Before the Hearings Commissioners
at Matamata

in the matter of: A Private Plan Change to the Matamata-Piako District Plan under Schedule 1 of the RMA by Rings Scenic Tours Limited to introduce a Development Concept Plan, to enable the ongoing operation and growth of tourism activities at Hobbiton Movie Set within an appropriate planning framework

to: **Matamata-Piako District Council**

applicant: **Rings Scenic Tours Limited**

Statement of Evidence by **Cameron Beswick Inder** on behalf of Rings Scenic Tours Limited

Date: 25 March 2019

1. INTRODUCTION

Qualifications and Experience

1.1 My name is Cameron Beswick Inder. I am a Transportation Engineer at Bloxam Burnett & Olliver, a firm of consulting engineers, planners and surveyors based in Hamilton and have held this position since 2004.

1.2 I have twenty years' experience in transportation and traffic engineering gained through 16 years employment in New Zealand and approximately 4 years in the UK. My qualifications are a Bachelor of Engineering Civil (Hons) from the University of Auckland. I'm a Member of Engineering NZ (MEngNZ), A Chartered Professional Engineer (CPEng) and a member of the Engineering NZ Transportation Group.

1.3 In relation to this hearing I am presenting expert traffic engineering evidence on behalf of Rings Scenic Tours Ltd (the Applicant/ RST). The Applicant is seeking a private plan change to the District Plan for the introduction of a new Development Concept Plan (DCP) and associated provisions into the DCP framework, including new issue, objective and policy statements. The private plan change relates in its entirety to the specified property located at 487, 501 and 502 Buckland Road and collectively described as the Hobbiton Movie Set. The plan change is also described as Proposed Plan Change 50 (PPC50) to the District Plan.

1.4 I have read and agree to comply with the Code of Conduct for Expert Witnesses in the Environment Court, Practice Note (2014). This written evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this evidence.

1.5 I have been providing traffic engineering advice to the Applicant since 2015 during development of the first draft DCP and initial private plan change investigations. As such, I have visited the site numerous times including with Council representatives and I managed and prepared the Integrated Transport Assessment report in relation to PPC50. I last visited the site and inspected the surrounding road network on Friday 9 March 2019.

1.6 I have experience in transportation and traffic engineering matters associated with resource management, including effects assessment for resource consents, Plan Changes and District Plan Structure Plans; experience in the design of traffic infrastructure and facilities such as roads and intersections; and in road safety engineering, traffic calming, urban design, subdivision design, and traffic modelling.

1.7 I have specific experience with respect to the assessment of Plan Change transportation effects matters before this Hearing, including:

a. Providing traffic engineering advice and design for transport-related aspects of District Plan changes, reviews, variations and Notice of Requirements, including the Waikeria Prison expansion Board of Inquiry in 2017 (for Otorohanga District Council)

b. Consultant civil/transportation engineer for developers and landowners assisting in preparing or reviewing the transportation assessments for Private Plan Changes, road projects and consent applications, including PC10 to the Waipa District Plan for Waikato Regional Airport Limited (2018/19) and PPC46 for Ingham's Waitoa Processing Plant (Matamata-Piako District Council, 2015);

c. Assisting road controlling authorities including NZ Transport Agency, Hamilton City Council and Tauranga City Council with traffic engineering and transport planning and design of local and highway road network infrastructure, including Cobham Drive / Wairere Drive Interchange (HCC), Papamoa Eastern Interchange (TCC) and Waikato Expressway and Tauranga Northern Link projects (NZ Transport Agency).

Purpose of Evidence

1.8 The purpose of my evidence is to describe the transport characteristics of PPC50 and the expected effects of the proposal on the transport environment, along with the mitigation measures that are recommended and have been implemented to date to address those effects, and items that remain to be completed.

1.9 The information in the ITA report remains current, except where I otherwise state in my evidence, so the ITA should be referred to for the complete assessment detail. This evidence provides a summary of the ITA and conclusions reached, and whether I consider those conclusions remain valid in light of the S42A Report and submissions that have been received in relation to transportation matters.

1.10 Specifically, my evidence will cover:

a. A summary of my involvement in preparation of the Integrated Transport Assessment for the Plan Change;
b. A summary of the key traffic characteristics of the Plan Change and Integrated Transport Assessment;
c. A description of mitigation measures identified and implemented to date;
d. Comments on the s42A report and relevant submissions;
e. My conclusion.

1.11 In preparing this evidence I have read the opinions expressed through the submissions that have been received during the public submission process. I will address the submissions relating to traffic matters, in this evidence.

1.12 I have read the Transportation Review by consulting traffic engineers Gray Matter Ltd for MPDC dated 11 February 2018 (the Initial Review), and the Updated Transport Assessment Review (March 2019) contained in Appendix C of the s42A report. Both were prepared by Council's consultant engineer Mr Alastair Black of Gray Matter Ltd.

1.13 I have also reviewed the traffic related aspects of the s42A report by Mr Marius Rademeyer. I will respond to matters raised in each report in this evidence.

2. MY INVOLVEMENT IN PREPARING THE INTEGRATED TRANSPORT ASSESSMENT

2.1 I was involved in the development of the plan change proposal from an initial briefing with Mr Steve Bigwood (Planning Manager, BBO) and Mr Russell Alexander (General Manager, RST) in 2015. My first site visit to view the transportation aspects of the site was conducted on 13 August 2015.

2.2 Since then I have managed the preparation of the Integrated Transport Assessment, overseeing and reviewing the work of my colleague Cameron Stanley as he progressed the initial investigations, data collection and analysis work, and the initial draft ITA report. When Mr Stanley left BBO at the end of 2017 I picked up all responsibilities for completing the draft ITA updates and confirming the assessment's conclusions and recommendations.

2.3 My role also included consultation on transportation matters of the proposed plan change with the NZ Transport Agency and Matamata-Piako District Council (MPDC) staff, and meeting with MPDC staff on site on 3 November 2017 to walk-over and agree the extent of the mitigation measures to be implemented as a result of the draft ITA conclusions and recommendations. I finalised the ITA report as a supporting technical assessment to PPC50 on 30 January 2018.

3. BACKGROUND TO THE PROPOSED PLAN CHANGE

3.1 Rings Scenic Tours (RST) manages the Hobbiton Movie Set and The Shire's Rest sites (herein referred to as "Hobbiton"). Hobbiton is one of New Zealand's leading tourist destinations with 17% of all international tourists in New Zealand visiting the attraction according to Tourism NZ surveys. Hobbiton employs up to 360 staff during its peak operation in summer.

3.2 RST has existing resource consents from MPDC which enable movie set tours to operate. These resource consents enable the following activities which generate or are related to traffic and transportation:

- Annual visitor numbers limited to 300,000 per year (including movie set tours and movie screenings, events and conferences);
- Up to 12 events per year including movie screenings, public gatherings and parties and conferences (but excluding movie set tours);
- Management of events of up to 300 attendees to restrict vehicle movements to 100 movements, or events over 300 attendees subject to approval of the Event Traffic Management Plan by Council;
- Car parking and bus/coach parking areas on site.

3.3 The activities enabled by these existing resource consents are part of the environment against which adverse effects must be assessed for the purposes of this Plan Change.

3.4 There has been significant growth in visitor numbers in recent years such that the site has often reached the visitor capacity under the existing resource consents before year end. Visitor numbers for the 2016/2017 financial year were approximately 551,717 people, which exceeds the resource consent cap of 300,000 visitors per annum.

4. SITE LOCATION AND PLAN CHANGE TRANSPORT GENERATING CHARACTERISTICS

Location

4.1 The Hobbiton site is located at 487, 501 and 502 Buckland Road, Matamata on both the northern and southern side of Buckland Road. Visitors to the tourist attraction access The Shire's Rest on the southern side of Buckland Road from two access points, a one-way entrance and a separate one-way exit.

4.2 The site is accessible via several State Highways including State Highway (SH) 1, SH 29, and SH 27. The nearest township is Matamata located approximately 16km northeast of the site, while Cambridge is located approximately 25km west. The locality of Hobbiton Movie Set is practical for day visits from the major centres of Auckland (175km), Rotorua (70km), Hamilton (45km) and Tauranga (59km). **Attachment 1** shows a Site Locality Plan.

Plan Change Traffic Generating Characteristics

4.3 Tours of the Hobbiton Movie Set operate between 8.00am and 7.30pm during daylight savings hours and 8.30am to 5.30pm at all other times, with all days of the year, excluding Christmas Day, being open for operation. Visitors can only access the movie set by guided tour operated from The Shire's Rest on the southern side of Buckland Road. Free independent traveller (FIT) visitors park their vehicles in the car park at the Shire's Rest, and are then taken by Hobbiton tour bus to the movie set on the northern side of Buckland Road for a guided tour. Tours depart The Shire's Rest area up to every 5 minutes during peak periods and every half hour during all other times. Visitors travelling by chartered tour

coaches gain access to the movie set on their coach but with a Hobbiton tour guide in attendance.

