Monday, 10 October 2022

Te Hui o Te Kaunihera ā-Rohe o Heretaunga
Hastings District Council
Commissioner Hearing Meeting

Kaupapataka
Agenda

Te Rā Hui: Meeting date:	**Monday, 10 October 2022**
Te Wā: Time:	**9.00am - Pre-circulated Traffic Evidence - Applicant**
Te Wāhi: Venue:	**Council Chamber** **Ground Floor** **Civic Administration Building** **Lyndon Road East** **Hastings**
Te Hoapā: Contact:	**Democracy and Governance Services** **P: 06 871 5000 | E:** democracy@hdc.govt.nz
Te Āpiha Matua: Responsible Officer:	**Group Manager: Planning & Regulatory Services - John O'Shaughnessy**

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Monday, 10 October 2022

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Hastings District Council: Commissioner Hearing Meeting

Kaupapataka

Agenda

Te Komihana Whakahoahoa: Hearing Commissioner:	*Heamana* **Chair:** Commissioner Bill Wasley
Apiha Matua: Officer Responsible:	Group Manager: Planning & Regulatory Services – John O'Shaughnessy
Mahere Maarama: Reporting Planner:	Senior Environmental Planner (Consents) - NAME
Te Rōpū Manapori me te Kāwanatanga: Democracy & Governance Services:	Christine Hilton (Extn 5633)

Te Rārangi Take

Order of Business

1.0 Apologies & Leave of Absence – *Ngā Whakapāhatanga me te Wehenga ā-Hui*

At the close of the agenda no requests for leave of absence had been received.

2.0 Traffic Evidence pre-circulated from Applicant for Parkhills Studio hearing - Limited Notified Resource Consent Application From No.8 Studios Limited To Establish A Screen Production Studio In The Rural Zone At Gordon Road and 376 Parkhill Road, Te Awanga (RMA20210474)

DOCUMENTS CIRCULATED FOR HEARING - COMPILED AS ONE DOCUMENT

Document 1 The covering administrative report **Pg 1**

Attachments:

1	Attachment 1 - Stephen James' Traffic Evidence	104672#0314	Pg 3
2	Attachment 2 - Appendices for Stephen James' Traffic Evidence	104672#0315	Pg 41
3	Attachment 3 - Attachment E from Stephen James' Traffic Evidence	104672#0341	Pg 65

The Application and Submissions can be viewed on the Council website.

Monday, 10 October 2022

Te Hui o Te Kaunihera ā-Rohe o Heretaunga
Hastings District Council: Commissioner Hearing

Te Rārangi Take

Report to Commissioner Hearing

Nā: From:	**Christine Hilton, Democracy and Governance Advisor**
Te Take: Subject:	**Traffic Evidence pre-circulated from Applicant for Parkhills Studio hearing - Limited Notified Resource Consent Application From No.8 Studios Limited To Establish A Screen Production Studio In The Rural Zone At Gordon Road and 376 Parkhill Road, Te Awanga (RMA20210474)**

1.0 Purpose and summary - *Te Kaupapa Me Te Whakarāpopototanga*

1.1 The purpose of this report is to have a means to attach the Applicant's pre-circulated traffic evidence for the above hearing and to put it onto the website prior to the hearing.

2.0 Recommendations - *Ngā Tūtohunga*

That the Traffic Evidence pre-circulated from Applicant for Parkhills Studio hearing - Limited Notified Resource Consent Application From No.8 Studios Limited To Establish A Screen Production Studio In The Rural Zone At Gordon Road and 376 Parkhill Road, Te Awanga (RMA20210474) be put onto the website prior to the hearing on 10 October 2022 so it can be viewed by the submitters and members of the public.

Attachments:

A⇩	Stephen James' Traffic Evidence	104672#0314
B⇩	Appendices for Stephen James' Traffic Evidence	104672#0315

C⇩ Attachment E from Stephen James' Traffic Evidence 104672#0341

IN THE MATTER	of the Resource Management Act 1991 ("**RMA**" or "**the Act**")
AND	
IN THE MATTER	of a resource consent application to **HASTINGS DISTRICT COUNCIL** for a land use consent to establish and operate a screen production studio at Te Awanga

STATEMENT OF EVIDENCE OF STEPHEN CHARLES JAMES ON BEHALF OF NUMBER 8 STUDIOS LIMITED

Dated 23 September 2022

Introduction

1. My full name is Stephen Charles James.

2. I hold the qualifications of Masters in Engineering (Transportation) from Canterbury University. I am a chartered member of Engineering New Zealand (Engineering Technician) and a member of the Transportation Group (a technical interest group of Engineering New Zealand). I have 34 years' experience in traffic, transport and safety engineering.

3. I have been a Principal Safety Engineer at Urban Connection Limited since April 2022. Prior to that, I was employed by Waka Kotahi New Zealand Transport Agency for 12 ½ years as a Senior Safety Engineer, in the Wellington and Top of the South regions.

Code of Conduct for Expert Witnesses

4. I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2014. I confirm that I have considered all material facts that I am aware of that might alter or detract from the opinions I express, and that this evidence is within my area of expertise, except where I state that I am relying on evidence of another person.

Scope of Evidence

5. In this evidence I provide a summary of my expert opinion regarding the traffic effects of the proposed development, being the construction and operation of a screen production studio at Te Awanga, accessed through Parkhill Road ("**the Proposal**").

6. In particular, my evidence will cover:

   (a) A brief description of the Proposal as it relates to traffic;

   (b) The existing environment, including the current:

      i. transport infrastructure;

ii. travel patterns; and

iii. road safety performance;

(c) The traffic generated by the Proposal and its distribution on the road network;

(d) My assessment of the traffic effects generated by the Proposal including the performance of local intersections;

(e) The layout and design of the Proposal, including proposed mitigation measures; and

(f) The traffic related concerns raised through independent peer review on behalf of Hastings District Council;

(g) The traffic related concerns raised in submissions on the application.

7. This evidence incorporates the relevant content from the Traffic Impact Assessment ("**TIA**") attached to the application Assessment of Effects on the Environment ("**AEE**") along with the Section 92 response letter prepared by Urban Connection dated 17 November 2021 ("**S92 Response**") such that further reference by the Commissioner to the TIA or S92 Response should not be required in considering this evidence.

Brief Description of the Proposal as it relates to Traffic

8. In preparing this evidence I have:

(a) Reviewed the AEE and proposed development plans.

(b) Reviewed the s 42A report and the statement of evidence of Mr Michael Smith dated 14 September 2022 (Attachment 36 to the Section 42A report).

(c) Liaised with Mr Derek Slade and Mr Steve Peakall regarding issues of film production management and timing, and associated traffic noise effects.

(d) Conducted a site visit to Parkhill Road and the surrounding highway network, including observing the behaviour of vehicles and people near Haumoana School and Te Awanga Kindergarten; and

(e) Reviewed the submissions on the application (in particular the submissions of Te Awanga Kindergarten, Mr and Mrs Caseley and Mr Hursthouse).

9. The Proposal is comprised of those elements set out at section 1.4.1 of the AEE, including the following which are of specific relevance to the evidence in relation to traffic which follows:

(a) Two studio buildings with a covered breezeway between each adjoining building totalling approximately 6,440m2 of gross floor area:

(b) A construction workshop of approximately 1,050m2 gross floor area;

(c) A double storey production building with a footprint of approximately 1,080m2 and a gross floor area of approximately 2,160m2;

(d) A catering café of approximately 420m2 gross floor area;

(e) Parking for cars in three separate areas totalling approximately 325 car parking spaces and seven accessibility parks;

(f) A separate parking area for up to 12 accommodation trailer / caravan parking spaces; and

(g) The construction of approximately 2.5km of private road.

10. The studios will be used by production companies for the filming of movie, television or streaming service productions with approximately 70 people permanently occupying the site and whereby there may be over 350 people using the site at one time

during the filming of a production. Operating hours are typically from 6.00am to 6.00pm with filming generally starting between 8.00 to 8.30am, with each film production expected to last, on average, 22 weeks.

11. All the vehicles accessing the site will enter and exit via Parkhill Road and the proposed new private road.

12. Traffic generation will be most intensive during two specific periods:

    (a) "site set up" taking approximately two weeks per production where trucks transport props and necessary equipment to the site, generating an expected 14 heavy commercial vehicle movements per day outside peak hours of the road network (8.00-9.00am and 4.30pm to 5.30pm) and school pick-up hour (2.30-3.30pm); and

    (b) "production" taking approximately 22 weeks per production when additional people (including cast and crew) need to access the site on a daily basis, generating an expected (maximum) 470 private vehicle movements per day with peak flows from 6.00-7.00am and 5.00-6.00pm. Peak afternoon vehicle flows are expected to be approximately 118 per hour.

13. Maps of the surrounding highway network, indicating the relevant intersections and other details are attached as **Appendix A**.

14. At the Parkhill Road/Raymond Road intersection, all trips generated by the Proposal are expected to be undertaken to and from the north. The Proposal is expected to generate left-turn movements (relative to the priority direction of the road) onto Parkhill Road (southbound) during the morning and right-turn (again, relative to the priority direction of the road) movements onto Parkhill Road (northbound) in the afternoon/evening.

15. At the East Road/Parkhill Road intersection, trips generated by the Proposal is expected to be 80:20 to north:east. The Proposal is expected to generate mostly right-turn movements (relative to the priority direction of the road) onto Parkhill Road (southbound) during the morning and left-turn movements (again, relative to the priority direction of the road) onto Parkhill Road (northbound) in the afternoon/evening.

16. This is discussed in further detail in the following sections.

Existing Environment

17. The site is located at the end of Parkhill Road in the Te Awanga township (refer to plan in Appendix A), in the territorial area of the Hastings District Council ("HDC"). As such, it requires compliance with the Hastings District Plan and with adopted standards and guidelines of the Road Controlling Authority. The land area occupied by the site is currently rural farmland with other additional activities occurring onsite, being:
    (a) The Clifton Cricket Club;
    (b) Outfoxed outdoor adventure activities;
    (c) 'Outfield Music Events';

    as detailed in section 1.3 of the AEE.

Transport infrastructure

18. Parkhill Road is split into three sections/classifications under the One Network Road Classification ("**ONRC**"). It is classified as a Primary Collector from Haumoana Road to East Road, Secondary Collector from East Road to Raymond Road, and an Access Road from Raymond Road until its southern end.

19. The section of Parkhill Road from East Road to Raymond Road is approximately 11.1 m wide, with 3.3 m wide lanes, a 0.4 m wide

sealed shoulder on the west side of the road and a 1.6 m wide sealed shoulder on the east side. A shared path, 2.5 m wide, is also provided on the east side of the road. Flexi-posts separate the carriageway from the shared path, which connects to the path provided on the south side of East Road.

20. The section of Parkhill Road, from the intersection with Raymond Road to the end of the road, varies in width from 3.6 m to 7.5 m, as follows:
    a) From RS 2.038 (Raymond Road) to RS 2.118: Over this 80 m long section, the road is approximately 7.5 m wide, with 3 m wide lanes and 0.5 to 1 m wide sealed shoulders. This section has centreline and edgeline markings. Road widening is provided along this section, used as parking bays for the Te Awanga Kindergarten. A short extension of footpath (2 m wide) is provided on the west side of the road along the parking extent.
    b) From RS 2.118 to RS 2.798: The road is approximately 6 m wide, with no road markings or footpaths over this 680 m long section.
    c) From RS 2.798 to RS 3.343: The road is approximately 3.6 m wide, and road markings and footpaths are not provided. This section is 545 m long.
    d) From 3.343 to RS 3.773 (end of the road): The road is approximately 5 m wide, with no road markings or footpaths over its final 430 m in length.

21. The posted speed limit on Parkhill Road is 80km/h; this speed limit came into effect on 1 March 2021. The average operating speed along Parkhill Road is 54 km/h south of Raymond Road, 55 km/h between Raymond and East roads, and 75 km/h to the north of East Road. This data was obtained from 7 to 16 December 2020 using Google traffic data (source: Mooven).

22. A weeklong traffic tube count (south of Home Road , and 280m to the south of Raymond Road), from September 2022 indicates an 85th percentile speed along Parkhill Road (south section), of 76 km/h, and an average speed in the range of 50 km/h to 60 km/h.

