing agent (assumed to be 40 minutes), and the time spent queuing and interacting with staff at the licensing agent (assumed to be 15 minutes). In total, the time spent obtaining and submitting the certificate is 1 hour and 55 minutes. Again there is uncertainty around the value of this time to each person, so we apply the same range of \$17-\$22 per hour. This time is worth around \$33-\$42 per applicant.

These savings amount to between \$90.00 and \$99.50 for each person incorrectly assessed as having defective vision. NZTA estimates that the number of false failures is around 11,200 per year (this is slightly less than half of the vision tests that result in failures). Applying these fee and time savings to this number, the savings from avoided false failures is \$1 million-\$1.1 million per year.

Under the option that retains the licence renewal at 50, the number of people affected would be lower. We assume that around one-quarter of the number of false failures under option one (since an additional eyesight test close to age 50 is still required), meaning that the annual false failures would fall to around 8,500. At this level, the savings from avoiding false failures is \$761,000-\$838,000 per year.

3.1.3 Net benefit of reducing the frequency of vision testing

If the results of NZTA’s safety analysis are extended over a 20-year period, then both options would deliver net benefits. However, if there is a risk of an increase in injuries from road crashes due to eyesight deterioration over the time period between vision tests then these benefits would be eroded. As noted above, the social costs of injuries from defective vision crashes are around \$12.3 million per year with current vision testing requirements. To outweigh the benefits of the changes being considered, these annual social costs would need to increase by 10 percent under the first option and 7.7 percent under the second option.

Table 3.2 summarises the costs and benefits of the options to reduce the frequency of eyesight testing. Given the lack of information on safety risk, we are unable to conclude whether this change would provide net benefits.

Table 3.2: Summary of the Costs and Benefits of Reducing the Frequency of Eyesight Testing

Category	Description	Value under Option 1		Value under Option 2	
		Annual (\$000)	PV over 20 years (\$m)	Annual (\$000)	PV over 20 years (\$m)
Costs	Safety risk	Not quantified, but there is a potential risk of an increase in crash risk		Not quantified, but there is a potential risk of an increase in crash risk (expected to be smaller than under Option 1)	
Benefits	Value of time saved (at \$17-\$22 per hour)	219-282	2.2-2.8	181-232	1.8-2.3

Category	Description	Value under Option 1		Value under Option 2	
		Annual (\$000)	PV over 20 years (\$m)	Annual (\$000)	PV over 20 years (\$m)
	Avoided costs of false failures of eyesight test	1,000-1,100	10.0-11.0	761-838	7.5-8.2
	Total benefits		12.1-13.7		9.2-10.5

3.2 Enabling Online Licence Renewals

In-person processes are currently required for all licence applications and renewals (except to book practical tests). These processes require licence applicants to visit a driver licensing agent (DLA)—usually an AA, Vehicle Inspection New Zealand (VINZ), or Vehicle Testing New Zealand (VTNZ) branch office. In-person visits to DLAs establish identity (through taking photo and signature) and test eyesight. Every year, there are approximately 190,000 new licences (this includes new licences for all stages and classes) issued and 290,000 licence renewal applications (across all age groups).

The reform team is considering introducing the ability to renew licences and apply for special endorsements online. This option will be more convenient for many applicants by avoiding the time spent visiting a DLA, queuing for service, and interacting with staff.

Online renewals require a reduction in vision testing requirements (Section 3.1). Given that online renewals require reduced vision tests, we incorporate the costs and benefits from the previous section when examining the net effects of online licensing. The ‘options’ for online services are the same as Section 3.1 (requiring in person applications for the first application only, or the first application and the closest renewal to the age of 50).

3.2.1 Costs of enabling online licence renewals

The costs of providing online services include the costs of setting up and maintaining the IT platform. The safety risks associated with eyesight requirements present another possible cost (described in Section 3.1.1).

The IT costs of enabling online renewals will be significant

Establishing a system to support online renewals will require the development of a web application. The costs of this development will be driven by the requirements of the system, which will include being able to verify identity, process payments, and store data securely, all while being user-friendly for a wide range of potential users.