4.4 The site operates with a peak capacity of 3,500 visitors per day doing the movie set tour. From more than 10 years of ticket records kept by RST, summer is by far the busiest season and January is always the busiest month of the year for movie set tours. RST has determined that a cap of 3500 visitors per day doing the movie set tour is the practical maximum daily number the attraction can accommodate based on the number of daylight hours, and before the authenticity of the experience is eroded by crowds and queues, or tours become too rushed, and the site's intended pristine appearance (grass paths, trees, shrubs etc) starts looking untidy and struggles to survive.

4.5 The ITA report details how the practical maximum capacity of 3,500 visitors per day equates to a peak daily traffic generation of approximately 2,100 trips per day and 350 veh/hr in the peak hour. This includes trips from all staff and visitors but excludes events outside of normal movie set tour hours.

4.6 Events such as weddings, corporate functions, movie screenings and concerts typically operate outside movie set tour hours so as not to disrupt tour schedules, but at times also operate alongside tours when booking schedules allow.

4.7 Events outside normal movie tour hours can potentially have up to 500 people per event travelling in private vehicles to the site, resulting in approximately 250 inbound vehicle trips assuming conservatively (low) that the average vehicle occupancy is just two people. Typically the average vehicle occupancy rate to events (for instance weddings, work functions, conference functions etc) would be higher than 2.0 as most event groups tend to either travel by charter buses or involve a combination of charter bus with private cars and/or mini buses.

4.8 On the basis of the assessment in the ITA I consider that events of 500 visitors or less (outside of normal Movie Set Tour hours) should be permitted as part of the DCP without RST requiring a Traffic Management Plan. Also such events need not be restricted in their frequency as the assessment is such that the road network has the ability to operate safely with acceptable effects for the higher flow rate of 350 veh/hr associated with the movie set tour peaks. Also, more than one event at any one time is permissible from a network traffic effects perspective provided the total number of visitors for the simultaneous events (with no TMP and after normal movie set tour hours) does not exceed 500 people.

4.9 For movie set tour visitors, the ITA report demonstrates the seasonal impact on visitor numbers (Section 6.2) by week throughout a typical year using RST visitor records for 2016. Given the daily capacity of the movie set tour operations and the seasonal effects on tourism numbers in New Zealand, the ITA concluded that it is unlikely that Hobbiton will

exceed 650,000 movie tour visitors per year in future. This figure was an engineered estimate extrapolating the 2016 weekly visitor profiles, and was not intended to be taken as an absolute capacity limit to be applied as a rule in the DCP. Instead, the 3500 movie set tours per day cap is what directly influences the peak daily and hourly traffic movements. The peak daily and hourly traffic generation is what potentially causes transport effects on the network.

4.10 As identified in the ITA, the 3500 movie set tour visitor cap correlates to a peak daily trip rate of "approximately 2084 veh/day". I will come back to this figure shortly. However, it is my view that a DCP rule setting the maximum daily cap to 3,500 movie set tour visitors, is the key to ensuring that future growth of Hobbiton is enabled by the DCP without materially greater transport effects occurring that that assessed in the ITA report. This daily cap is important for ensuring that any future growth spreads into the later weeks of summer and the shoulder and off-peak seasons so as to not cause unexpected and unmitigated increases in adverse traffic effects on the network. The 3500 maximum daily movie set tour visitor cap achieves that. So I see no traffic effects-related reason to add a yearly limit of 650,000 visitors to the DCP Performance Standards. I note there are no submissions requesting a yearly limit.

4.11 To reinforce my point, data for the 2017/18 year and estimated total for 2018/19 (discussed further below), shows the yearly total is growing closer to 650,000 movie set tour visitors. It has not been exceeded, but RST records show that the 2017/18 year was a very good year for Hobbiton, reaching 626,832 movie set tour visitors. By comparison the 2018/19 11 month total to the end of February was 574,873. Extrapolating to year end March 2019 gives a yearly total of 642,000.

4.12 January 2019 recorded 83,404 movie set tour visitors, which is the highest January on record for Hobbiton and reflects an average attendance of 2690 visitors per day over the month. The first week in January 2019 is the highest week on record at 22,870 movie set tour visitors. The daily average over this 7 day period was 3267 visitors/day. This is still under the 3500 daily movie set tour visitor cap, but the total for the year is close to 650,000. It is possible that 650,000 tour visitors per year could be reached without ever exceeding the 3500 visitor per day limit.

4.13 This reiterates my view that the 650,000 figure should not be a cap in the Performance Standards. Similarly the 387,000 trips per year total that MPDC and the NZTA submissions request as another cap, should not be in the Performance Standards. I note Mr Black supports this trips per year cap as well. However, the figure is directly related to the 650,000 visitors / year estimate, which was modelled from the 2016 weekly visitor profile. The 387,000 figure was derived from the 650,000 visitor estimate essentially for calculating the potential pavement impacts and contribution payable to MPDC. It is of little relevance to the measurement and assessment of wider network capacity or safety effects. If 387,000 trips per annum is applied as a rule in the DCP then it leaves little allowance for Hobbiton

visitor numbers and daily traffic to grow in future in the shoulder and winter months, which was a fundamental finding of the ITA and basis for recommending the 3500 movie set tour visitors per day cap. The daily visitor cap for movie set tours is all that is needed to manage traffic effects to that which has been assessed, since this number is what actually influences the peak day and hourly traffic volumes (based on the relationships derived from surveyed traffic data and visitor numbers).

4.14 A yearly cap on traffic flows (such as 387,000 per year) would place an onerous traffic counting and monitoring requirement on RST that is never ending. Such a cap is unnecessary and is not based on any effects assessment in the ITA. I do not agree with Mr Black's reasoning that there could somehow be a significant change for the worse in vehicle occupancy or travel mode (car vs bus) that would go undetected if there is no yearly cap. There is no evidential basis for such a significant change for the worse. The latest flow figures in Mr Black's report indicate an increase in bus trips, as visitor numbers have exceeded 600,000 per year. I discuss this further in my evidence below.

4.15 Coming back to the 2,084 daily trips figure, this number was derived in the ITA on the basis of a ratio of average daily vehicle movements relative to average daily recorded visitor numbers, and then that ratio applied to the 3,500 peak day visitor volume for movie set tours hours. So to treat it as an absolute figure is nonsense. In hindsight it should have been rounded up and referred to in the ITA as "approximately 2,100 trips per day"

4.16 Another key point to note is the basis for deriving that hourly flow excluded Events operated outside of standard movie set tour hours. Despite this, and it being an approximate figure, it has been included in the Council Officer's proposed Performance Standards Item 7(L), as an absolute limit encompassing <u>all activities</u> that might occur on site over a 24 hour period. The proposed wording is as follows:

> *Peak trip generation resulting from all activities undertaken at the DCP site shall not exceed a maximum peak of 2,084 trips within any 24 hour period starting at 6am and finishing at 6am on the following day.*

4.17 So I disagree with having this proposed rule. But if the daily traffic volume it is to be used in a rule then it should be rounded up to the nearest 100 vehicles per day, i.e. 2,100, and the 2,100 veh/day limit should apply <u>only to traffic generated during normal movie set tour hours of the business</u>, which is consistent with the way the figure was derived. I note Mr Black refers to the figure as 2,100 veh/day in his Conclusion (section 5.1) of the Traffic Assessment Review, so it should be rounded as such. However, I again state that including an absolute number is inappropriate and unnecessary given the maximum visitor number achieves the same purpose of limiting vehicle traffic on the transport network.

Parking Demand and Overnight Stays

4.18 The ITA report assessed parking demand for both day to day movie set tour operations, and Event parking requirements. Based on parking and traffic volume survey data collected in 2016 the ITA identifies that the peak parking demand is 9.8% of the daily total number of visitors. Therefore a minimum of 343 all-weather car parking spaces are required on site within Precinct 1 (The Shire's Rest precinct) to meet the parking demand for movie set tours operating at the 3500 visitor per day capacity limit.

4.19 Precinct 1 will soon have a minimum all-weather parking capacity of 379 spaces upon completion of a new office building currently under construction. A further 71 spaces are available during summer months as overflow parking on the flat hard-pack surface paddocks adjacent to the main car park area. This brings the total parking supply in Precinct 1 during peak summer months to 450 spaces.

4.20 The 379 all-weather spaces is easily sufficient to accommodate vehicles for Events where up to 500 people are scheduled to arrive in private vehicles outside of normal movie tour hours. For scenarios where an event is held during the normal operating hours of the movie set tours, the number of visitors booked for the event must be included as part of the 3500 daily visitor cap (i.e. visitors from events during normal operating hours + Movie Set tour visitors ≤3,500 per day). Operations must be managed so that sufficient on-site parking is provided for such events held during normal operating hours; being no less than 450 during the months November to March (allowing for overflow paddock parking), and no less than 380 all-weather surface parking for all other months. On this basis there will no demand for visitor parking on Buckland Road adjacent to the site as there is sufficient parking on site.