23. A 50 km/h courtesy zone extends from approximately 190 m to the south and 120 m to the north from the Parkhill Road/Raymond Road intersection, given the Haumoana School and the Te Awanga Kindergarten are located in this vicinity. Waka Kotahi and HDC are working on a programme to introduce school speed zones to all schools within the district by the end of 2024. These school speed zones will lower the speed limit in the vicinity of the educational facilities (these school speed zones operate usually between 8.15am to 8.55am, and 2.30pm to 3.10pm). An Active School Zone sign is provided for southbound vehicles on Parkhill Road.

24. Raymond Road is classified as a secondary collector road under the ONRC, being approximately 1.7 km long. The road is approximately 8.5 m wide in the vicinity of the intersection with Parkhill Road, having 3.2 m wide lanes and 0.4 to 1.7 m wide sealed shoulders. Angle parking (47 spaces) is provided on both sides of the road along the Haumoana School's frontage, where a 2 m wide footpath is also provided on the south side of the road. To the west of the school, no footpaths are provided, as typical of rural settings. Dragon teeth road marking is provided in front of the school.

25. The posted speed limit on Raymond Road is 80 km/h; this came into effect in March 2021. A 50 km/h courtesy zone starts approximately 270 m to the west of the intersection with Parkhill Road. An Active School Zone sign is provided for eastbound vehicles on Raymond Road.

26. East Road is an arterial road under the ONRC, located to the north of the site. It is approximately 880 m long, being 9.3 m wide, with 3.5 m wide lanes and 1 to 1.2 m wide sealed shoulders. A 2 m wide shared path is provided on the south side of the road, connecting to Parkhill and Clifton roads. Rubber semi-mountable kerbs and Flexi-posts along East Road separate the shared path and carriageway.

27. The Parkhill Road/Raymond Road intersection, located about 1.7 km north of the proposed site entrance, is Give-Way controlled. The priority flow is along the curve which connects Raymond Road and Parkhill Road (north of the intersection). It is noted that the corner at the intersection has 25 km/h advisory speed signs. There is no right turn lane on Raymond Road for movements onto Parkhill Road (south section) from Raymond Road, and there is no splitter island on Parkhill Road (south section) to separate entry/exit turning movements to/from Parkhill Road (south section).

28. The East Road/Parkhill Road intersection is also Give-Way controlled. The priority flow is given along the bend which joins East Road and Parkhill Road (north of the intersection). The corner at the intersection has 35 km/h advisory speed signs. A right turn bay is provided on Parkhill Road (north section) for movements onto Parkhill Road (south section). A splitter island is provided on Parkhill Road (south section), separating entry/exit turning movements to/from Parkhill Road.

29. Inserts to Appendix A show the layout of these intersections in aerial view.

Travel patterns

30. The latest available traffic count data for the surrounding network has been obtained from the HDC website and is provided in Table

1 below. It is noted these traffic volumes differ from the those in the TIA as HDC have updated them since the TIA was issued. Note these are annual average daily traffic volumes.

31. An arithmetic traffic growth of 3% per annum has been applied to provide 2022 average daily traffic volumes. This is based on historic traffic growth.

Table 1: Daily Traffic Volumes

Road Name	Section	Annual Daily Traffic (vpd)	Year of Latest Count	Updated (2022) Annual Daily Traffic (vpd)
Parkhill Road	South of Raymond Road	179	2020	190
	Raymond Road to East Road	805	2020	853
	North of East Road	2,701	2020	2863
Raymond Road	Vicinity of Parkhill Road	483	2020	512
East Road	Vicinity of Parkhill Road	3,368	2020	3,570

32. The weeklong traffic tube count from September 2022, located on Parkhill Road, 280m south of Raymond Road, indicates an average daily traffic flow of 142 vehicles per day.

33. Peak hour turning count surveys were undertaken using an unmanned aerial vehicle (“UAV”) to observe traffic flow conditions in the AM peak (8 to 9 am) and School PM peak period (2:30 to 3:30 pm) at the Parkhill Road/Raymond Road and East Road/Parkhill Road intersections. The peak counts were undertaken on 12 and 13 December 2020 at the East Road/Parkhill Road intersection and Parkhill Road/Raymond Road intersections, respectively. The traffic count is summarised by total volume on each road (Table 2). The peak hour turning counts are shown in Figure 1 and

34. Figure 2 below.

Table 2: Traffic Counts Summary

Peak	Intersection					
	Parkhill Rd/Raymond Rd Intersection			East Rd/Parkhill Rd Intersection		
	Parkhill Rd - south (vph)	Parkhill Road - north (vph)	Raymond Rd (vph)	Parkhill Rd - south (vph)	Parkhill Road - north (vph)	East Rd (vph)
AM	49	185	152	214	411	341
School PM	141	239	142	212	425	373

Figure 1: Parkhill Road/Raymond Road Existing Peak Hour Turning Counts

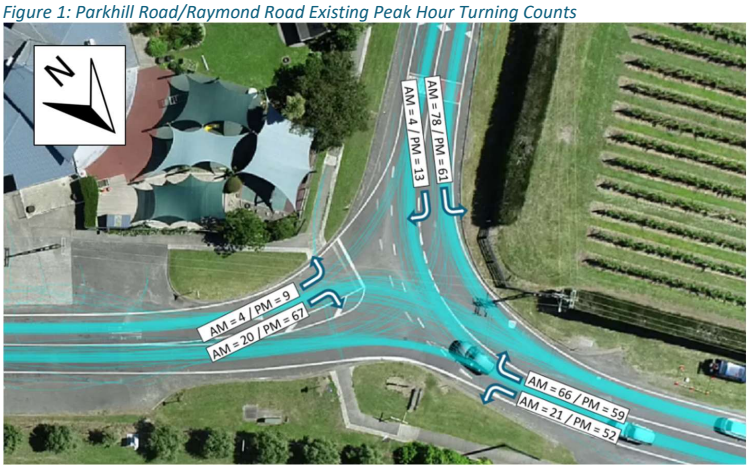
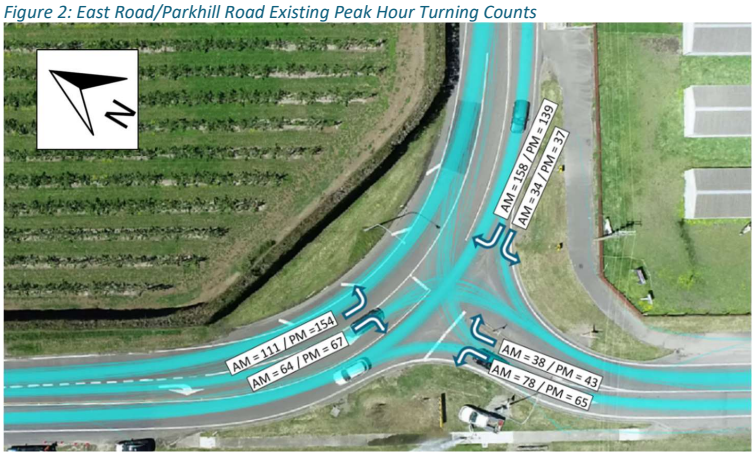


Figure 2: East Road/Parkhill Road Existing Peak Hour Turning Counts



35. Pedestrians and cyclists were also counted at the Parkhill Road and Raymond Road intersection during the December 2020 counts in the AM peak (8 to 9 am) and School PM peak period (2:30 to 3:30 pm) and these numbers are indicated in the table below. The weather was sunny, and the road was dry. Note however that seven cyclists and one pedestrian were observed crossing Parkhill Road in the school AM peak and nine cyclists and one pedestrian in the school PM peak doing the same. The school roll for Haumoana School is 180 children indicating that a small portion of school students walk or cycle to school. No children or adults were observed walking or cycling to/from Te Awanga Kindergarten.

Table 3: Peak Hour Vulnerable users at Parkhill Road and Raymond Road intersection

Road Name	Section	Number of pedestrians (AM/PM)	Number of cyclists (AM/PM)
Parkhill Road	South of Raymond Road	10/2	16/12
Raymond Road	Vicinity of Parkhill Road	9/11	11/12

36. I also undertook manual turning movement counts at the Raymond Road/Parkhill Road intersection in September 2022 and can confirm that the December 2020 turning counts were similar to those in September 2022. The weather was warm, and the road was dry. During my observations, in the AM peak I noted five children and two adults walking towards the school and two children on cycles. In the school PM peak, I noted three adults walking towards the school, and two children and two adults walking away from the school. All these people crossed over Parkhill Road near the intersection with Raymond Road.

37. I also undertook an afternoon count in September 2022, during the network peak afternoon hour period, from 4.30pm to 5.30pm. The observed traffic movements were approximately 50% less than those observed during the school PM peak time of 2.30pm to 3.30pm.

38. On the basis of these onsite observations, I have used the December 2020 turning movements as the base flows for the network and assumed the peak 2.30pm to 3.30pm school time turning movements as the PM peak hour flows, for robustness/conservatism.

Road safety

39. I have reviewed the current safety performance of the highway network to determine the nature of crash types and severity within the site vicinity. The extent of the assessment is Parkhill Road, from East Road to the end of Parkhill Road, including the section of Raymond Road that extends past Haumoana School. The Waka Kotahi NZ Transport Agency's Crash Analysis System (CAS) database shows that there have been four crashes in the last five-year period, including the current year (2017 to 2022). Note the TIA reviewed the 2015 to 2020 period which was the current five-year period at the time of the TIA release.

40. None of the crashes in the last five years were fatal or serious, one was a minor injury crash, and the other three were non-injury crashes. The crashes in the site vicinity consisted of:

- One non-injury crash on Parkhill Road, just north of the Raymond Road intersection. This was a single vehicle incident where Police were called due to swearing and yelling being heard. The vehicle was located in the ditch on the side of the road.
- Three loss of control turning crashes at the East Road/Parkhill Road intersection. One crash resulted in a minor-injury and two were non-injury crashes. One of the crashes involved westbound traffic, one eastbound traffic and one northbound traffic. It is noted that two out of the three crashes occurred in wet and dark conditions.

41. The crash history along Parkhill Road indicates no underlying safety issues, given the relatively low crash frequency and severity.

42. At the East Road/Parkhill Road intersection, the crash history indicates a pattern of loss of control turning type crashes at the 35 km/h speed advisory corner. It is noted that two of the three

crashes at this intersection were in wet and dark conditions. However, the intersection is classified as a low risk according to the Waka Kotahi High Risk Intersection Guide.

43. Table 6 of the Waka Kotahi 2022 Speed Guidelines indicates Parkhill Road has a safe and appropriate speed of 80 km/h. As referred to earlier, the posted speed limit is 80 km/h, however the average speeds are much lower, between 50 and 60 km/h.

Proposal Traffic Generation and Distribution

Traffic Generation

44. Approximately 100 HCVs (100 arrivals, 100 departures) are expected to travel to and from the site, the majority before production starts, to set up assorted items required for filming. Site setup is expected to take up two weeks; therefore, the predicted 200 HCV trips to be generated by the trucks will be spread over this period. This is expected to generate approximately 14 HCV movements per day onto Parkhill Road. Truck drivers are to be instructed to avoid travelling to and from the site in the peak hours of the road network, being 8 to 9 am and 4.30 to 5.30pm, along with the school pick-up hour, 2.30 to 3.30 pm.

45. I have not undertaken any additional assessment of the HCV effects during site set up, as these effects are of a lower magnitude than the effects arising during film production as now addressed.

46. Trip generation during film production has been based on staff figures provided to me by the applicant. These have been taken from a recent TV production based in Auckland, which was of a similar size and nature to the productions which the Proposal is hoping to attract. I believe this data is appropriate to be used to predict traffic related effects from the Proposal, albeit a conservative comparison as staff numbers and associated

vehicle movements generated by the Proposal would generally be considerably lower than those generated by the recent production in Auckland (as explained by Mr Slade).

47. During every 22 weeks of production, principal production works are to start from 6 to 7 am, with an expected (approximate) 11-hour workday. It is assessed that the site's peak flows will occur from 6 to 7 am and 5 to 6 pm. Therefore, trips to the site are expected outside the AM peak and PM school and network peak periods (8am to 9am, 2.30pm to 3.30pm and 4.30pm to 5.30pm). Departures from the site are expected during 5.00 pm to 6.00 pm, but again noting that the existing traffic on the network at this time are observed to be 50% less than that during the 2.30pm to 3.30pm PM peak hour (as explained above).