The expected upfront cost of an IT system to support online renewals falls between \$0.75 million and \$4.5 million. This is a relatively large range, reflecting uncertainty about the cost of the system (no formal scoping work has yet been completed). The lower end of this range would provide an electronic form for the submission of information, but that information would still be processed manually. The upper end of this range reflects a more interactive system that could update users on the status of their application during the process. The costs could be minimised by learning from other online government services, such as the Department of Internal Affairs’ RealMe service. Even with these learnings, we would still expect the cost to be significant.

Taking a conservative approach, we use the upper bound cost estimate in this CBA. We also consider the higher end of the cost range to be more likely because driver licensing processes affect such a large proportion of the population (so any IT system will need to be robust and user-friendly).

Maintaining the IT system will also impose ongoing costs

The IT system will also involve ongoing costs to renew and maintain, although there is a lack of information on the size of these costs. For the purposes of this preliminary CBA, we assume that these costs will be 5 percent of the initial capital investment.⁹ This amounts to an ongoing cost of approximately \$225,000 per year.

3.2.2 Benefits of enabling online licence renewals

Online licensing unlocks time savings for applicants and process cost savings for NZTA. The size of these benefits varies between the options because the second option is likely to require an additional in-person process (for the licence renewal nearest to age 50).

Drivers will save time by renewing their driver licence online

By allowing online renewals, customers can reduce the time they spend renewing their licence in person at an agent. The size of these benefits depends on the number of in-person renewals avoided—determined by the options for the frequency of vision tests and how many drivers choose to renew online. These benefits will be largely directed at drivers under the age of 75.¹⁰

For every in-person renewal avoided, we estimate that the average driver will receive a time saving of 55 minutes (20 minutes travel each way to the DLA, and 15 minutes queuing and interacting with staff).¹¹ While many applicants currently take less time to renew their licence, many applicants also spend longer in the process (particularly those that require return visits due to having insufficient evidence of identity). The travel time for individuals living in the urban centres is likely to be lower than those living in rural areas and queuing will vary across locations and times of the day. Waiting times at driver licensing agents are reported as a common frustration among applicants.

Filling in the online renewal form will take time, which needs to be subtracted from the time saved from not having to appear in person at a licensing agent. We assume the online renewal process will take 10 minutes (to complete the form, upload any required documents, and verify the information provided). Removing this time from the in-person time saving provides an overall time saving of 45 minutes for every in-person renewal avoided. Applying the estimated range of \$17-\$22 per hour for the value of applicants' time to this time saving gives an estimated benefit of between \$12.80 and \$16.40 per renewal avoided.

⁹ Other regulatory proposals with an IT component have adopted similar assumptions. See for example, Reserve Bank proposal to introduce OBR (http://www.rbnz.govt.nz/regulation_and_supervision/banks/policy/5014272.pdf) which assumes maintenance costs of 5 percent of the capital build costs.

¹⁰ While older drivers will be able to use online licensing for aspects of the licence other than the eyesight test, this is a smaller saving. Older drivers are also expected to have a lower uptake of online services.

¹¹ The 15 minute estimate is based on AA's recommendations to drivers on its website. See <http://www.aa.co.nz/drivers/driver-licences/renewing-or-replacing-your-licence/>

An increasing rate of uptake of online licensing services will increase the benefits

To determine the number of in-person renewals avoided (what the 45 minute saving can be applied to) we need to estimate the rate of uptake of online licensing services and the number of renewals where the time saving applies (which depends on the option chosen).

We use the uptake of online passport renewals (implemented late in 2012) to estimate the uptake of online driver licensing services. Between June 2012 and June 2013, the online passport renewals service had an average uptake of 20 percent, which increased to 35.7 percent between July 2013 and June 2014.¹² We assume that the rate of uptake in the second year (35.7 percent) will continue for each following year. This is also consistent with the level of uptake for completing the New Zealand census online—which was 35 percent in 2013 (up from 7 percent of respondents in 2006).¹³

Using these uptake rates is likely to be conservative given that the proportion of the population that is prepared to engage with government processes online should be growing over time.¹⁴ If this option is included in the final policy package, the final CBA can consider further testing of different uptake rates (including scenarios where uptake rate increases further over time).