4.21 The DCP also proposes an overnight Park-Over camping facility, and accommodation units in Precinct 1. Neither of these facilities is expected to generate any additional traffic to the site as people staying over will already be visitors to Hobbiton. I consider the traffic effects of the accommodation proposals will instead be positive in terms of traffic safety since it affords the opportunity for tired tourists to rest at the end of the day rather than drive on to another destination or camping site, which could also require driving on unfamiliar country roads in the dark.

4.22 Given the road safety benefits of allowing tired tourists to stay on site over-night, it appears to be counter-intuitive to limit the number of visitor accommodation units or the number of camper vans staying over in the designated off-street area to 86 and 30 respectively, as proposed in the Council Officer's recommended Performance Standards, Item 1.16. If a number limit is required on these activities for reasons that are not traffic-related then there should be flexibility built in for growth given the road safety benefits that overnight camping on site enables.

Buckland Road

4.23 Buckland Road is classified as a 'Local Road' under the MPDC District Plan road hierarchy. It is a rural local road where the speed limit is 100 km/h. In my experience of driving the road, the typical operating speed ranges from 50 km/h to 80 km/h due to the regularly changing curvature and vertical alignment, as is common of rural local roads. I would support a speed limit reduction to 80 km/h on Buckland Road and Puketutu Road but I do not think it would result in any significant tangible safety benefits since tourist traffic in particular is typically slower than this from my observations.

4.24 The geometric standard of the eastern section of Buckland Road between the site and Puketutu Road is better than the western section between Hobbiton and Karapiro Road. The eastern section was improved with substantial physical works in 2013 to accommodate the increasing traffic volumes associated with the Hobbiton Movie set attraction. Those physical works involved road widening, sightline improvements, curve easing and resealing to improve safety for road users (given many are tourists unfamiliar with the road) and residents of Buckland Road. The western end of Buckland Road is not well suited to high traffic volumes or speeds due to the narrower seal widths and many back to back tight radius curves. Since the significant majority of traffic to Hobbiton was already observed to be using the eastern section it was decided to not improve the western section so as to avoid attracting more traffic and/or increased vehicle speeds over that section.

4.25 Traffic data recorded during a survey in February 2016 together with a method of deriving the directional split of arrivals and departures from the site (detailed in Section 6.1 of the ITA report), confirmed that the significant majority (approximately 93%) of visitor trips in private vehicles to Hobbiton arrive and depart via the eastern end of Buckland Road from Puketutu Road. The remaining 7% travel via the western end of Buckland Road and Karapiro Road.

4.26 The ITA report identifies that traffic volumes on Buckland Road recorded by Council in 2015 were 289 veh/day (ADT) on the western section and 1181 veh/day (ADT) on the eastern section.

4.27 As identified in the Traffic Assessment Review report by Council's consultant engineer Mr Alastair Black of Gray Matter, the traffic volumes on these sections of Buckland Road had increased by January 2018 and then reduced overall by 226 veh/day again in 2019. The Table below is presented in Mr Black's report (and repeated here for ease of reference).

Date of Count	Buckland Road (west) (CH 4380)	Buckland Road (east) (CH5470)
April 2015	289veh/day	1,181veh/day
January 2018	435veh/day (11% HCV)	2,018veh/day (11% HCV)
February 2019	459veh/day (12% HCV)	1,768veh/day (15% HCV)

4.28 Although the figures at first glance indicate significantly increased traffic volumes on both sections of Buckland Road, it is important to consider that this is not only due to the increase in visitor numbers over that period. The data includes seasonal differences between the month of April and January and February. It effectively compares peak summer with autumn visitor numbers from different years. Section 6.2 of the ITA includes a graph of visitor numbers recorded by RST for each week of the 2016 calendar year. This shows the significant seasonal variation in the number of visitors. Approximately 27% of the total yearly visitors to the movie set tours occurred in the summer months of January and February, while visitor numbers in April were 30% less than January. This pattern of high seasonal variation in visitor numbers is consistent across the 10 years' worth of RST records.

4.29 Considering the April traffic volume count in the table, the 2015 visitor records show 36,540 attended Hobbiton in April 2015 compared with 58,935 in January 2015. The January total is 61% higher than April. Given the correlation between visitor numbers and trip generation the volume on Buckland Road east in January 2015 was potentially in the order of 1700-1900 veh/day (cf 1,181 veh/day), and 300-400 veh/day on the western section of Buckland Road.

4.30 So while the data in the table at face value suggests there have been disproportionate traffic volume increases on Buckland Road between 2015 and 2018, the reality when comparing the same months between years is that the increase is generally aligned as expected with the increase in visitor numbers to Hobbiton.

4.31 It is also important to note from the above table that heavy traffic volumes between 2018 and 2019 increased from 11% to 15% respectively on Buckland Road east, but just 1% increase on Buckland Road west. This suggests that the number of buses taking visitors to and from Hobbiton via Buckland Road east has increased significantly which is positive from a point of view of reducing the total number of vehicles on the road, while sustaining increased visitor numbers.

5. SUMMARY OF EFFECTS ASSESSED IN THE ITA REPORT

5.1 A key finding of the ITA report based on Hobbiton movie set tour having a practical maximum capacity of 3500 visitors per day, is that the peak daily traffic generation is approximately 2,100 trips per day and peak hour is 350 veh/hr (two way). These figures includes all trips by staff and movie set tour visitors but excludes events outside of normal movie set tour hours. These volumes are not of sufficient magnitude that the efficiency and capacity of the road network and surrounding intersections around Hobbiton will be affected in any significant way. This is an opinion also expressed by Mr Black in Section 4.1 of his initial Traffic Review report (14 February 2018) where he concludes "*There may be some additional delay at affected intersections but [its] unlikely to be significant*".

5.2 Rather the core issue, as identified in the ITA, is around the safety of the network and whether the increase in traffic associated with the Plan Change can be accommodated without causing more than minor adverse safety effects for road users and residents near Hobbiton.

5.3 On that basis crash statistics from the NZTA CAS database were assessed in the ITA for the 10 year period 2007 to 2016, which was the most recent 10 year period at the time. Crash data was assessed for Buckland Road and the intersections of Buckland Road / Puketutu Road, Buckland Road / Karapiro Road and SH29 / Hopkins / Puketutu Roads. In addition the crash data was assessed for numerous other intersections in the wider network surrounding Hobbiton.

5.4 The ITA describes the crash analysis findings as follows: "*Traffic volumes along both ends of Buckland Road have increased significantly in the 2012-2016 five year period, while the crash numbers have also typically increased relative to the previous 5 year period 2007-2011. However, the number of visitors to Hobbiton per year since 2011 has increased by 16.7 times, from 33,000 in 2011 to 552,000 in the 2016/17 financial year. Accordingly, it is evident that the crash rate per 10,000 visitors to Hobbiton over the 2012-2016 period has actually reduced significantly relative to the 5 year period 2007-2011. Without the widening and sightline improvement works to the eastern section of Buckland Road in 2013 it is likely that the crash rate per 10,000 visitors to Hobbiton would have increased as the exposure levels increased with traffic volume. So this work has been highly beneficial to road users*".

Buckland Road east

5.5 In the two years (2017-2018) since the 2012-2016 crash analysis in the ITA report there have been three further crashes over the eastern section of Buckland Road between Hobbiton and the Buckland Road / Puketutu Road intersection, inclusive.

5.6 All three were non-injury crashes. One of the crashes was a rear end type in October 2017, occurring on Buckland Road near the exit of Hobbiton car park. The Traffic Crash Report identifies the cause being a tourist driver that slowed right down while trying to navigate entry into Hobbiton. The following car crashed into the rear of the slow moving car. As noted earlier The Shire's Rest car park has a separate entrance and one exit to Buckland Road. The exit is the first of the two access points seen by drivers approaching from Buckland Road east. At the date of that rear end crash it was a wide open access that had the appearance of an entry to the car park. Since then RST has narrowed and modified the exit so it is less obvious to drivers approaching from the east on Buckland Road. RST has also added the sign below showing "Hobbiton Entrance 150m".

Hobbiton Exit looking West on Buckland Rd. Entrance 150m Sign on the left

5.7 One of the three crashes involved an employee of Hobbiton that had worked a full day, was driving too fast in wet conditions and lost control on a bend, crashing through a wire fence into a paddock on the same side of the road they were travelling.