48. Typically, filming staff (crew and supporting) are expected to arrive and depart the site in rental vans. However, using a conservative approach, this assessment has considered these trips as if they were to be undertaken by private vehicles. A vehicle occupancy rate of two persons per vehicle has been used, also considered to be conservative in nature. The daily trips to be generated by the site are detailed in Table 4 below.

Table 4: Daily site trip generation

Trip generator	Quantity	Number of vehicles	Daily trips (vpd)	Network PM Peak hour trips (vph)
Production Staff	40	20	40	10
Construction Staff	30	15	30	8
Filming staff (crew and supporting)	400	200	400	100
Total	**470**	**235**	**470**	**118**

49. As noted in paragraph 31, Parkhill Road (south of Raymond Road) has an existing average daily traffic volume of 190 vehicles per day, which will increase to 660 vehicles per day as a result of

the proposal, i.e. 190 existing vehicles plus 470 proposed vehicle movements during production, as above in Table 4. The HDC Code of Practice indicates that a rural access road (which is what Parkhill Road south of Raymond Road is currently classified as) can accommodate up to 200 vehicles per day, with a carriageway width of 5.5m (for low level agricultural activity). For a rural road accommodating up to 1,000 vehicles per day, Parkhill Road should be classified as a secondary collector.

50. The Hastings District Plan standards for this road classification (secondary collector) requires a carriageway width of 6m, with 1m sealed shoulder (0.5m either side, i.e. a total of 7m). The applicant proposes to widen Parkhill Road to 6m where it is currently less than that width.

51. I consider a 6m width is more than adequate to provide for a safe environment for all users and would be fit for purpose. The existing Parkhill Road is a dead-end road, straight, and with tidal flows from the Proposal, a 6m width will be able to accommodate the traffic generated by the Proposal, cater for existing traffic and provide for safe passage of cyclists and the occasional pedestrian.

52. I have noted however that the existing sub-standard widths of Parkhill Road, south of Raymond Road to the end, are not in accordance with the requirements of the Hastings District Plan for a road classified as an access road. This requires a 5.5m width, and parts of the road are only 3.6m wide in places, and 5m in others. Approximately 1km of the 1.7km total length of Parkhill Road between Raymond Road and the end is 5m wide or less.

53. The hourly trip profile has been determined from data received from the applicant, based on a similar production within New Zealand. I consider this data to be appropriate for use for this proposal. The percentage hourly profile of the similar production has been used but adjusted to the predicted daily traffic flows for

the Parkhill Road Proposal to determine the arrival and departure flows to/from the site, as indicated in Table 5 below.

54. As is normal for a TV production studio, everyone needs to be on-site and ready to go by the first call time, which is nominally 8am, or 8.30am at the latest. TV production staff typically work long days, up to 11 hours, meaning arrival times of between 6am and 7am, and departures times mainly between 5pm and 6pm are the norm.

55. The data received from the applicant was from an Auckland site with a first call of 8am, and with no restriction on early morning hours.

Table 5: Hourly site trip profile and numbers based on expected traffic generation from the proposed studio

Hour	Arrival %	Departure %	Arrivals	Departures
0400-0500	8%	0	19	0
0500-0600	10%	0	24	0
0600-0700	50%	0	118	0
0700-0800	27%	0	63	0
0800-0900	3%	0	7	0
0900-1000	2%	0	5	0
1000-1100	0	0	0	0
1100-1200	0	0	0	0
1200-1300	0	0	0	0
1300-1400	0	0	0	0
1400-1500	0	0	0	0
1500-1600	0	8%	0	18
1600-1700	0	24%	0	57
1700-1800	0	50%	0	118
1800-1900	0	18%	0	42
Total	**100%**	**100%**	**235**	**235**

56. The table above indicates that the AM peak hour of the production studio (0600-0700) does not coincide with the network and school AM peak hour (8am to 9am), as was mentioned previously in paragraph 47. There is an overlap with the network PM peak hour of 4.30pm to 5.30pm, but again noting the existing traffic volumes at this time are less than 50% of those recorded during the school peak hour of 2.30pm to 3.30pm.

57. The traffic numbers shown in Table 5 include an element of the day-to-day traffic that is usually generated by this type of development, such as for deliveries, maintenance, visitors, trade services, etc. I have assumed a worst-case scenario regarding arrival and departures times to condense them on the network.

In reality, there will be a lower number of ongoing arrivals and departures during the day, however 470 vehicle movements are considered the absolute maximum per day and is a conservative number.

58. For robustness, I have adopted the network peak traffic movements, (8am to 9am, 2.30pm to 3.30pm) and combined these volumes with the Development peak traffic movements (6am to 7am, 5pm to 6pm) and combined the movements to reflect a worst case scenario.

Table 6: Assessed peak hour traffic movements for Parkhill Road

Road Section	Period	Existing Traffic	Development Traffic	Total Traffic	Sensitivity (Development plus 50%)	Total
East Road - Raymond Road	AM Peak	214	118	332	177	391
Raymond Road - Site Entrance	AM Peak	49	118	167	177	226
East Road - Raymond Road	PM Peak	212	118	330	177	389
Raymond Road - Site Entrance	PM Peak	141	118	259	177	318

59. The site has no connectivity to public transportation, as is typical for rural areas. Walking trips to and from the site are not likely to occur, as no walking facilities are provided on Parkhill Road, south of Raymond Road, and the site sits outside a desirable range for trips by foot to be comfortably undertaken. Cycling trips from Haumoana and Te Awanga to the site could be provided, given the available facilities throughout these townships, and along East Road and Parkhill Road (up to the intersection with Raymond Road). South of the Parkhill Road/Raymond Road intersection, there are no specific cycle facilities, but cycling trips could be undertaken by the shared use of this relatively low-volume road. However, these trips could be considered few in number as only a small portion of the staff is expected to reside or be hosted in Haumoana and Te Awanga.

60. On this basis, the applied trip rate could only be moderately reduced to factor in other transportation modes being used by filming staff and crew. The traffic network impact assessment is conducted conservatively with the assigned trip rates remaining unchanged to ensure it is robust.

Traffic Distribution

61. The site will be accessed from the southern end of Parkhill Road. Given the accessway's location, all site's trips will be undertaken to and from the north. The in:out (entry:exit) split is predicted to be 80:20 in the site's AM peak hour (6 to 7 am) and the reverse in the site's PM peak (5 to 6 pm). However, for assessment purposes, all trips have been distributed as being into the site in the network AM peak and out of the site in the network PM peak, again with the purpose of testing robustness/conservatism.

62. At the Parkhill Road/Raymond Road intersection, all trips to be generated by the site are expected to be undertaken to and from the north. This is because the alternative route, via Raymond and Tukituki Roads, would result in a greater travelling distance and time compared with the Parkhill Road route (4.6 km and 2.3 km, respectively). Therefore, the site is expected to generate left-turn movements onto Parkhill Road (southbound) in the AM peak hour and right-turn movements onto Parkhill Road (northbound) in the PM peak period at this intersection.

63. At the East Road/Parkhill Road intersection, the directional split of trips to be generated by the site is expected to be 80:20 to north:east. This is because most of the staff is predicted to reside or be lodged in Hastings and Napier (higher urban density), with a few staff travelling to and from Haumoana and Te Awanga townships. At this intersection, most of the site's trips are expected to generate right-turn movements onto Parkhill Road (southbound) in the network AM peak period and left-turn

movements onto Parkhill Road (northbound) in the network PM peak period.

64. The traffic diagrams, shown in **Appendix B**, illustrate the expected traffic flows at the accessway to the site and adjacent intersections. To be conservative, the site peak traffic flow has been added to the AM and PM peak hour traffic flows, as noted above. In reality, this will not occur as previously explained, but provides a worst-case scenario.

Proposal Traffic Effects

65. The impact of the expected traffic generated by the proposed development applied to the existing traffic volumes at the surrounding intersections has been assessed to determine the Practical Absorption Capacity in the network peak periods, with guidance provided in the Austroads Guide to Traffic Management Part 2, 2020. This assessment has used the site's trip generation and distribution (shown in **Appendix B**), considering a worst-case scenario – i.e., the higher turning movements in either peak period.

66. The results of the practical absorption capacity tests are shown in Table 7 below. The theoretical capacity of an intersection is compromised once the practical capacity (degree of saturation) reaches 0.8.

Table 7: Practical Absorption Capacity Results

Intersection & Peak Hour	Practical Capacity (degree of Saturation) - Existing	Practical Capacity (degree of Saturation) - Developed
East/Parkhill – AM Peak	0.36	0.43
East/Parkhill – PM Peak	0.36	0.47
Parkhill/Raymond – AM Peak	0.23	0.23
Parkhill/Raymond – PM Peak	0.28	0.39

67. The table above indicates both intersections have plenty of spare capacity and can easily accommodate the proposed traffic

movements generated by the site in addition to the existing (network) traffic flows. Please note that this is a worst-case scenario as in practice the site's AM peak flows do not coincide with the network AM peak hour, and in the PM peak hour we have assumed the school peak hour traffic volumes rather than the actual peak network hour volumes, as explained earlier.

68. I have further tested the intersections with an increase in site generated traffic flows of 50%, in order to test the capacity of the intersections in the unlikely event of increased traffic flows. This test indicates an increase to 0.53 (from 0.47) for the maximum practical capacity (degree of saturation) for the East Road/Parkhill Road in the PM peak period and an increase to 0.45 (from 0.39) for the maximum practical capacity (degree of saturation) for the Raymond Road/Parkhill Road in the PM peak period. This indicates plenty of spare capacity available at both intersections.

69. In order to further verify the available capacity of the intersections, modelling of both intersections has been carried out by my colleague (Mr Aaron Campion – Technical Director), using SIDRA. SIDRA is a well-known computer simulation model used to assess queue delays and capacity on all road intersections and is extensively used in Australasia. The SIDRA assessment for the Parkhill/Raymond Road intersection was reported in our S92 Response. The SIDRA assessment for the Parkhill/East Road intersection was completed in preparing this evidence.

70. A summary of the SIDRA assessments are shown in Table 8 and Table 9 below for the Parkhill/Raymond and East/Parkhill intersections respectively. A sensitivity test of 50% extra site flows has also been undertaken to test the robustness of the intersections.

Table 8: SIDRA Analysis Results for Parkhill Road/Raymond Road Intersection

Period	Movement	Existing		Developed		Developed (50% extra site traffic)	
		Average Delay (sec)	Level of Service (LOS)	Average Delay (sec)	Level of Service (LOS)	Average Delay (sec)	Level of Service (LOS)
AM Peak Period	Left-turn from Parkhill Road (S) (Give-way)	5.8	A	5.8	A	5.8	A
	Right-turn from Parkhill Road (S) (Give-way)	6.2	A	6.8	A	7.1	A
	Left-turn from Parkhill Road (N) (Priority)	4.8	A	4.9	A	4.9	A
	Right-turn from Parkhill Road (N) (Priority)	5.6	A	5.6	A	5.6	A
	Left-turn from Raymond Road (W) (Priority)	5.7	A	5.8	A	5.8	A
	Right-turn from Raymond Road (W)(Priority)	5.1	A	5.7	A	6.1	A
PM Peak Period	Left-turn from Parkhill Road (S) (Give-way)	5.7	A	5.7	A	5.7	A
	Right-turn from Parkhill Road (S) (Give-way)	6.0	A	6.2	A	6.6	A
	Left-turn from Parkhill Road (N) (Priority)	4.7	A	4.7	A	4.7	A
	Right-turn from Parkhill Road (N) (Priority)	5.6	A	5.6	A	5.6	A
	Left-turn from Raymond Road (W) (Priority)	5.8	A	5.8	A	5.8	A
	Right-turn from Raymond Road (W)(Priority)	5.2	A	5.2	A	5.2	A

Table 9: SIDRA Analysis Results for East Road/Parkhill Road Intersection

Period	Movement	Existing		Developed		Developed (50% extra site traffic)	
		Average Delay (sec)	Level of Service (LOS)	Average Delay (sec)	Level of Service (LOS)	Average Delay (sec)	Level of Service (LOS)
AM Peak Period	Left-turn from Parkhill Road (S) (Give-way)	6.9	A	6.9	A	6.9	A
	Right-turn from Parkhill Road (S) (Give-way)	7.6	A	8.2	A	8.6	A
	Left-turn from East Road (Priority)	6.7	A	6.7	A	6.7	A
	Right-turn from East Road (Priority)	7.1	A	7.1	A	7.1	A
	Left-turn from Parkhill Road (N) (Priority)	7.1	A	7.1	A	7.1	A
	Right-turn from Parkhill Road (N) (Priority)	6.7	A	6.8	A	6.8	A
PM Peak Period	Left-turn from Parkhill Road (S) (Give-way)	6.8	A	6.9	A	7.0	A
	Right-turn from Parkhill Road (S) (Give-way)	9.4	A	10.0	A	10.3	A
	Left-turn from East Road (Priority)	6.7	A	6.7	A	6.7	A
	Right-turn from East Road (Priority)	7.1	A	7.1	A	7.1	A
	Left-turn from Parkhill Road (N) (Priority)	7.1	A	7.1	A	7.1	A
	Right-turn from Parkhill Road (N) (Priority)	7.0	A	7.0	A	7.0	A

71. The SIDRA intersection assessment shows that Parkhill Road/Raymond Road intersection is expected to continue to operate at acceptable levels of service in the developed situation. Predominately, the movements are expected to continue to operate with delays equivalent to a level of service A (LOS A). A sensitivity test adding another 50% of the site flows indicates very little change to the results. This is due in part to the low overall traffic volumes at this intersection.