- **The first option would generate savings across all licence renewals.** These uptake assumptions would generate an annual saving of between \$587,000 and \$753,000 in the first year of online renewals, and \$1 million and \$1.3 million in each following year under Option 1 (removing all vision tests and allowing all renewals to be carried out online).
- **The second option affects fewer licence renewals and would generate smaller savings.** The effects of the second option would be the same as the first option, except for the renewal closest to the age of 50. Given that data is not collected on the ages of drivers applying for the renewal, we use the proportion of New Zealand's population that is between the ages of 45 and 54 (around 14 percent) to estimate that 42,000 applications per year relate to drivers in this age group. Removing this from the number of licence renewals for drivers under the age of 75 (230,000), we estimate that around 190,000 total in-person renewals per year could be avoided under the second option. Adjusting these for the expected uptake of online services provides an estimated annual saving of \$480,000 and \$615,000 in the first year, and \$856,000 and \$1.1 million in each following year.

Benefits may increase depending on how drivers choose to complete any vision tests that are still required (nearest to 50 and over 75 years of age)

Removing all of the time saving under the second option may understate the true benefits of online renewals. Under the second option, at the renewal closest to the age of 50 the applicant has to either do an eyesight test or have a medical certificate to confirm their vision meets the required standard. Older drivers also require relatively frequent vision

¹² See <http://www.dia.govt.nz/Better-Public-Services-Measuring-Result-10>

¹³ See [http://www.dia.govt.nz/pubforms.nsf/URL/Online-Voting-in-New-Zealand-report.pdf/\\$file/Online-Voting-in-New-Zealand-report.pdf](http://www.dia.govt.nz/pubforms.nsf/URL/Online-Voting-in-New-Zealand-report.pdf/$file/Online-Voting-in-New-Zealand-report.pdf)

¹⁴ Actual uptake might be higher than our assumptions given that there are already 10 key government services offered online, with an average uptake of 46.3 percent in the second quarter of 2014. However, the online passport service is a relatively comparable to licence renewal (in terms of establishing identity). The online passport renewal service is also a relatively recent addition to online government services, which suggests its uptake in the first year (where people are less likely to be aware of or comfortable with using the online tool) will more closely reflect that of online licensing services.

tests. Some time may be saved for these groups (relative to current processes) if applicants choose to renew online.

The time savings for these renewals will depend on whether applicants:

- Complete the whole renewal process at the DLA (status quo, with impact estimated above)
- Get an eyesight certificate, and complete the rest of the application at a DLA (status quo)
- Get an eyesight certificate, and complete the rest of the application online (saves time travelling, queuing, and interacting time with staff, assuming that eyesight certificate obtained during regular medical check-up).

We also investigated whether completing just the eyesight test at a DLA and completing the rest of the application online would be an option. However, given the time required to fill out an online form it is likely that drivers that visit a DLA would also complete their renewal in person.

We do not currently have information on how drivers will choose to renew their licence at the closest renewal to age 50 or for renewals after drivers turn age 75. For this preliminary CBA, we assume that they will follow the current process of visiting a DLA.

Avoiding administrative costs through fewer in-person renewals

Reducing the number of renewals will also avoid the administrative costs (staff and time) associated with processing licence applications and renewals.

We assume that the current manual processing time takes DLA staff around 10 minutes per renewal. Assuming that customer-facing DLA staff earn around \$40,000 per year on average (the average salary for a customer service occupation),¹⁵ this provides a saving of approximately \$3 per renewal completed online after the change is made.

Table 3.3 applies the same rate of uptake observed with the use of online passport renewal (20 percent in the first year, 35.7 percent in the second and following years) to the renewals avoided under each option to determine the annual savings. We have noted the savings for the first year separately, as the lower uptake of online services will result in lower savings for the first year.

Table 3.3: Estimating Savings Enabled by Online Licence Renewals

Year applicable	Uptake of online services (%)	Total standard renewals (\$)		Process saving per renewal (\$)	Annual savings (\$)	
		Option 1	Option 2		Option 1	Option 2
First year	20.0	230,000	200,000	3.21	150,000	120,000
Following years	35.7	230,000	200,000	3.21	263,000	215,000

It is also possible that a significant uptake of online licensing could result in fewer DLA branches being needed to provide in-person services. For the purposes of this CBA, we have not estimated this impact.

¹⁵ See <http://www.trademe.co.nz/jobs/salary-guide/customer-service.html>

3.2.3 Net benefit of enabling online licence renewals

Table 3.4 summarises the costs and benefits of the options to enable online licensing (including costs and benefits related to eyesight test changes). As with our analysis of changing vision testing requirements in Section 3.1, we are unable to draw strong conclusions at this stage about whether the changes will provide net benefits. However, we can say that the additional benefits of moving to online renewals (above the benefits of simply revising vision testing requirements) are broadly similar to the additional costs of setting up the system.