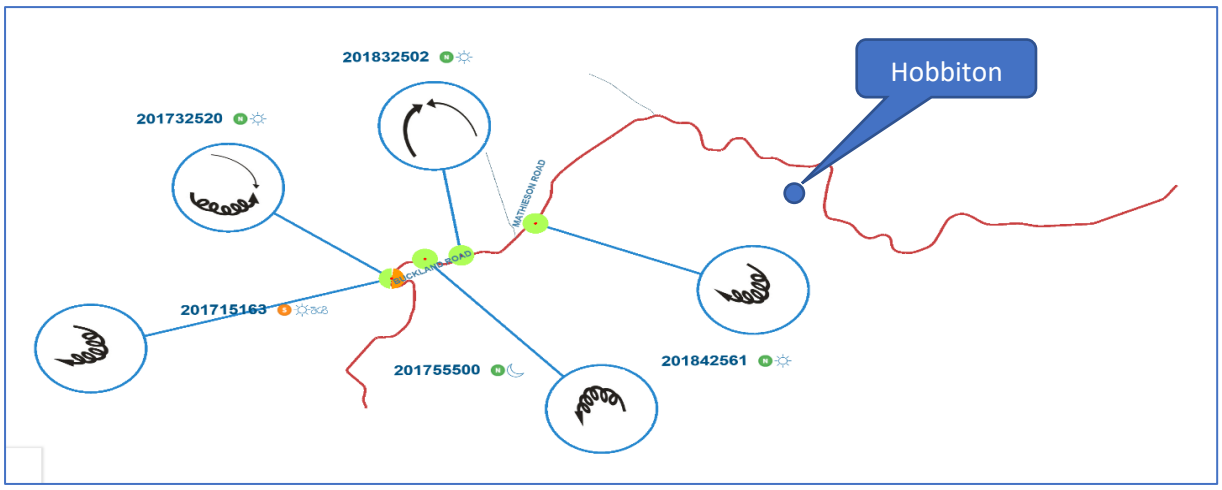
5.8 The other non-injury crash involved a tourist driver losing control turning left into Buckland Road at the Buckland Road / Puketutu Road intersection in October 2018. The cause was following another vehicle to Hobbiton and not paying attention. This is the only crash recorded at that intersection in two years. In the 5 year period 2012-2016 there were two non-injury crashes, both loss of control turning left into Buckland Road, at the intersection. On this basis there is one loss of control non-injury crash at the intersection approximately every 2.5 years. This is not at a level where Council or NZTA (if it were a State Highway) would deem the intersection to be a high crash risk or in need of safety improvements.

5.9 However, from my observations on site earlier this month I noticed an issue potentially confusing tourist drivers on the Puketutu Road northbound approach to the intersection. A large advance direction tourist sign exists 300m before the intersection indicating Hobbiton-bound traffic to turn left (into Buckland Road). Immediately before Buckland Road there is a large white arrow marked on the northbound lane indicating traffic should continue 'straight ahead'. Then 45m to the right at the head of the Buckland Road / Puketutu Road intersection is another Hobbiton sign indicating to turn left.

5.10 I consider this white arrow in the northbound lane sends a conflicting message to foreign drivers who (from my experience of driving on other countries) are looking for any information they can to guide them to their destination. The photo taken below illustrates the issue. I recommend that the northbound white arrow be deleted from the road surface. The southbound arrow should remain as it guides foreign drivers to the correct side of the road who have just turned right out of Buckland Road. I expect that deleting the northbound arrow will help to reduce the risk of drivers performing sudden left turn manoeuvres into Buckland Road and losing control.

Buckland Road west

5.11 In the five years 2012-2016 over Buckland Road west within MPDC jurisdiction there were 7 crashes, 5 of which were non-injury, and one each resulting in serious and minor injuries. There have been a further five crashes since the ITA analysis, in the 2 year period 2017 - 2018 as shown below, four of which were non-injury crashes.



5.12 The head on crash on the curve was a non-injury crash due to low speeds, but was caused by a tourist cutting the corner on a bend. The Traffic Crash Report stated there is no centreline marking but the road "is wide enough for two vehicles to pass by each other without taking evasive action".

5.13 I am also aware of another crash on Buckland Road west, about 700m from Hobbiton, that occurred on Thursday 21 March between a car driving west by a local resident from Buckland Road east, and a tourist camper van travelling east to Hobbiton. The Canadian tourist driver of the campervan has driven on the wrong side of the road on a corner and hit the local resident's car head-on. No one was injured but both vehicles were extensively damaged by fire. The bend that this crash occurred on has a centreline marking and is sufficiently wide for two vehicles to pass by one another safely without either vehicle needing to pull wide into the verge.

5.14 The ITA report recommended a number of measures to be implemented to address the potential for adverse safety effects associated with the increased traffic volumes of PPC50. These measures can be grouped as:

a. Adding improved signs, line markings and directional arrows to address common crash types that had been identified in the crash records at the time of writing the ITA,
b. Implementing measures to further discourage/reduce Hobbiton related traffic from using Buckland Road west, thereby reducing the risk of crashes occurring over that section.
c. Providing safe pull-off locations for photo opportunities on Buckland Road east, while adding no stopping line markings and signs in unsafe locations where tourists commonly stop to take photos enroute or leaving Hobbiton.

5.15 The improvements are listed in the table below, and most have already been completed in 2018. A tick shows the completed items and a cross for those that are not. Some commentary is provided afterwards addressing the items that have not been completed.

ITA Identified Transport Safety Improvement Measures

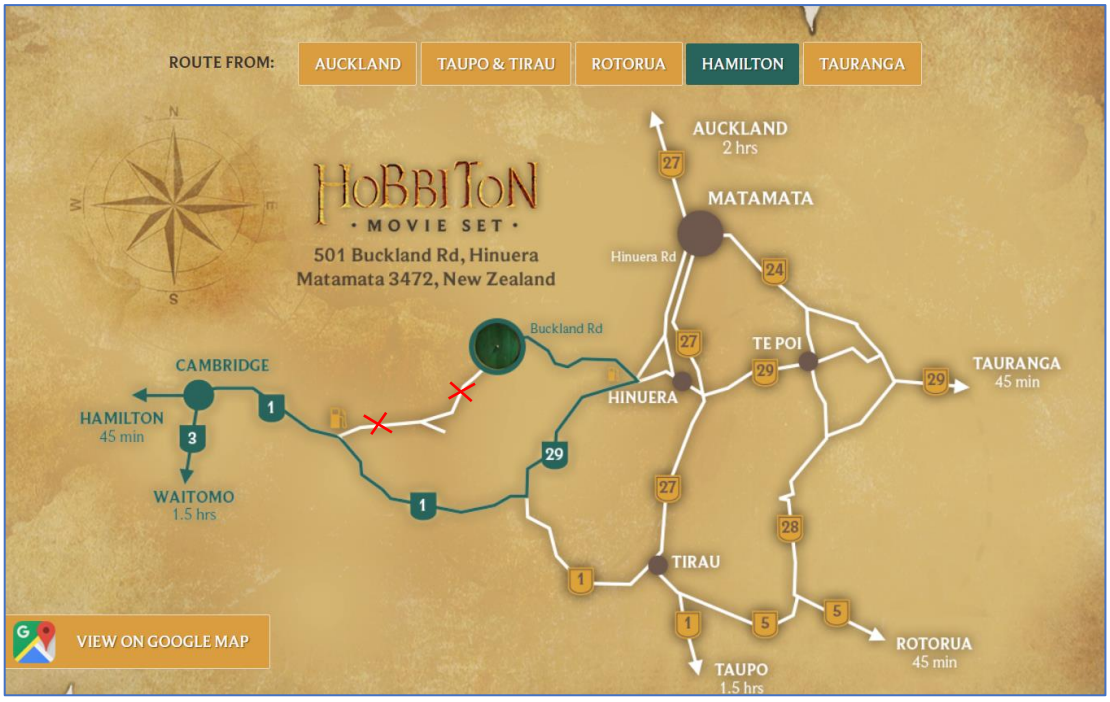
Item	Improvement Location and Description	Complete?
General Improvements for Managing Traffic		
1	Prominent advertising on the website, of the preferred route to Hobbiton from the various popular main centres	✓
2	Guidance from RST to tour operators that all buses to Hobbiton should travel via the eastern end of Buckland Road	✓
3	Requesting GoogleMaps to assign drivers to Hobbiton via Buckland Road east, rather than the western end of Buckland Road for vehicles coming from State Highway 1 north of the site. Google has subsequently changed its route choice to Hobbiton to the east side of Buckland Road via SH 1.	✓
Buckland Road (west)		
4	Implement the comprehensive signage strategy on the State Highways and local roads that direct drivers to the eastern end of Buckland Road (refer to Section 9.2, and Appendix B of the ITA report)	X
5	Improving signs at Hobbiton entrance to ensure vehicles take the appropriate route out of Hobbiton: existing signage is small and difficult to read.	✓
6	Painting white arrows on the road surface to indicate to tourist drivers to drive on the left.	✓
Buckland Road (east)		
7	Pavement mark white direction arrows in each lane on Buckland Road east at 900m, 2660m and 4410m to reinforce to tourists that New Zealand drives on the left	✓
8	Install 100mm white painted edge lines on both sides of Buckland Road from 0 to 5370m	✓
9	Install double yellow “no passing” centre line from 1800m to 6000m, inclusive of lead in markings	✓
10	Install no stopping edge line markings on the eastbound lane and no stopping signs on the eastbound berm of Buckland Road from 2610m to 3510m and from 3760 to 4540m. These are unsafe locations where tourists regularly pull over to take scenic photos	✓
11	Create safe, chip sealed surfaced pull off areas in the berm at 3750m on the northeast side of Buckland Road, for tourists to park off the road shoulder to take photos	X
12	Create safe, chip sealed surfaced pull off areas in the berm at 4550m on the northeast side of Buckland Road, for tourists to park off the road shoulder to take photos	✓