72. The East Road/Parkhill Road intersection continues to operate at an acceptable level of service. Even when 50% extra site flows are added to the intersection, this only increases the average delay for the right-turn out of Parkhill Road (S) to East Road by less than one second.

73. Another sensitivity test was carried out that amended the HCV percentages at the East Road/Parkhill Road to 15% to allow for a possible increase in arrival trucks all in the same hour, rather than spread out over a day (this is prior to film production). This adds on only an average of less than one second extra delay to HCV's making the right turn manoeuvre out of Parkhill Road (S). The queue on Parkhill Road (N) to turn right into Parkhill Road (S) never exceeds more than one vehicle.

74. In order to evaluate the traffic effects of a similar location, I have reviewed a local school with higher traffic volumes and very few crashes.

75. The Bridge Pā School is located on Maraekakaho Road, which has a daily traffic count of 3,067 with 9% heavy vehicles. The road has a speed limit of 50 km/h; however, the school is in a rural environment. There have been two recorded non-injury crashes in the vicinity of the school in the past ten-year period. Both crashes involved distraction and colliding with a pedestrian refuge island. Neither involved vulnerable users.

76. I observed the vehicle and pedestrian behaviour on Wednesday 7 September 2022 at Bridge Pā, between 2.30pm and 3.15pm, and can confirm it was a normal day with no incidents. Children managed to cross the busy road with no issues, using the pedestrian refuge located about 100m east of the school. I observed at least 25 children crossing the road and another 15 children who walked along the same side of the road towards their house. Note these numbers are much higher than what I observed on Parkhill Road near the Haumoana School and Te Awanga Kindergarten (I observed five children walking across Parkhill Road and two cyclists during the school PM peak period). I observed at least 12 heavy vehicles travelling in both directions past the Bridge Pā school and the pedestrian refuge (I observed no heavy vehicles within the vicinity of the Te Awanga Kindergarten/Haumoana School in either peak period).

77. The traffic effects generated by the proposed site are not as great as the existing situation at Bridge Pā in comparison; my point being that Bridge Pā has much higher traffic volumes and still has an excellent road safety record. The proposed low numbers at and around the Te Awanga Kindergarten, and on Parkhill Road, of around 700 vehicles per day, indicate the network can support and accommodate the Proposal.

Construction Traffic

78. Construction traffic will access the site from the new Parkhill Road access. The construction allows for large volumes of aggregate to be sourced from within the existing property to provide aggregate for establishment of the new road. As with many green field projects once earthworks machinery is established on site it does not leave until the end of the project.

79. The construction period will be 9 to 12 months with typical days involving 10 to 50 vehicle movements to and from the site. Typically, the percentage of heavy vehicles will be 20% which

would result in a maximum of ten heavy commercial vehicles (HCV's) per day. The peak generator of external traffic will be foundation concrete pour which will take place over 2 – 3 days. This is expected to generate up to 120 vehicles per day with 80% being HCV's (96 per day).

80. I have not undertaken any additional assessment of construction effects, as this would be less than the proposed effects during film production.

81. I can therefore conclude that the increase of proposed traffic near the Haumoana School and Te Awanga Kindergarten, and on Parkhill Road, would provide a safe and efficient road and traffic environment for all users, subject to the mitigation proposed.

Proposal Layout and Design / Mitigation

82. At 6m wide the sealed cross section for the new access road is wider than many public roads, including existing sections of Parkhill Road which are 3.6 – 5m wide for the last 1km to the site. With unsealed shoulders and 5:1 batters (refer to Figure 3 of the S92 Response) vehicle's will be able to pull over to provide safe access for emergency vehicles. Ensuring emergency access is available to and around the site will be confirmed in the detail design and building consent stage. Given the greenfield nature of the development there are no barriers to meeting these requirements at the time of detailed design.

83. The access road within the site will have a 50km/h posted speed limit.

84. As addressed previously, the Parkhill Road/Raymond Road intersection is located at the corner of the Haumoana School and the Te Awanga Kindergarten. At this location, during the site visit (December 2020) in the school PM period, school-related pedestrian and cycle activity was observed (three adults walking towards the school and two adults and two children walking away

from the school). Children were also observed to cross the intersection to cycle along the shared path provided on Parkhill and East roads (to and from the Haumoana township). As is typical in school vicinities, several manoeuvring vehicles parked/unparked at the location, especially within the angle parking provided on Raymond Road, which was observed to be at capacity.

85. Therefore, the provision of continued levels of road safety is essential in this vicinity given the expected increase in traffic volumes on Parkhill Road; although it is noted that the majority of movements to and from the developed site will sit outside school peak periods. For that reason, I have recommended the following improvements at the Parkhill Road/Raymond intersection (shown in **Appendix C** attached):

a) Instalment of raised pedestrian platforms to highlight crossing points and reduce vehicle speeds, which is highly desirable at this location.

b) A mountable splitter island within the intersection to assist with controlled turning movements at the intersection;

c) Relocation of existing 25 km/h speed advisory signs at the eastern side of the intersection to allow for clear intervisibility between pedestrians and approaching traffic. For a 50 km/h speed environment, the minimum approach sight distance is to be 45 m (Table 15.1 of NZTA's Pedestrian and Planning Guide).

d) Provision of additional parking spaces on Parkhill Road to increase parking capacity for the school and kindergarten

e) Instalment of extra lighting at the intersection.

86. I consider it is not necessary to provide a right turn bay for right turning traffic heading from Raymond Road into Parkhill Road (S), due to the low numbers of turning vehicles. There are only 4

vehicles recorded turning right in the peak hour and this is not expected to increase as a result of this development. The raised platforms will slow down all vehicles to minimise the risk of a crash and will provide suitable gaps for turning vehicles to provide a safe environment for all users.

87. The exact details of the improvements to the Parkhill Road/Raymond Road intersection will be further progressed during the detailed design stage and will be subject to an independent road safety audit to the satisfaction of Hastings District Council.

88. Based on the videos captured in the aerial surveys and the site visit, at the East Road/Parkhill Road intersection, several westbound vehicles (travelling from Haumoana) cut the corner when travelling along the 35 km/h speed advisory curve at the intersection, passing over the right turn bay (into Parkhill Road (S)). Some vehicles turning left onto East Road (from Parkhill Road (N)) were observed to perform this movement at relatively high speeds, and to also pass over the right turn bay facility. This facility is expected to have an increase in use with the site development (including additional heavy vehicles prior to production). It is recommended that additional safety features are installed, such as raised reflective pavement markers (RRPM's) along the intersection's curve, particularly the right turn bay facility, to delineate the appropriate travelling path. Other proposed improvements could include widening on Parkhill Road and East Road to accommodate heavy vehicle turning movements, noting the existing intersection currently cannot provide adequately for these existing movements. Additionally, moving the right turn lane/pocket on Parkhill Road (N) forward would give vehicles better visibility down East Road before turning out of Parkhill Road (N). These improvements would be agreed in principle by HDC and an independent road safety audit

carried out. The drawing in **Appendix D** illustrates some proposed treatments.

89. The site will have the provision of 325 parking spaces, seven disability parks and 12 trailer spaces, and even though some of the parking areas may be used for production staging, the parking provision is abundant, and no issues related to this matter are expected to be generated.

90. However, for completeness, the expected parking demand on the site has been assessed. Based on a vehicle occupancy of two persons per vehicle, as previously used to calculate the trip generation in this report, 235 vehicles travelling to the site per day would be expected. The Hastings Operative District Plan has no parking requirement for the proposed activity in the site. In all instances, it would not be expected any parking capacity-related issue.

91. Some staff could be expected to cycle to the site if they resided/hosted in the townships in the vicinity (Haumoana/Te Awanga). Based on the number of vehicles (235) to travel to and from the site, 47 bicycle stands (spaces) are to be provided on the site, complying with the District Plan requirements of one bicycle stand per five car parking spaces.

92. Furthermore, seven parking spaces for disabled persons are to be provided, meeting the requirements of two spaces per up to 100 spaces to be provided, and one space for every additional 50 spaces.

93. The parking layout is to be in accordance with Appendix 71 from the Hastings Operative District Plan.

94. Section 14.1.8.2 of the Hastings District Plan, requires that safe sightline distances be to be provided for all new intersections and accessways in accordance with Austroads standards. The Safe Intersection Sight Distance ("**SISD**") is the preferred standard to

be provided between vehicles on major roads in relation to those in minor roads at an intersection. In addition, the Stopping Sight Distance ("**SSD**") must be available at all locations through the intersection. For a worst-case scenario assessment, the truck SSD must be used.

95. There are various speed environments which apply when assessing the various intersections. Based on a two second reaction time, the minimum SISD and SSD values used for the assessment are tabled below.

Table 10: Sight Distance Requirements

Design Speed (km/h)	Safe Intersection Sight Distance (m)	Stopping Sight Distance (m)
50	97	62
60	123	82
70	151	105
80	181	131
100	248	191

96. Appropriate SISD is provided in both directions at the Parkhill Road/Raymond Road intersection. Sight distances over 300 m are provided from Parkhill Road to both north and west.

97. A sight distance of approximately 100 m is provided between vehicles turning right from Raymond Road onto Parkhill Road (south - towards the site) and southbound traffic on this road. The adjacent property's boundary (hedge fence) creates a visibility restriction from traffic travelling south down Parkhill Road (N) when heading from Raymond Road to Parkhill Road (S). The available sight distance is, however, considered appropriate for the operating speed of 55 km/h in the vicinity of this intersection. The stopping sight distance of 72 m would be required for an approaching truck travelling at 55 km/h.

98. At the East Road/Parkhill Road intersection, adequate SISD of over 300 m is provided for both the north and east. This intersection has a similar alignment to the Parkhill Road/Raymond Road intersection, with the intersection point on the outside of a curve, which offers appropriate intervisibility between vehicles on major and minor roads.

99. As the alignment has similarity with the Parkhill Road/Raymond Road intersection, an available sight distance of approximately 130 m is provided between vehicles turning right onto Parkhill Road (towards the site) and westbound traffic on East Road (coming from Haumoana). However, the assessed SSD is adequate for the expected operating speed of 60 km/h for vehicles on East Road approaching the intersection from Haumoana (noting the curve has an advisory speed of 35 km/h, so vehicles will be reducing speeds to negotiate the curve). For this operating speed, an SSD of 89 m would be required whereas 130m is available. That said, the assessed sight distance of 130 m represents a minor shortfall from the 131 m required for an 80 km/h posted speed.