Again, whether this initiative provides net benefits will depend on whether there is a risk of an increase in injuries from road crashes due to eyesight deterioration over the time period between vision tests. NZTA research suggests that the risk will not increase—although further work may be required to confirm this result. To outweigh the benefits of the changes being considered, these social costs would need to increase by 13.2 percent under the first option and 9.3 percent under the second option.

Table 3.4: Summary of the Costs and Benefits of Enabling Online Licence Renewals

Category	Description	Value under Option 1		Value under Option 2	
		Annual (\$000)	PV over 20 years (\$m)	Annual (\$000)	PV over 20 years (\$m)
Costs	IT (first-year)	4,500	4.2	4,500	4.2
	IT (ongoing)	225	2.2	225	2.2
	Safety risk	Not quantified		Not quantified (expected to be smaller than under Option 1)	
Total costs			6.4		6.4
Benefits	Value of time saved (at \$17-\$22 per hour)	587-753 in first year, and \$1,000-1,300 in following years	9.9-12.6	480 – 615 in first year, and 856 – 1,100 in following years	8.1-10.3
	Administration savings	263 (150 in first year)	2.5	215 (120 in first year)	2.0
	Avoided costs of false fails of eyesight test	1,000-1,100	10.0-11.0	761-838	7.5-8.2
Total benefit			22.3-26.1		17.6-20.6

Appendix A: Assumptions in Cost Benefit Analysis

Table A.1 lists the assumptions we have used in the cost benefit analysis, and provides plausible ranges for the values used.

Throughout the report we frequently use breakeven analysis, for instance, when a safety risk is unknown we estimate the number of accidents required to generate a cost that outweighs the benefits of an option. This means that if the assumptions in Table A.1 change, so will the breakeven point.

The use of breakeven analysis limits the ability to judge how sensitive the net effect is to the assumptions used in this report. However, we hope that feedback from stakeholders with information on possible assumptions, will allow for the next stage of the CBA to be able to conduct this sensitivity analysis.

Table A.1: Assumptions used in the Cost Benefit Analysis and the Range of Values

Section	Assumption	Value	Plausible range
3.1.2	Time spent in DLA	15 minutes	5 minutes-30 minutes
	Proportion of time in DLA spent on eyesight test	10%	5%-20%
	Average value of time visiting DLA	\$19.43	\$17-\$22 per hour (+/- 10 percentage points from base that assumes 40 percent during work time)
	Proportion of eyesight tests conducted on drivers between 45 and 55	14%	10%-20%
	Cost of visiting medical professional	\$57.69	\$37.14-\$78.23
3.2.1	IT costs (initial)	\$4.5 million	\$0.75 million-\$4.5 million
	IT costs (ongoing)	\$225,000	\$100,000-\$1 million
3.2.2	Online service uptake for standard renewals	First year: 20% Following years: 35.7%	First year: 10%-50% Following years: 20%-80%
	Proportion of renewals for drivers between 45 and 55	14%	10%-20%
	Processing time per renewal	10 minutes	2 minutes-20 minutes
	Annual salary of DLA staff	\$40,000	\$30,000-\$50,000



T: +1 (202) 466-6790
F: +1 (202) 466-6797
1747 Pennsylvania Avenue
NW 12th Floor
WASHINGTON DC 20006
United States of America

T: +1 (646) 632-3770
F: +1 (212) 682-0278
200 Park Avenue Suite 1744
NEW YORK NY 10166
United States of America

T: +61 (2) 9231 6862
Level 1, 27-31 Macquarie Place
SYDNEY NSW 2000
Australia

T: +64 (4) 913 2800
F: +64 (4) 913 2808
Level 2, 88 The Terrace
PO Box 10-225
WELLINGTON 6143
New Zealand

T: +57 (1) 646 6626
F: +57 (1) 646 6850
Calle 100 No. 7-33
Torre 1, Piso 14
BOGOTÁ
Colombia

T: +33 (1) 73 44 26 97
F: +33 (1) 73 44 26 01
6, Rue Duret
PARIS 75116
France

----- www.castalia-advisors.com