13	Construct gated speed calming entrance signs (Threshold treatments) either side of Hobbiton at 5210m and 4540m, with "Welcome to Hobbiton Movie Set" or similar agreed wording with MPDC. Threshold treatments to be in accordance with MPDC standards	✓
14	Provide convex mirrors mounted on poles in the berm opposite accesses #399 and #385 to improve exiting sight distance	X
15	Relocate Hobbiton car park exit Give Way limit line 2m from road edgeline, repaint with thermoplastic paint. Mark "Do Not Walk" at site entrance (at Buckland Road Edge)	X

5.16 The above physical safety improvement items 6-15 were agreed by BBO in consultation with MPDC as appropriate mitigation of the Plan Change effects on Buckland Road. A financial contribution of approximately $33,000 was paid by RST to MPDC to implement these with exception of the convex mirrors. All but two of the items 6-13 have been completed at the time of my site visit on 9 March 2019. I understand the two incomplete items (11 and 15) are because MPDC ran out of funds to complete the agreed works. However, it is also my understanding that no further contribution has been requested from RST to complete the work.

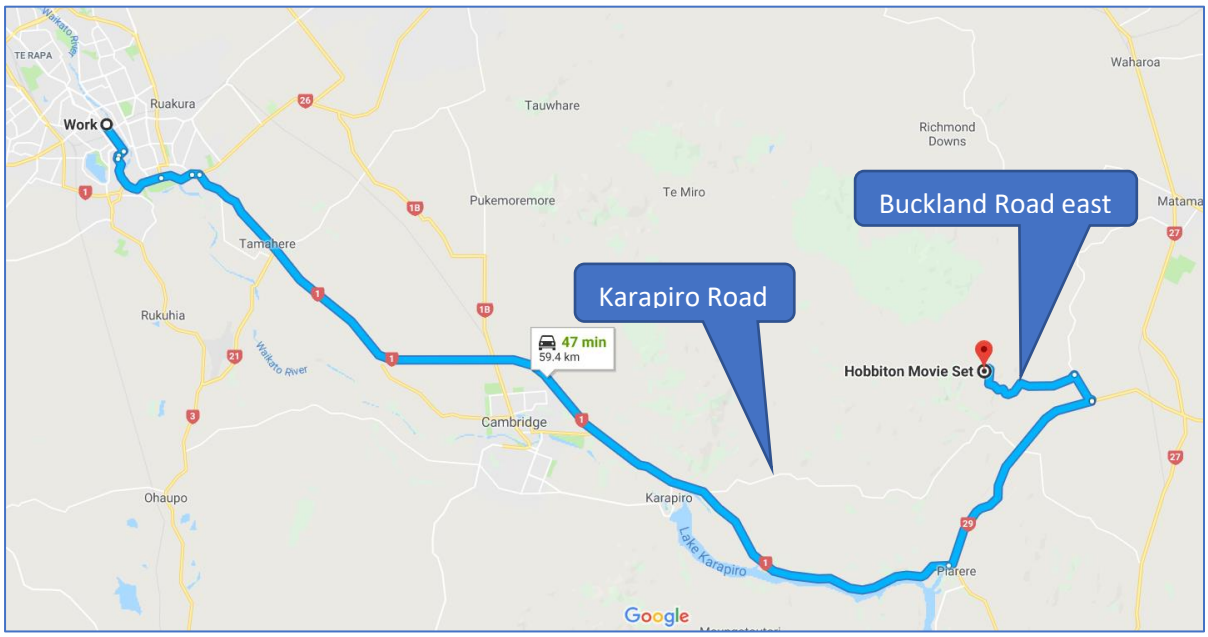
5.17 Items 1-5 and 14 were agreed for RST to implement, and all but Items 4 and 14 have been completed at the time of my site visit on 9 March 2019. Some misunderstanding on RST's part existed that Item 14 was for Council to implement as part of the financial contribution paid. It was recently discovered this was not the case so RST will purchase and install the convex mirrors in the berm opposite accesses #399 and #385 (with my input on position) to maximise the sight distance from these accesses. RST owns the farm land opposite these entrances and consents to them being installed on their land.

5.18 Item 1 has been implemented on the Hobbiton website https://www.hobbitontours.com. By clicking on "Getting There" an interactive map illustrates the preferred routes from Auckland, Hamilton, Tauranga, Rotorua and Taupo. From Hamilton the preferred route is shown (see below) via SH1, SH29 then Buckland Road east, avoiding Buckland Road west altogether. RST is improving this map by putting red 'x' marks through Buckland Road west as illustrated below.



5.19 Item 2, "guidance to tour operators that all buses to Hobbiton should travel via the eastern end of Buckland Road"; RST will implement this under the DCP.

5.20 Item 3, GoogleMaps used to guide traffic to Hobbiton from Hamilton or Cambridge, via Karapiro Road and Buckland Road west. This was changed at RST's request in 2017, as shown below (reference GoogleMaps). The search request direction was from Hamilton to Hobbiton. Buckland Road west does not show unless you zoom right in.



5.21 Item 4, the comprehensive signs strategy on the State Highways and local roads to direct Hobbiton drivers towards the eastern end of Buckland Road, has not been implemented in

full. While it had the support of RST and MPDC roading engineers, it has not gone ahead due to NZ Transport Agency opposition to most of the proposed signs on the State Highways. While I believe these signs only help to improve road safety by providing drivers key way-finding information before a decision is required, the NZ Transport Agency saw the addition of signs as something that did not meet their signs policy for Tourist Activities.

5.22 In my opinion, some key signs were not approved that would have provided safety benefits for helping tourists way-find to Hobbiton, and therefore provide for increased safety of all road users. These include an advance Direction Sign on SH1 prior to the intersection of SH1 / Karapiro Road to advise traffic bound for Hobbiton to continue ahead on SH 1. This would aid in reducing tourist traffic using Buckland Road west, or worse, attempting to u-turn on SH1 after going past Karapiro Road and then seeing that they could have gone that way on a map.

5.23 In my opinion the recent crash west of Hobbiton discussed above between a tourist camper van and Buckland Road resident might have been avoided if a brown Hobbiton tourist sign had been installed to direct tourist traffic to continue on SH1 before the Karapiro Road intersection. I strongly believe that this is a critical and simple piece of infrastructure to help reduce tourist traffic using the less desirable Buckland Road west route.

5.24 Similarly, advanced direction signs on SH1 in both northbound and southbound directions before the SH 1 / SH 29 intersection were recommended to pre-warn tourists to turn into SH 29 for Hobbiton. This is a high safety risk intersection, so clear advanced warning for tourist drivers of a pending turn towards Hobbiton, in my view can only help to reduce the potential for confusion and therefore related crashes.

5.25 A third intersection, SH 29 / Hopkins Road intersection is a key intersection for access to Hobbiton. This intersection previously had only direction signs for Hobbiton located at the intersection itself, advising tourist drivers to turn into Hopkins Road. Following a fatality at the intersection involving tourists in April 2016 the Advanced Direction signs proposed for this intersection in the ITA Sign Strategy were installed on both approaches of SH29, 300m from the intersection. I discuss the safety of this intersection separately below.

5.26 Lastly, the Hobbiton Direction signs proposed in the Sign Strategy for the intersection of SH27/SH29 were also rejected by the NZ Transport Agency. In my opinion these signs are very important to avoid confusion for tourist drivers, particularly given the complexity of this “off-set T” intersection arrangement at this junction.

5.27 In addition to these safety improvements identified in the ITA and agreed with MPDC, I note Mr Black has recommended some further mitigation measures in his Traffic Assessment Review report (11 March 2019). I will address these in Section 6 of my evidence.

SH29 / Hopkins Road Intersection

5.28 This intersection is a well-known high crash risk intersection on SH29. The ITA identified five crashes occurred in the 2012-2016 five year period, one of which was a serious injury crash while another was a fatality crash involving tourists travelling to Hobbiton in 2016. The image below illustrates the intersection layout.