100. At the southern end of Parkhill Road, the proposed turning circle arrangement will be constructed which will be able to accommodate larger vehicles turning. The design has been advanced since the initial concept, however, based on the turning volumes at this location the design is considered suitable. It is noted that both the proposed site access and access to Te Awanga Estates are private accesses, so that if a heavy vehicle drives down Parkhill Road by mistake, it has an area to turn around in. Note that the proposal is an improvement on the existing turning circle arrangement.

101. The exact details of the turning circle and access arrangement will be further progressed during the detail design stage and will

be subject to an independent road safety audit to the satisfaction of HDC.

Response to Mike Smith (Independent Expert Witness for Hastings District Council)

102. Mr Mike Smith, an expert traffic witness, was engaged by Hastings District Council to provide an opinion on the expected traffic effects.

103. Throughout the course of Mr Smith's evidence, he has raised several issues which we are not agreed on, which I have addressed in the body of my evidence. For completeness I have set out the principal matters raised by Mr Smith and the reasoning for my difference of opinion about them below .

Roundabout at the East Road/Parkhill Road

104. The evidence from Mike Smith suggests a roundabout could be considered at the East Road/Parkhill Road intersection to mitigate concerns regarding HCVs queuing on Parkhill Road and to address the limited forward visibility through the curve.

105. In line with Mr Smith's earlier suggestions regarding traffic movements, we have undertaken intersection modelling at this intersection. The results of this assessment are summarised in Table 7 and Table 8.

106. Specific sensitivity tests where included within the modelling to align with Mr Smith's recommendations. Specifically the following was applied;

(a) A 50% increase in assessed development traffic being applied during the peak period

(b) A 15% heavy vehicle profile at the intersection to test a compounded arrival rate. This resulted in the intersection being modelled with 38 heavy vehicles using the Right

Turn Bay within the peak hour, compared with the anticipated arrival of 14 HCVs over the course of a day.

107. The results demonstrate that no queues are anticipated.

108. In regards to forward visibility through the curve, this is specifically covered in paragraph 98.

109. Based on this level of assessment, there is no justification to warrant the installation of a roundabout at this location.

110. Nevertheless, some additional widening has been identified at the intersection to better support turning movements associated with heavier vehicles.

111. The feasibility of completing this widening is considered achievable, with the exact details of the improvements to the East Road/Parkhill Road intersection being able to be further progressed during the detail design stage. These improvements will be subject to an independent road safety audit to the satisfaction of Hastings District Council.

Widening Park Hill Road to 7m

112. Mr Smith in Paragraph 5.47 of his evidence recommends that Parkhill Road be widened to 7m in accordance with HDC's engineering code of practice on the basis the road is classified as a Secondary Collector.

113. I do not agree with this recommendation and have outlined my reasoning for this in paragraph 51 of this evidence.

Private Road Junction / Outfoxed Entrance

114. Mr Smith has made comment in Paragraph 4.18 – 4.23 of his evidence regarding the formation of the internal intersection with the Outfoxed Entrance.

115. The layout provided at this stage is conceptual, with detailed design required, which is expected to include survey as recommended by Mr Smith.

116. Nevertheless, from the plan it would appear that sufficient visibility is available, however this may limit the indicative tree planting which has been indicated on the concept in and around the intersection area.

Response to Submitters

117. Most of the submitters specific concerns have been addressed throughout this evidence. However, I have responded to each submitter's specific additional concerns relating to traffic which are noted in the table attached at **Appendix E**.

118. The Te Awanga Kindergarten have concerns about the safety of access to the kindergarten. These concerns are noted in a letter from the kindergarten. No 8 Studios Limited have proposed mitigation to address these concerns (as set out above), and this is illustrated in **Appendix C**. These mitigations include a new segregated parking area; raised safety platforms to slow down vehicles on the approach to the kindergarten; a new footpath covering the extent of the new parking area; a splitter island at the Parkhill Road/Raymond Road intersection to control turning speeds and installation of additional street lighting.

119. As demonstrated in Table 5, the majority of traffic movements to/from the site will not be during the school AM and PM peak periods when the school and kindergarten activity is at its highest level.

120. Other submitters have indicated there could be traffic safety issues at the Parkhill Road/Raymond Road intersection. As stated above, suitable mitigation measures will be provided to address these concerns. I have also demonstrated previously

that vehicle queues and delays are less than minor and can be accommodated safely at the intersection.

121. Mr and Mrs Caseley, from No 227 Parkhill Road, are concerned that existing traffic numbers were overestimated due to the traffic survey occurring just south of the Parkhill Road/Raymond Road intersection and so includes school traffic. This does not alter my assessment, as it results in a conservative assessment of the full impact of the proposed site generated traffic volumes which are additional to the existing traffic. However, we have undertaken a weeklong traffic tube count further south along Parkhill Road, which indicates much lower traffic volumes of about 142 vehicles per day. When the proposed generated traffic from the site is added to these lower existing traffic volumes, there is ample spare capacity on Parkhill Road.

122. Mr and Mrs Caseley have also requested improvements to be made to the sightlines from their access onto Parkhill Road. Although there is a rise in Parkhill Road as it approaches the intersection with Raymond Road, there is adequate sight distance to/from the access to No. 227. For an operating speed of 70 km/h (from the recent traffic tube counts), a sight distance of 150m is required, and is available, on Parkhill Road. Therefore, a vehicle would be able to see in all directions at the access to No 227, and a vehicle travelling southbound on Parkhill Road would be able to comfortably stop in time if a vehicle pulls out of the access.

123. Christopher Andrew Hursthouse, from No 272 Parkhill Road, notes a danger to walkers, runners, cyclists, horse riders and stock movement as there is no off-road facility. There are several similar locations within Hastings where this occurs, with higher traffic volumes, with no discernible concerns. One example is Haumoana Road, leading to the Haumoana village, which has average daily traffic volumes of over 2,000 vehicle per day, and

no recorded crashes with vulnerable users. However, Parkhill Road will be widened to 6m minimum sealed width, and with good visibility along the straight section of Parkhill Road, each user will be able to see each other and avoid any conflicts.

Conclusion

124. For the reasons detailed above, I conclude that the proposed development can be readily accommodated within the local traffic and transportation environment with no more than minor effects, and the proposed development can be safely supported from a transportation perspective. This conclusion is made on the assessment that the development is predicted to generate up to 470 vehicles per day with a peak hour volume of 118 vehicles per hour.

125. The capacity assessment of adjacent intersections has demonstrated that the additional traffic to be generated by the development can be easily absorbed on Parkhill Road and its intersections with Raymond Road and East Road. Furthermore, the parking facilities in the site exceed the expected parking demand, and satisfactory sight distances are provided from the adjacent intersections.

126. With the increase in traffic volumes on Parkhill Road, this road is recommended to be widened and sealed to 6 m wide. Additional recommendations for continued safety at adjacent intersections include the construction of raised platforms, additional car park spaces and extra lighting at the Parkhill Road/Raymond Road intersection and the instalment of raised reflective pavement markers to delineate the appropriate travelling path along the curve at the East Road/Parkhill Road intersection.

127. Other improvements are also proposed to be undertaken in the vicinity of the Haumoana School and Te Awanga Kindergarten, recognising the importance of safety for these facilities in the

community. These works will include the provision of additional parking and lighting at the intersection.

128. These conclusions have been reached on a very conservative basis, by incorporating conservatism into the assessment in the following ways:

(a) The applicant's data on which traffic flows have been modelled anticipate the highest traffic flow generated from the site and substantially lower traffic numbers are likely;

(b) The site's peak traffic flow has been added to the AM network and PM school peak hour traffic flows to model the worst-case scenario despite traffic not being generated during these periods;

(c) No allowance has been made for other modes of transport (collective transport, cyclists etc.

Steve James
September 2022

Appendix A

Existing Roading Layout & Site Location

No	Revision	Designer	Checked	Approved	Date
A	PRELIMINARY - ISSUED FOR DISCUSSION	JS	SJ		14.09.22

WAKA KOTAHI NZ TRANSPORT AGENCY

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	Name	Date
Designer	J Singh	14.09.22
Reviewed	S James	14.09.22
Approved		

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Client: No. 8 Studios

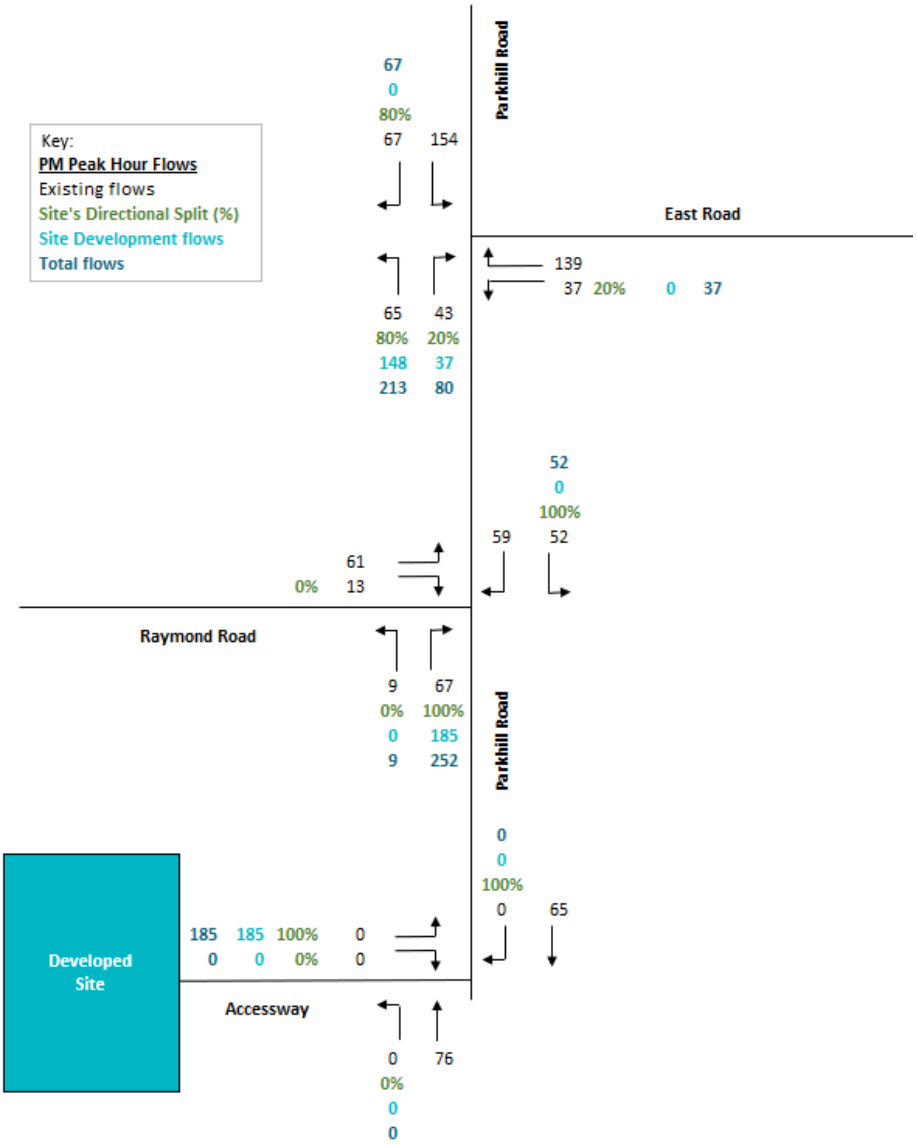
Project: No. 8 Film Production Studios

Title: Overall Site Plan

Status	Original Size	Scale	Drawing No:	Rev:
For discussion	A3	NTS	04.033-SK001	A

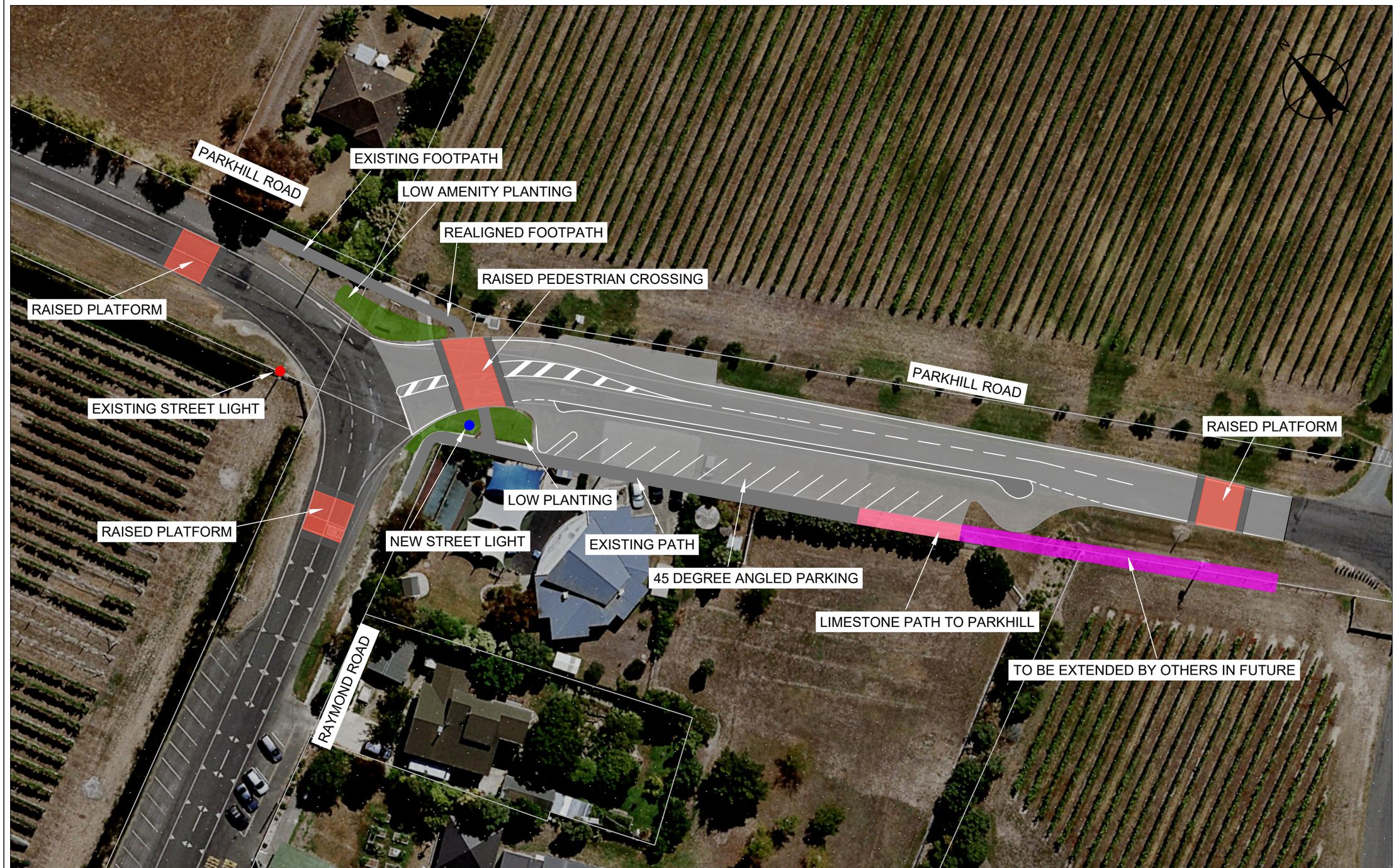
Appendix B

Proposed Traffic Flows


Key:
PM Peak Hour Flows
Existing flows
Site's Directional Split (%)
Site Development flows
Total flows
Parkhill Road
East Road
Raymond Road
Parkhill Road
Developed Site
Accessway

Appendix C

Proposed Improvements Parkhill Road/Raymond Road intersection



No	Revision	Designer	Checked	Approved	Date
A	PRELIMINARY - ISSUED FOR DISCUSSION	JS	SJ		14.09.22

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Reviewed	S James	14.09.22
Approved		

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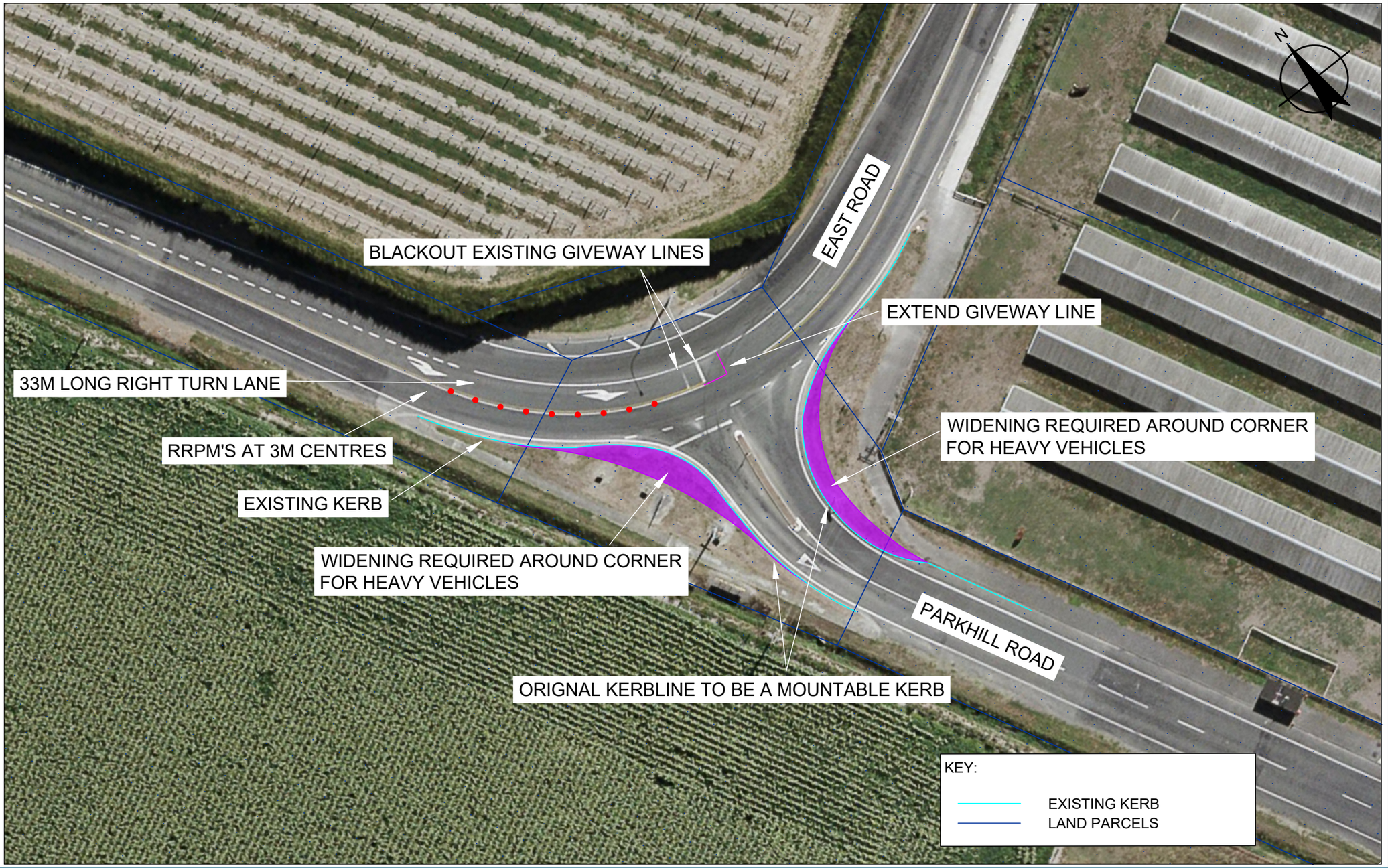
Client No. 8 Studios
Project No. 8 Film Production Studios
Title Parkhill Road and Raymond Road Intersection

Status	Original Size	Scale	Drawing No:	Rev:
For discussion	A3	1:500	04.033-SK002	A

Appendix D

Proposed Improvements East Road/Parkhill Road intersection



No	Revision	Designer	Checked	Approved	Date
A	PRELIMINARY - ISSUED FOR DISCUSSION	JS	SJ		14.09.22

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Reviewed	S James	14.09.22
Approved		

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Client: No. 8 Studios
Project: No. 8 Film Production Studios
Title: Parkhill Road and East Road Intersection

Status	Original Size	Scale	Drawing No:	Rev:
For discussion	A3	1:500	04.033-SK003	A

Appendix E

Traffic Concerns from Submitters

Summary of Submissions – Traffic Expert Responses

Submitter	Address	Concern	Comment
Te Awanga Kindergarten (Helen Carole McNaughten)	204 Parkhill Road/7 Raymond Road	Safety of access to Te Awanga Kindergarten Proposed mitigation if granted: Construct a slip road and kindergarten access / parking as per figure 11 in the application.	
		Safety of Raymond / Parkhill intersection – many near misses, difficult right turning (visibility restriction), dangers magnified by increased traffic. Proposed mitigation if granted: Roundabout needed at the intersection at Raymond and Parkhill Roads.	
		No assurances relating to the indications that traffic will avoid kindergarten hours. Kindergarten may choose to extend its hours of operation.	
		Safety of children/tourists along Parkhill Road – many walkers and bikers on Parkhill will be vulnerable to traffic, incl. trucks. Proposed mitigation if granted: Offroad shared path needed along Parkhill Road.	
		Safety of children crossing Parkhill Road to access school / kindergarten – cars turning with limited visibility and pulling out of parks at the kindergarten. Proposed mitigation if granted: Construct pedestrian underpass or repositioned and raised pedestrian crossings (with zebra stripes or mid-block pedestrian signals) separated from intersection.	

		Proposed mitigation if granted: Construct road upgrades noted above before the screen production studio ("**SPS**") opens.	
Andrew Macniven Caseley and Catherine Jane Caseley	227 Parkhill Road	Traffic safety issues - East / Parkhill Road and Raymond / Parkhill Road intersections are dangerous due to impaired vision, poor turning lines, increasing volumes of traffic. Proposed mitigation if granted: Substantially upgrade intersections (roundabouts or equivalent).	
		Traffic safety issues – dangerous for parents and children accessing school and kindergarten, and for biking along and crossing Parkhill Road. Proposed mitigation if granted: Construct cycle path along length of Parkhill Road.	
		Traffic movement times – unable to be enforced.	
		Traffic impact assessment ("**TIA**") flaw – The TIA over estimated existing traffic by being conducted just south of Parkhill/Raymond Road intersection. A more representative location would have been just south of the entrance to Parkhill Farm Park.	
		TIA flaw – The TIA does not account for traffic using new access for Outfoxed, Cricket Club, and Outfield music festival.	
		Traffic safety issues – Poor sightline to the south from 227 Parkhill Road. Proposed mitigation if granted: Improve sightline of access to 227 Parkhill Road to the south.	
		Stormwater issues – Drains do not flow effectively and will create a hazard with increased traffic and widened carriageway.	

		Proposed mitigation if granted: Upgrade road stormwater and improve road culvert between 278 and 326 Parkhill Road.	
		Proposed mitigation if granted: A detailed Parkhill Road upgrade plan should be a condition of consent for all require upgrading of the road.	
Christopher Andrew Hursthouse - Tenant and Farm Manager	272 Parkhill Road	TIA underestimates traffic effects – two people per vehicle not realistic, no consideration given to service traffic, contactors or deliveries, and no consideration has been given to traffic from other Te Awanga Downs activities which may use Parkhill Road, counts taken in the eastern section of Parkhill Road beyond the kindergarten would be lower because it is a no-exit. Proposed mitigation if granted: Other Te Awanga Downs activities not to use Parkhill Rd access.	
		Impact on Haddington Farm – traffic will affect movement of sheep and cattle along road, which currently occur safely. Stock truck movements will be more difficult.	
		Timing - traffic impacts will not be restricted to 6-7am and 5-6pm so disruption to other road users and danger to school / kindergarten. Proposed mitigation if granted: Film studio access closed between 7am – 5pm and after 6.30pm.	
		Dangers of East / Parkhill Road intersection – increased volumes increase existing risks: including restricted visibility for right-turning traffic (especially larger vehicles) and for cars travelling south turning right into Parkhill Road with cars from Te Awanga cutting the corner.	