5.29 Information in the NZTA CAS database explains that the fatality crash was caused by a foreign driver turning right from SH29 into Hopkins Road, in the path of a logging truck traveling east on SH29. The intersection has a somewhat complex arrangement with Puketutu Road meeting Hopkins Road at a T-intersection approximately 50 m north of the SH29/Hopkins Road intersection. However, this was not listed as a contributing cause of either the fatality or the serious injury crash. The main safety issue appears to be drivers (often tourist drivers) failing to see or comprehend the speed of opposing vehicles on SH29. The speed limit on SH29 is currently 100 km/h. The lack of advance directional signage was also thought to be a contributing factor in the fatality crash as the driver suddenly turned right in front of the eastbound truck. As mentioned above, this has now been addressed by the NZ Transport Agency.

5.30 I am also aware that the NZ Transport Agency, through the Safe Roads Alliance is currently designing and programming a safety improvement project at this intersection, with some of the works having begun. An "Intersection Speed Zone" is to be trialled at the intersection. The NZ Transport Agency states on their website:

"Intersection Speed Zones are electronic signs that detect when someone is turning into or out of a side road and temporarily reduce the legal speed limit on the state highway (usually from 100 km/h to 60km/h or 70km/h)."

5.31 The website identifies SH29 / Hopkins Road as one of ten intersections in the country receiving this treatment. It will temporarily reduce the speed on SH29 to 60km/h when a vehicle on the side road approaches the intersection, or when a vehicle is turning right from SH29 into Hopkins Road. The Intersection Speed Zone work has started on site with the installation of one of the two electronic signs. I have spoken with the Project Manager for this project and I was advised that there have been delays with the Contractor completing the work for various reasons. The electronic sign that has been installed is also not in its correct position, and should be 30m further away from the intersection. It will be relocated. I am also advised that other safety treatments are being investigated by the Safe Roads team for implementation at this intersection but no specific details were confirmed at the time of writing this evidence. The good news is that the NZ Transport Agency is certainly aware and working to address the safety risks of the intersection.

Buckland Road at Hobbiton (Shire's Rest)

5.32 As mentioned earlier, some improvement work has already been carried out by RST at the exit access to reduce the look of it appearing like an entrance to Hobbiton. RST has done this by physical alterations to the access (addition of boundary vegetation and narrowing the exit access width), along with installing a large sign showing the entrance to Hobbiton is a further 150m north of the exit. RST is also planning the installation of a larger sign at The Shire's Rest entrance to highlight it better.

5.33 The ITA identified that visitors waiting for their tour were seen crossing Buckland Road on foot to take photos of the rural countryside scenery. I witnessed this during one of my earlier site visits. This raises issues of pedestrian safety especially given the operating speed on Buckland Road past Hobbiton is around 60-70 km/h (based on my observations driving the road). The ITA recommended installing signs and markings on the entry and exit access ways to warn pedestrians not to cross the road.

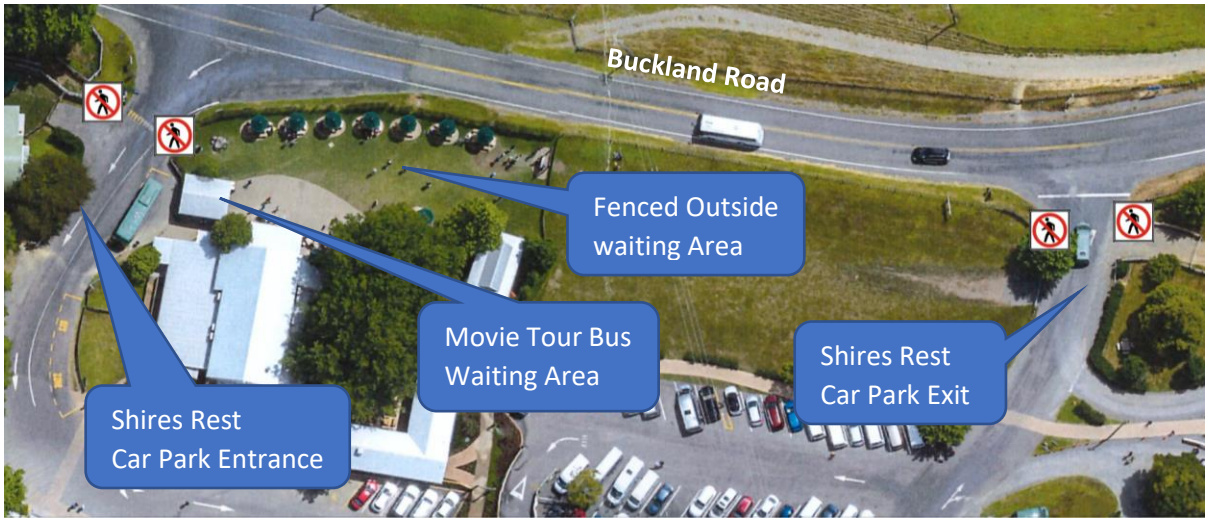
5.34 Since then RST has gone further to address the ease for people to walk out of the site and cross Buckland Road. This has been achieved through:

- Fencing and hedging the boundary around The Shire's Rest outside waiting area, where tourists wait to board their tour bus and where they end their movie set tour.
- Roping off the access points between the waiting area and where tour buses load and unload each tour group. The ropes are dropped only when a bus picks up or drops off a group. Tourists are guided by Hobbiton staff on and off the bus to the fenced waiting area as shown in the photos below.

- Providing a photo opportunity in the site. A large Hobbiton sign exists in the outside waiting area, with a paddock backdrop. This encourages tourists to take photos without stepping out onto the road reserve. The photo below illustrates how this is a popular item.

5.35 In addition to these measures, I consider that it would be beneficial to install universal NO PEDESTRIAN TRAFFIC signs facing into the site on the entrance and exit access ways of the car park. The signs are referred to in MOSTAM as RG-23, and look like this:

5.36 The image below shows the locations that I recommend the above signs to be placed.



5.37 RST also intends to shift the large Hobbiton sign in the photo above to a location further from the road that has a better rural backdrop, and are planning a green screen feature for photos in front of a hobbit themed rural backdrop. Each of these initiatives are likely to help prevent people from wanting to cross Buckland Road to take photos.

5.38 In my opinion all of these measures together constitute significant attempts by RTS to deter people from entering the road reserve and crossing Buckland Road from the site. It is not either legally or practically possible to prevent people from walking onto the road or road reserve, but the measures already in place appear to be working well. Compared with my site visit at the time of writing the ITA when I witnessed two people cross Buckland Road, during this site visit in March 2019 I did not witness anyone crossing or taking photos on the other side of Buckland Road. I was on site for over an hour observing traffic and watching for pedestrians. From my observations the roped off access and fencing around the waiting area provides a psychological barrier, sending the strongest deterrent message to "would-be" pedestrians.

6. COMMENTS ON THE TRAFFIC ASSESSMENT REVIEW (APPENDIX C; S42A REPORT)

6.1 I have read the March 2019 review report, by Mr Black. I note that this review is supplementary to Mr Black's Transportation Review for MPDC dated 11 February 2018 which was carried out to support MPDC's review of PPC50.

6.2 I also note that Mr Black had reviewed the recommended improvement measures in the ITA and attended the site visit with me and the MPDC team on 3 November 2017 to walk-over, discuss and agree the extent of road safety improvement works on MPDC roads to address the PPC50 effects.

6.3 Mr Black's Initial Review concluded that:

"The proposed mitigation aimed at providing additional travel information to visitors through signs, markings, ticketing information and navigation aids should assist in managing the road safety risk to an acceptable level by improving route selection. We support the proposed framework for managing events and requiring traffic management plans.

Other improvements such as a flag light would improve safety at night and on-going parking monitoring would reduce the risk of parking overspill by identifying in advance the need for additional on-site parking areas."

6.4 In addition, the Initial Review states:

"In general, the proposed mitigation appears appropriate. In addition, the plan change should include rules that require:

- *at least one car park space per accommodation unit;*
- *monitoring and reporting of daily visitor numbers; and*
- *Installation of a flag light at the site entry when the accommodation activity is established.*

It is important to note that no-stopping lines do not prevent vehicles from being parked to the left of the markings where there is no kerb, e.g. on a verge. However, a no-stopping sign relates to the full width of the road reserve and prohibits vehicles from being parked on a verge to the left of the roadway. As there is no kerb on Buckland Road both line marking and signs would also be required to enforce no-stopping."

6.5 I generally concur with these conclusions and recommendations of the Initial Review, including the flag light at the site entry if the accommodation and stay-over parking is established. RST is already collecting very detailed data on visitor numbers, and the no-stopping signs have also been installed alongside the no parking lines on Buckland Road.

6.6 However, the March 2019 review by Mr Black responds to the submissions raised in relation to PPC50, and as a result recommends significantly more mitigation than had previously been agreed with Mr Black and MPDC, to the point that Mr Black describes it in the Executive Summary as "*a more onerous requirement for mitigation*". I have some concerns with a number of the "updated" mitigation measures, which are set out in the table below with my comments against each.