		Proposed mitigation if granted: Parkhill / East Road intersection be re-designed as a roundabout along with additional measures.	
		Dangers of Parkhill / Raymond intersection – increased volumes increase existing risks: dangerous right turning traffic from Raymond Road into Parkhill Road as there is no visibility of traffic approaching from the western side of Parkhill Road. Proposed mitigation if granted: Parkhill / Raymond Road intersection be re-designed as a roundabout along with additional measures.	
		Dangers of children crossing road to access school / kindergarten.	
		Dangers to walkers, runners, cyclists, horse riders and stock movements on Parkhill Road given there is no off-road pathway. Proposed mitigation if granted: Walking / cycling / horse path on Parkhill Road.	
		Dangers of intersections at Mill Rd, Richmond Rd, SH51 at Clive.	
		Stormwater issues – regular flooding between 272 and 299 Parkhill Road generates a need for extreme caution. Proposed mitigation if granted: Drainage on Parkhill Road rebuilt.	
		Alternatives – a range of options have not been properly considered including Gordon Road, the existing paper road from Clifton Road through Te Awanga Downs, or a new road through or adjacent to the subdivision the current landowner created in Te Awanga.	
		Additional proposed mitigation if granted:	

		• Required road upgrades to be a condition of consent to be built prior to construction of the film studio. • 50km/hr speed limit • Consent condition requested limiting operation to Monday-Friday • Truck driver access times monitored and enforced	
Madeleine Riordan - Tenant	272 Parkhill Road	TIA underestimates traffic effects – no consideration given to service traffic, visitor traffic, contractors or deliveries, and no consideration has been given to traffic from other Te Awanga Downs activities which may use Parkhill Road, counts taken in the eastern section of Parkhill Road beyond the kindergarten would be lower because it is a no-exit.	
		Timing - traffic impacts will not be restricted to 6-7am and 5-6pm so disruption to other road users and danger to school / kindergarten. Proposed mitigation if granted: Film studio access closed between 7am – 5pm and after 6.30pm.	
		Dangers of East / Parkhill Road intersection – increased volumes increase existing risks: including restricted visibility for right-turning traffic (especially larger vehicles) and for cars travelling south turning right into Parkhill Road with cars coming from Te Awanga cutting the corner. Risks also to people coming and going to the informal skate-park on this corner. Proposed mitigation if granted: Parkhill / East Road intersection be re-designed as a roundabout along with additional measures.	
		Dangers of Parkhill / Raymond intersection – increased volumes increase existing risks: dangerous right turning traffic from	

		Raymond Road into Parkhill Road as there is no visibility of traffic approaching from the western side of Parkhill Road. Proposed mitigation if granted: Parkhill / Raymond Road intersection be re-designed as a roundabout along with additional measures.	
		Dangers of children crossing road to access school / kindergarten. Proposed mitigation if granted: Street lamps.	
		Dangers to walkers, runners, cyclists, horse riders and stock movements on Parkhill Road given there is no off-road pathway. Proposed mitigation if granted: Walking / cycling / horse path on Parkhill Road.	
		Dangers of intersections at Mill Rd, Richmond Rd, SH51 at Clive, including near the Black Bridge refuse centre and Tukituki river carparks.	
		Additional proposed mitigation if granted: • Required road upgrades to be a condition of consent to be built prior to construction of the film studio. • Consider transport sharing options • 50km/hr speed limit • Consent condition requested limiting operation to Monday-Friday • Truck driver access times monitored and enforced	
Parkhill Family Trust (Annah and Jonathon Knight)	299 Parkhill Road	Traffic intensity - Increase from 180vpd to 650vpd at peak times over 7 days a week will affect current children walking / biking, cyclists, walkers, horse riders and movement and roadside grazing of stock.	

		Proposed mitigation if granted: Need for pedestrian cycle path down Parkhill Road.	
		East / Parkhill Road and Raymond/Parkhill Road intersections are poorly designed even for existing levels of traffic, significant increase will result in dire outcome. Proposed mitigation if granted: • Additional road lighting • Upgrading of intersection to roundabout	
		Timing – Trucks will not adhere to proposed peak traffic periods and create danger to school / kindergarten intersection.	
		Timing– 6am to 7am starts and 5pm to 6pm finishes correspond with current recreational use of road (walking/cycling)	
		Dangers of children crossing road to access school / kindergarten. Proposed mitigation if granted: Install pedestrian crossing close to kindergarten.	
		Stormwater – stream currently spills over road during heavy rain near 299 Parkhill Road is a hazard and has not been identified in TIA. Proposed mitigation if granted: Works to prevent the stream from flooding.	
		Driveway to Te Awanga Estate – used as a thoroughfare by Te Awanga creating a dangerous three-way intersection.	
		Lack of detail about proposed upgrades – more certainty on implementation sought.	

		Proposed mitigation if granted: Required road upgrades to be a condition of consent to be built prior to construction of the film studio.	
Mark and Jan Toms - Tenant	307 Parkhill Road	Traffic safety - Raymond / Parkhill Road and East / Parkhill Road intersections are already dangerous due to limited visibility. Proposed mitigation: Redesign of intersections as roundabouts, works to be completed prior to construction of film studio.	
		Timing - Concerned traffic increases will be spread over the day and not limited to peak hours.	
		Proposed additional mitigations if granted: • 50km/hr speed limit on Parkhill Rd • Walking / Cycling path on Parkhill Rd	
Matt and Amy Nilsson - Tenant	326 Parkhill Road	Safe access – the proposal offers the easiest and safest access and the current safety of the one lane Parkhill Road will be improved.	
		Improvements to East Road Intersection – proposed upgrades supported.	
		Parkhill Road to Entrance – currently dangerous with increase in traffic and cyclists so support widening.	
		Proposed measure: Separate off road cycle / walking track linking with existing tracks.	
Marc and Joanne Anderson	373 Parkhill Road	Traffic safety on Parkhill Rd - Including for walking & cycling.	
		Traffic safety - East / Parkhill Road intersection is dangerous as a blind corner.	
		Impacts on 373 Parkhill Road – Do not want turning circle outside driveway.	
		Te Awange Estate entrance – Concern road upgrade will result in more traffic through the shingle Te Awanga Estate entrance.	

The Estate of R C Macniven (Robert Averill Fitzharding Kingscote)	No local address – Traffic only	Danger at intersections – Impaired vision, poor turning lines and increasing volumes of traffic.	
		Traffic movement times – unable to be enforced.	
		Dangers of children crossing road to access school / kindergarten.	
		Stormwater issues – Drains do not flow effectively and will create a hazard for increased traffic. Proposed mitigation if granted: Upgrade road stormwater and improve road culvert between 278 and 326 Parkhill Road.	
		Proposed additional mitigation if granted: • A detailed Parkhill Road upgrade plan should be a condition of consent for all require upgrading of the road • Offroad shared path needed along Parkhill Road	

APPENDIX E
Summary of Submissions – Traffic Expert Responses

Submitter	Address	Concern	Comment
Te Awanga Kindergarten (Helen Carole McNaughten)	204 Parkhill Road/7 Raymond Road	Safety of access to Te Awanga Kindergarten Proposed mitigation if granted: Construct a slip road and kindergarten access / parking as per figure 11 in the application.	Provision has been made for upgrades which will improve safety outcomes along Parkhill Road and at the Parkhill/Raymond Road intersection to separate and slow traffic and providing parking for the kindergarten (see paragraphs 82-88, 118 and Appendix C). Traffic effects not as great as comparable situations near schools with good safety outcomes (eg. Bridge Pā) (see paras 74-77).
		Safety of Raymond / Parkhill intersection – many near misses, difficult right turning (visibility restriction), dangers magnified by increased traffic. Proposed mitigation if granted: Roundabout needed at the intersection at Raymond and Parkhill Roads.	Provision has been made for upgrades which will improve safety outcomes at the Parkhill/Raymond Road intersection to separate and slow traffic (see paragraphs 85-87, 118 and Appendix C). Appropriate sightlines are provided considering the

			relevant operating speed (see paragraphs 94-97). A roundabout is not considered necessary given the proposed upgrades provide sufficient capacity and safety outcomes.
		No assurances relating to the indications that traffic will avoid kindergarten hours. Kindergarten may choose to extend its hours of operation.	Majority of traffic is expected outside kindergarten operating hours with peak flows generated from the site from 6.00-7.00am and 5.00-6.00pm (see paragraphs 12(b), 48, 55-57, Table 5). The applicant has agreed to work with the kindergarten to further address concerns and put in place a traffic management plan.
		Safety of children/tourists along Parkhill Road – many walkers and bikers on Parkhill will be vulnerable to traffic, incl. trucks. Proposed mitigation if granted: Offroad shared path needed along Parkhill Road.	The applicant proposes to widen the road to 6m which is more than adequate to provide a safe environment for all users (see paragraph 51 and 123).
		Safety of children crossing Parkhill Road to access school / kindergarten – cars turning with limited visibility and pulling out of parks at the kindergarten. Proposed mitigation if granted: Construct pedestrian underpass or repositioned and raised pedestrian crossings (with zebra	Provision has been made for upgrades which will improve safety outcomes at the Parkhill/Raymond Road intersection to separate and slow traffic (see paragraphs 85-88, 118 and Appendix C).

		stripes or mid-block pedestrian signals) separated from intersection.	An underpass is not considered necessary given the proposed upgrades provide sufficient safety outcomes.
		Proposed mitigation if granted: Construct road upgrades noted above before the screen production studio ("**SPS**") opens.	The proposed measures will be a condition of the consent and will be required prior to the operation of the SPS.
Andrew Macniven Caseley and Catherine Jane Caseley	227 Parkhill Road	Traffic safety issues - East / Parkhill Road and Raymond / Parkhill Road intersections are dangerous due to impaired vision, poor turning lines, increasing volumes of traffic. Proposed mitigation if granted: Substantially upgrade intersections (roundabouts or equivalent).	Provision has been made for upgrades which will improve safety outcomes at the Parkhill/Raymond Road intersection to separate and slow traffic (see paragraphs 84-88, 118 and Appendix C). Alterations are also proposed to improve safety outcomes at the Parkhill/East Road intersection (see paragraphs 88, 110-111). Appropriate sightlines are provided at both intersections (see paragraphs 94-99). Once upgraded both intersections will have sufficient capacity and safety outcomes for the level of traffic anticipated (see paragraphs 66-70, 110-111).

			Roundabouts are not considered necessary given the proposed upgrades provide sufficient capacity and safety outcomes (see paragraphs 104-111 in respect of Parkhill/East Road intersection).
		Traffic safety issues – dangerous for parents and children accessing school and kindergarten, and for biking along and crossing Parkhill Road. Proposed mitigation if granted: Construct cycle path along length of Parkhill Road.	Once upgraded both intersections will have sufficient capacity and safety outcomes for the level of traffic anticipated (as above). The applicant also proposes to widen the road to 6m which is more than adequate to provide a safe environment for all users (see paragraph 51 and 123).
		Traffic movement times – unable to be enforced.	The applicant has offered to put in place measures to regulate traffic timing including a traffic management plan.
		Traffic impact assessment ("**TIA**") flaw – The TIA over estimated existing traffic by being conducted just south of Parkhill/Raymond Road intersection. A more representative location would have been just south of the entrance to Parkhill Farm Park.	Any overestimation of traffic results in a conservative assessment of traffic effects (see paragraph 121).
		TIA flaw – The TIA does not account for traffic using new access for Outfoxed, Cricket Club, and Outfield music festival.	These events do not generate sufficient traffic to change the conclusions reached in my