6.7 I note that in commenting on these items, I am also effectively addressing the various submissions that triggered Mr Black's response.

Further Mitigation Recommended by Mr Black (Updated Transport Review)	Cameron Inder Response
Complete the Recommended Safety Improvements for Buckland Road proposed in the ITA (Appendix D). Only one of the pull off areas proposed in the ITA has been constructed (at Ch 3750); The truck signs have not been removed; Some directional arrows have not been installed; Convex mirrors have not been installed at #385 and 399 Buckland Road; Thermoplastic markings have not been installed at the site entry and exit;	I agree that all of these items all need to be completed. As discussed in my evidence, RST paid a financial contribution for MPDC to complete all but the 2 convex mirrors. In my view MPDC needs to complete this work as agreed. As per my evidence, I also recommend the "No Pedestrian Traffic" signs be installed at the entrance and exit accesses to the Shires Rest, both facing towards the car park as illustrated above in my evidence. The exact location should ensure they are clearly visible but do not obstruct sight distance for drivers (particularly on the exit access).
Erect appropriate motorist service signs in advance of the pull-off areas	Agree. I recommend a Brown Tourism "Camera" sign as shown below, are installed at both pull-off areas on Buckland Road east.
Install no-stopping markings and signs adjacent to 21 Buckland Road for a minimum of 140m on Puketutu Road and 600m on Buckland Road.	Disagree. In my opinion these recommended no stopping markings and signs off no traffic safety benefit, although they would also not create a traffic safety issue if installed. Buckland Road adjacent to #21 is straight, relatively flat and with good sightlines in each direction. There is no crash history on this section relating to parked vehicles or pedestrian on the road. There is no evidence of traffic effects to justify the installation of no stopping signs and markings, or the enforcement costs and time required by MPDC.
Design and construct further improvements to improve consipicuity of the Buckland Road/ Puketutu Road intersection. As a minimum, this should include a splitter island, signage and lighting.	Disagree. The reported crash history at this intersection is just 3 loss of control non-injury crashes in 7 years. This low crash and non-injury record would not warrant Council or NZTA (if it were a State Highway) to fund any improvements. However, I consider that deleting the northbound white arrow painted on Puketutu Road is likely to alleviate any confusion tourist drivers may be experiencing resulting in a late turn left into Buckland Road, at an inappropriate speed. I note Mr Black states *"On a recent site visit we observed one vehicle miss the left-turn into Buckland Road and u-turn on Puketutu Road before continuing on towards Hobbiton."* It is possible the white arrow played a role in this event. Furthermore, a splitter island could cause more harm if hit side on by a driver losing control, causing the vehicle to roll.

Install chevron and speed advisory signs near 1241 Buckland Road.	Agreed.
Install centreline along length of Buckland Road (west), noting that this will require line marking within Waipa DC.	Agreed. I note the majority of bends on the road already have a centreline. I recommend these be extended to connect to one another.
Design and construct improvements to provide 140m sight distance at the vehicle crossings to 385 and 399 Buckland Road to mitigate the crash risk. This is likely to require lowering of Buckland Road.	Disagree. I consider convex mirrors to be appropriate in this situation to increase sight distances and that lowering the vertical curvature of the road is excessive. I address the reasons why in detail below the table.
Reduce the risk of pedestrian crashes at the Hobbiton site accesses by improving barriers to pedestrians crossing the road or providing designated photo opportunities within the site.	Agreed. Refer to my evidence, the suggested methods are already implemented.
Provide additional travel information to staff to ensure that staff and deliveries use the preferred Buckland Road (east) route when travelling to and from the site. Travel information should specifically state that Rangatunuku Road should be avoided	Agreed. RST will be including recommended travel route information as part of new staff inductions.

Accesses 385 and 399 Buckland Road

6.8 In relation to Mr Black's recommendation to design and construct improvements to provide 140m sight distance at the vehicle crossings to the properties at 385 and 399 Buckland Road; this recommendation appears to be in response to submissions by Carolyn and John Evans, and the Gregan Family Trust. I note the Gregan Family Trust are the land owners of 385 Buckland Road while the owners of 399 Buckland Road did not submit on PPC50.

6.9 Mr Black states in Section 3.2 of the Updated Transport Assessment Review report in relation to the proposed convex mirrors agreed with MPDC for installation at these accesses to improve sight distances, that:

> *"We understand from Council and through submissions that the property owners (#339 and #385) do not want them installed."*

6.10 It is not clear to me where this information is from since the owners of 399 Buckland Road have not submitted on PPC50. However, Mr Alexander's evidence is that he has spoken to the owners of 399 Buckland Road and they are happy for the convex mirror to be installed to help improve the sight distance looking east from their access.

6.11 The Gregan Family Trust submitted that the entrance way to 385 Buckland Road is often blocked by tourists, that there is insufficient room to stop on that section of road, that the same section is popular for tourists to stop on to take photographs, and that in their view

it is unsafe due to unsatisfactory width and absence of proper parking bays on both sides of the road.

6.12 There is nothing in the Gregan Family Trust submission that states they do not want the mirrors. Rather, they submit that *"the implementation of signs and mirrors on this section of Buckland Road would have limited effects beneficial to the safety of road users"*.

6.13 Carolyn and John Evans both submitted in relation to this issue that:

> *"399 and 385 Buckland Road have been identified as hazard spots. Convex mirrors as suggested seems to be a cheap measure to try and fix the problem. Road modification is required to provide clear views for the safety of all road users."*

6.14 I disagree that the convex mirrors will not be beneficial for road user safety. They will provide a benefit, however they will not provide full complying sight distances. The only way to achieve complying sight distances of 140m from both accesses will be to lower Buckland Road. Mr Black correctly states the works will also require service relocations (overhead power lines), regrading the driveway to 399 Buckland Road and resolving property impacts. He states that Council has estimated the costs of lowering this section of Buckland Road by 0.9m as $125,000, excluding service relocations and regrading the driveways. I note that Mr Black refers to their preliminary design showing the road needs to be lowered by up to 2.2m, to achieve complying sight distances. So it would appear that Council's cost estimate is already on the low side of the actual costs. I expect the cost would be in the order of $250,000 once completed with services relocations, slope stability works and drainage upgrades.

6.15 The point is, this is a significant scope of works and cost which I do not believe is justified when convex mirrors added opposite each access will significantly improve the sight distances for each access. I believe lowering Buckland Road is not justified for the following reasons:

- There are no reported crashes in the NZTA CAS database concerning either access, despite the traffic volume increases on Buckland Road since 2011. In fact, there are no reported crashes in the 10 year period to 2009. This suggests both accesses function safely despite the deficient sight distances in one direction each. They function safely most likely due to being low volume accesses with familiar users.
- Austroads Guide to Road Design Part 4a states in relation to Approach Sight Distances at accesses*, "Obtaining ASD at domestic accesses is preferable but may not always be necessary due to the familiarity with their location of the users".*
- Convex mirrors are common for accesses on local rural roads and coastal roads in New Zealand where topography commonly restricts sight distances. They are an effective means of increasing the safety of an access with low volumes and familiar users.

6.16 In addition to these points I note that Mr Black did not recommended lowering Buckland Road to achieve compliant site distances for these accesses in past TIA reports, and he has recommended the use of convex mirrors to improve sight distance for at least one of these accesses and others on Buckland Road. The following relates:

- The Traffic Impact Assessment reports for RST's resource consent applications to allow firstly 150,000 then 300,000 visitors per year were by Gray Matter, authored by Mr Black. The ITA predicted for the 150,000 to 300,000 visitor increase (Traffic Impact Assessment Addendum, 2014) that the crash risk for access ways on Buckland Road east would increase from 1 injury crash per 9.7 years to 1 in 8.9 years. Mr Black considered this 8% increased risk as "low" and no sightline improvement work was recommended for access #385 or #399.

- In the same assessment, Mr Black calculated the crash risk pre-2011 consent to be 1 injury crash in 11.6 years, so pre- 2011 to 300,000 visitors (1 injury crash in 8.9 years) the predicted crash risk based on exposure would increase by 24%. Despite that relative increase in risk from pre-2011 Mr Black did not consider it necessary to lower the crest curve or achieve compliant sight distances at the accesses by other means. The 2014 TIA states *"The increased risk is insignificant and no further mitigation is suggested"*.

- By comparison, for the now projected 650,000 visitors per year Mr Black calculates the increased crash risk to be 12% for the traffic volume transition from 300,000 to 650,000 visitors (March 2019 Table 6; using the Crash Estimation Compendium method), and accordingly Mr Black considers it justified that sight distances now comply with the 140m sight distance requirement. That is despite no recorded crashes in 10 years at either of the accesses and Hobbiton operating at around 640,000 visitors for the past two years.

- A further point, Mr Black led the Post-Construction Safety Audit of Buckland Road on 20/12/13 after widening and rehabilitation works. The Safety Audit team assessed the visibility of access #385 *"to be adequate to the east, and measured it as 110m to the west. The minimum sight distance required is 115m in an 80 km/h speed environment. The visibility is limited by the vertical alignment…"* Notwithstanding that the sight distance measurement in 2013 was 110m looking west and now is significantly worse (65m, March 2019 Table 4) Mr Black's recommendation as Safety Engineer for the deficient sight distance was to install a PW26 "Concealed Exit" sign west of the entrance. No works were recommended to fix the vertical alignment to increase the sightlines before or after the pavement rehabilitation, which would have been the appropriate time to do it. MPDC in response to that item in the Safety Audit agreed with the installation of a PW26 sign as per the recommendation. The sign has been installed.

- Similarly in the same audit report the sight distance of 72m to the east for access #399 was identified as being deficient. The audit team recommended cutting back the bank and installing a convex mirror opposite the entrance, and a PW26 "Concealed Exit" sign. MPDC agreed to the convex mirror and PW26 sign but not cutting back the bank. The sign was installed but the mirror was not. Mr Black also recommended a convex mirror for improving sight distances for access #226. Again MPDC agreed to the mirror in their response. This mirror has not been installed.

6.17 From this it is clear that Mr Black has previously not considered it necessary to achieve compliant sight distances at these accesses given it involved significant vertical alignment works. Mr Black supported the use of convex mirrors at access 399 and others on Buckland Road together with PW26 signs, despite the increase in predicted injury crash risk appearing to be worse then than the change in risk calculated now for PPC50.

6.18 I consider that my recommendation for convex mirrors opposite the accesses of #385 and #399 Buckland Road is appropriate to improve the deficient sight distances and therefore the safety of the access ways. This is on the basis of the accesses being low daily traffic volumes with familiar users, and no recorded crash history over 10 years.

Rangitanuku Road

6.19 One submitter, Kaye Ring, requests the upgrading of Rangitanuku Road. The March 2019 review by Mr Black considers that upgrading is not warranted given the lack of transport effects but goes on to recommend that RST should provide travel information to discourage Hobbiton visitors from using Rangitanuku Road to prevent transport effects associated with the DCP. The recommendation has been supported in the s42A Report and performance standards accordingly. I disagree with both this recommendation by Mr Black and its inclusion in the performance standards.

6.20 There appear to be approximately 35 dwellings accessing Rangitanuku Road and Carmichael Road (a no exit road accessed from Rangitanuku Road). The March 2019 review records that a recent (January 2019) traffic count recorded only 334 vehicles on average use Rangitanuku Road on a daily basis. Typically rural households generate less trips per day than urban residential of 10-11 trips per day. Anywhere from 6- 8 vehicle movements a day from my experience is not unusual for rural households. Taking 8 trips per day equates to 280 daily vehicles for the 35 dwellings accessing Rangitanuku Road. This figure is just 55 trips per day lower than the January 2019 average daily traffic count. January 2019 is the peak tourist time for Hobbiton and so I would expect if large numbers of tourists were regularly using Rangitanuku Road then this would be reflected in the proportion of through traffic in the count. A difference of 55 trips per day from what is reasonably predicted to what has been recorded during Hobbitons busiest time of year suggest just 50 odd movements per day (25 vehicles typically) is through traffic recorded in the count.

Accordingly, from these very low daily traffic flows numbers there appears to be no factual basis for Mr Black's recommendation or for the associated proposed performance standard in the s42A report.

State Highway network

6.21 The NZ Transport Agency submission generally supports the plan change. The NZ Transport Agency has sought the inclusion of a new performance standard to Table 1.1 restricting annual vehicle movements to 387,000 movements. I strongly oppose this figure as a cap for the reasons I discussed earlier in my evidence. Furthermore, it is nonsensical that there could ever realistically be 1,277,500 visitors per year as suggested by the NZ Transport Agency submission if the daily cap of 3500 movie set tour visitors is the only limitation in the Performance Standard on traffic generation. Such a notion ignores the consistent data proving the seasonal pattern effects on visitor numbers to Hobbiton. It is extremely low risk that there would ever be 3500 visitors per day every day in winter passing through Hobbiton movie set tour. By comparison, for the 2018 year an average week in July / August attracted 1215 movie set tour visitors per day compared to approximately 3270 per day in the peak week of January 2019.

6.22 I support the further submission of the NZ Transport Agency opposing the request for a new roundabout at SH29 and Hopkins Road by two Submitters. The safety of this intersection is being studied and addressed at present by the Safe Roads Alliance, with the NZ Transport Agency.

6.23 I note that the NZ Transport Agency has not included within their further submission (FS-3) commentary on the proposal of a Submitter for a right turn bay intersection between SH29 and Rangitanuku Road. Given the low daily traffic volumes discussed above in relation to Hobbiton traffic on Rangitunuku Road I consider that a right turn bay is not at all justified as a traffic effects mitigation of PPC50.

7. OTHER MATTERS RAISED IN SUBMISSIONS

7.1 J Swap Contractors Ltd has sought further improvements to be provided for within the DCP to the west of the site along Buckland Road, at the SH29 intersections with Puketutu Road and Taotaoroa Road and the intersection of SH1 and Karapiro Road.

7.2 Mr Black's March 2019 review recommends that limited improvements to Buckland Road west (consisting of centreline marking and installation of chevron and speed advisory signage) are warranted, while no other locations sought for improvement by the Submitter are recommended for mitigation by Mr Black. I support these conclusions of Mr Black in this regard. It is my opinion that RST should not be liable to pay for roading improvements where impacts of the tourism activity on the transport network will not cause any material

increase in additional crash risk or infrastructure deterioration over that already calculated in the ITA report.

8. CONCLUSION

8.1 I continue to support the conclusions and recommendations of the ITA report for PPC50. In addition, I agree with Mr Blacks further recommended mitigation measures except for:

- Lowering Buckland Road east to provide compliant sight distances at accesses 385 and 399 Buckland Road. I continue to support the use of convex mirrors.
- Constructing further improvements to improve consipicuity of the Buckland Road/ Puketutu Road intersection, including adding a splitter island, signage and lighting.
- Install no-stopping markings and signs adjacent to 21 Buckland Road for a minimum of 140m on Puketutu Road and 600m on Buckland Road.

8.2 I recommend in addition to the mitigation measure identified in the ITA that:

- Gated "No pedestrian traffic" signs facing into the site are installed on the Shire's Rest entrance and exit access ways of the car park. The signs are referred to in MOSTAM as RG-23. Location of the signs is as shown in my evidence.
- The straight ahead white arrow on Puketutu Road northbound lane prior to Buckland Road is deleted, to reduce the potential for driver confusion.
- The Signs Strategy appended to the ITA is implemented to reduce the potential for tourists being lost and therefore increase the safety of all road users. The signs are especially needed in my opinion on State Highway 1 southbound before the Karapiro Road intersection, SH 1 / SH 29 intersection on both SH1 approaches, and SH27 / SH29 intersection.

8.3 I support a cap in the Performance Standard of 3500 movie set tour visitors per day, excluding events held outside of normal movie set tour hours.

8.4 From my assessment I see no traffic effects related reason for the Performance Standards to contain a yearly visitor cap of 650,000 visitors, or a yearly cap of 387,000 trips. This figure is directly related to the 650,000 visitors / year estimate, which was estimated from the 2016 weekly visitor profile.

8.5 The 387,000 trips per annum figure was determined and applied only for calculating the potential pavement impacts and contribution payable to MPDC. It is of no relevance to the measurement and assessment of wider network capacity or safety effects. Exceeding either 650,000 visitors or 387,000 trips per year does not mean there will be increased traffic effects on a daily or hourly basis because there is a daily limit of 3500 movie set tour visitors, which directly affects daily and peak hour traffic generation. If 387,000 trips per annum is applied as a rule in the DCP then it leaves little allowance for Hobbiton visitor numbers and daily traffic to grow in future in the shoulder and winter months, which was a fundamental

finding of the ITA and basis for recommending the 3500 movie set tour visitors per day cap. The daily visitor cap for movie set tours is all that is needed to manage traffic effects to that which has been assessed by the ITA.

8.6 A yearly cap on traffic flows would also place an onerous traffic counting and monitoring requirement on RST to continuously carry out, which is unnecessary and effectively places no faith in the extensive assessment work that has gone into the ITA for PPC50. This assessment work identified strong correlations between the number of visitors on a daily basis and daily trip generation and parking demand. It is nonsensical that there could ever realistically be 1,277,500 visitors per year as suggested by the NZ Transport Agency if the daily cap of 3500 movie set tour visitors is the only limiting Performance Standard. Such a notion ignores the actual data proving consistent seasonal pattern effects on visitor numbers to Hobbiton.

Cameron Inder
Transportation Engineering Manager
Bloxam, Burnett & Olliver Limited

25 March 2019

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Attachment 1 – Site Locality

Hobbiton Movie Set Site Locality