			evidence, especially given the conservative basis on which my evidence has been drafted (see paragraph 128) .
		Traffic safety issues – Poor sightline to the south from 227 Parkhill Road. Proposed mitigation if granted: Improve sightline of access to 227 Parkhill Road to the south.	There is adequate sight distance to/from no.227 given the relevant operating speed (paragraph 122).
		Stormwater issues – Drains do not flow effectively and will create a hazard with increased traffic and widened carriageway. Proposed mitigation if granted: Upgrade road stormwater and improve road culvert between 278 and 326 Parkhill Road.	I am not a drainage engineer so cannot comment. However, any widening of the road will need to include adequate measures to drain away the water.
		Proposed mitigation if granted: A detailed Parkhill Road upgrade plan should be a condition of consent for all require upgrading of the road.	The proposed measures will be a condition of the consent and will be required prior to the operation of the SPS.
Christopher Andrew Hursthouse - Tenant and Farm Manager	272 Parkhill Road	TIA underestimates traffic effects – two people per vehicle not realistic, no consideration given to service traffic, contactors or deliveries, and no consideration has been given to traffic from other Te Awanga Downs activities which may use Parkhill Road, counts taken in the eastern section of Parkhill Road beyond the kindergarten would be lower because it is a no-exit. Proposed mitigation if granted: Other Te Awanga Downs activities not to use Parkhill Rd access.	The assessment has been undertaken on a conservative basis and other sources of traffic are not of sufficient volume to change that assessment (see paragraph 128).
		Impact on Haddington Farm – traffic will affect movement of sheep and cattle along road, which currently occur safely. Stock truck movements will be more difficult.	Majority of traffic is expected outside of normal stock moving hours with peak flows generated

			from the site from 6.00-7.00am and 5.00-6.00pm (see paragraphs 12(b), 48, 55-57, Table 5). Signage and other methods to ensure stock can move along any road safely are the. Stock truck movements will not be hindered due to proposed mitigation ensuring the safety of users on Parkhill Road.
		Timing - traffic impacts will not be restricted to 6-7am and 5-6pm so disruption to other road users and danger to school / kindergarten. Proposed mitigation if granted: Film studio access closed between 7am – 5pm and after 6.30pm.	Majority of traffic is expected outside school/kindergarten/network peak hours with peak flows generated from the site from 6.00-7.00am and 5.00-6.00pm (see paragraphs 12(b), 48, 55-57, Table 5). The applicant has also offered to put in place measures to regulate traffic timing including a traffic management plan.
		Dangers of East / Parkhill Road intersection – increased volumes increase existing risks: including restricted visibility for right-turning traffic (especially larger vehicles) and for cars travelling south turning right into Parkhill Road with cars from Te Awanga cutting the corner.	Alterations are proposed to improve safety outcomes at the Parkhill/East Road intersection (see paragraphs 88, 110-111).

		Proposed mitigation if granted: Parkhill / East Road intersection be re-designed as a roundabout along with additional measures.	Appropriate sightlines are provided (see paragraphs 98-99). Once upgraded consistently with proposed mitigation measures the intersection will have sufficient capacity and safety outcomes for the level of traffic anticipated (see paragraphs 66-70, 88, 110-111). A roundabouts is not considered necessary given the proposed upgrades provide sufficient capacity and safety outcomes (see paragraphs 104-111).
		Dangers of Parkhill / Raymond intersection – increased volumes increase existing risks: dangerous right turning traffic from Raymond Road into Parkhill Road as there is no visibility of traffic approaching from the western side of Parkhill Road. Proposed mitigation if granted: Parkhill / Raymond Road intersection be re-designed as a roundabout along with additional measures.	Provision has been made for upgrades which will improve safety outcomes at the Parkhill/Raymond Road intersection to separate and slow traffic (see paragraphs 85-87, 118 and Appendix C). Appropriate sightlines are provided in both directions considering the relevant operating speed (see paragraphs 94-97).

			A roundabout is not considered necessary given the proposed upgrades provide sufficient capacity and safety outcomes.
		Dangers of children crossing road to access school / kindergarten.	Proposed upgrades sufficiently deal with safety concerns at the Parkhill/Raymond Road intersection as above.
		Dangers to walkers, runners, cyclists, horse riders and stock movements on Parkhill Road given there is no off-road pathway. Proposed mitigation if granted: Walking / cycling / horse path on Parkhill Road.	The applicant proposes to widen the road to 6m which is more than adequate to provide a safe environment for all users (see paragraph 50 and 122).
		Dangers of intersections at Mill Rd, Richmond Rd, SH51 at Clive.	This intersection is too far away from the proposed site to be impacted by the proposed site traffic. I agree with Mike Smith's evidence that any impact on this intersection would be proportional to the level of development and land use in the greater area. Majority of traffic is expected outside network peak hours with peak flows generated from the site from 6.00-7.00am and 5.00-6.00pm (see paragraphs 12(b), 48, 55-57, Table 5). So will have

			negligible effects on other accesses along the corridor.
		Stormwater issues – regular flooding between 272 and 299 Parkhill Road generates a need for extreme caution. Proposed mitigation if granted: Drainage on Parkhill Road rebuilt.	I am not a drainage engineer so cannot comment on this. However, the widening of Parkhill Road will need to include adequate drainage measures.
		Alternatives – a range of options have not been properly considered including Gordon Road, the existing paper road from Clifton Road through Te Awanga Downs, or a new road through or adjacent to the subdivision the current landowner created in Te Awanga.	Provision has been made for upgrades which will improve safety outcomes at the intersections to separate and slow traffic (see paragraphs 85-88, 118 and Appendix C). Once upgraded both intersections and Parkhill Road will have sufficient capacity and safety outcomes for the level of traffic anticipated (see paragraphs 51, 66-70, 110-111 and 121).
		Additional proposed mitigation if granted: • Required road upgrades to be a condition of consent to be built prior to construction of the film studio. • 50km/hr speed limit • Consent condition requested limiting operation to Monday-Friday • Truck driver access times monitored and enforced	As noted above, the proposed measures provide sufficient capacity and safety outcomes. The proposed measures will be a condition of the consent and will be required prior to the operation of the SPS.

			The applicant has offered to put in place measures to regulate traffic timing including a traffic management plan.
Madeleine Riordan - Tenant	272 Parkhill Road	TIA underestimates traffic effects – no consideration given to service traffic, visitor traffic, contractors or deliveries, and no consideration has been given to traffic from other Te Awanga Downs activities which may use Parkhill Road, counts taken in the eastern section of Parkhill Road beyond the kindergarten would be lower because it is a no-exit.	The assessment has been undertaken on a conservative basis and other sources of traffic are not of sufficient volume to change that assessment (see paragraph 128).
		Timing - traffic impacts will not be restricted to 6-7am and 5-6pm so disruption to other road users and danger to school / kindergarten. Proposed mitigation if granted: Film studio access closed between 7am – 5pm and after 6.30pm.	Majority of traffic is expected outside school/kindergarten/network peak hours with peak flows generated from the site from 6.00-7.00am and 5.00-6.00pm (see paragraphs 12(b), 48, 55-57, Table 5). The applicant has also offered to put in place measures to regulate traffic timing including a traffic management plan.
		Dangers of East / Parkhill Road intersection – increased volumes increase existing risks: including restricted visibility for right-turning traffic (especially larger vehicles) and for cars travelling south turning right into Parkhill Road with cars coming from Te Awanga cutting the corner. Risks also to people coming and going to the informal skate-park on this corner.	Alterations are proposed to improve safety outcomes at the Parkhill/East Road intersection (see paragraphs 88, 110-111). Appropriate sightlines are provided (see paragraphs 98-99).

		Proposed mitigation if granted: Parkhill / East Road intersection be re-designed as a roundabout along with additional measures.	Once upgraded consistently with proposed mitigation measures the intersection will have sufficient capacity and safety outcomes for the level of traffic anticipated (see paragraphs 66-70, 88, 110-111). A roundabout is not considered necessary given the proposed upgrades provide sufficient capacity and safety outcomes (see paragraphs 104-111).
		Dangers of Parkhill / Raymond intersection – increased volumes increase existing risks: dangerous right turning traffic from Raymond Road into Parkhill Road as there is no visibility of traffic approaching from the western side of Parkhill Road. Proposed mitigation if granted: Parkhill / Raymond Road intersection be re-designed as a roundabout along with additional measures.	Provision has been made for upgrades which will improve safety outcomes at the Parkhill/Raymond Road intersection to separate and slow traffic (see paragraphs 85-88, 118 and Appendix C). Appropriate sightlines are provided in both directions considering the relevant operating speed (see paragraphs 94-97). A roundabout is not considered necessary given the proposed

			upgrades provide sufficient capacity and safety outcomes.
		Dangers of children crossing road to access school / kindergarten. Proposed mitigation if granted: Street lamps.	Proposed upgrades sufficiently deal with safety concerns at the Parkhill/Raymond Road intersection as above and include additional lighting.
		Dangers to walkers, runners, cyclists, horse riders and stock movements on Parkhill Road given there is no off-road pathway. Proposed mitigation if granted: Walking / cycling / horse path on Parkhill Road.	The applicant proposes to widen the road to 6m which is more than adequate to provide a safe environment for all users (see paragraph 51 and 123).
		Dangers of intersections at Mill Rd, Richmond Rd, SH51 at Clive, including near the Black Bridge refuse centre and Tukituki river carparks.	This intersection is too far away from the proposed site to have any impact from the proposed site traffic. I agree with Mike Smith's evidence that any impact on this intersection would be proportional to the level of development and land use in the greater area. Majority of traffic is expected outside network peak hours with peak flows generated from the site from 6.00-7.00am and 5.00-6.00pm (see paragraphs 12(b), 48, 55-57, Table 5). So will have negligible effects on other accesses along the corridor.

		Additional proposed mitigation if granted: • Required road upgrades to be a condition of consent to be built prior to construction of the film studio. • Consider transport sharing options • 50km/hr speed limit • Consent condition requested limiting operation to Monday-Friday • Truck driver access times monitored and enforced	As noted above, the proposed measures provide sufficient capacity and safety outcomes. The proposed measures will be a condition of the consent and will be required prior to the operation of the SPS. The applicant is offering to put in place a management plan which includes consideration of ride sharing.
Parkhill Family Trust (Annah and Jonathon Knight)	299 Parkhill Road	Traffic intensity - Increase from 180vpd to 650vpd at peak times over 7 days a week will affect current children walking / biking, cyclists, walkers, horse riders and movement and roadside grazing of stock. Proposed mitigation if granted: Need for pedestrian cycle path down Parkhill Road.	The applicant proposes to widen the road to 6m which is more than adequate to provide a safe environment for all users (see paragraph 51 and 123).
		East / Parkhill Road and Raymond/Parkhill Road intersections are poorly designed even for existing levels of traffic, significant increase will result in dire outcome. Proposed mitigation if granted: • Additional road lighting • Upgrading of intersection to roundabout	Provision has been made for upgrades which will improve safety outcomes at the Parkhill/Raymond Road intersection to separate and slow traffic and including lighting (see paragraphs 85-88, 118 and Appendix C). Alterations are also proposed to improve safety outcomes at the Parkhill/East Road intersection (see paragraphs 88, 110-111).

			Appropriate sightlines are provided both intersections (see paragraphs 94-99). Once upgraded both intersections will have sufficient capacity and safety outcomes for the level of traffic anticipated (see paragraphs 66-70, 110-111). Roundabouts are not considered necessary given the proposed upgrades provide sufficient capacity and safety outcomes (see paragraphs 104-111 in respect of Parkhill/East Road intersection).
		Timing – Trucks will not adhere to proposed peak traffic periods and create danger to school / kindergarten intersection.	Majority of traffic is expected outside school/kindergarten/network peak hours with peak flows generated from the site from 6.00-7.00am and 5.00-6.00pm (see paragraphs 12(b), 48, 55-57, Table 5). The applicant has also offered to put in place measures to regulate traffic timing including a traffic management plan.

		Timing– 6am to 7am starts and 5pm to 6pm finishes correspond with current recreational use of road (walking/cycling)	The applicant proposes to widen the road to 6m which is more than adequate to provide a safe environment for all users (see paragraph 51 and 123).
		Dangers of children crossing road to access school / kindergarten. Proposed mitigation if granted: Install pedestrian crossing close to kindergarten.	Proposed upgrades sufficiently deal with safety concerns at the Parkhill/Raymond Road intersection as above.
		Stormwater – stream currently spills over road during heavy rain near 299 Parkhill Road is a hazard and has not been identified in TIA. Proposed mitigation if granted: Works to prevent the stream from flooding.	I am not a drainage engineer so cannot comment on this. However, the widening of Parkhill Road will need to include adequate drainage measures.
		Driveway to Te Awanga Estate – used as a thoroughfare by Te Awanga creating a dangerous three-way intersection.	This has very minimal traffic movements and is a private access only – there is no public thoroughfare.
		Lack of detail about proposed upgrades – more certainty on implementation sought.	Proposed measures set out in more detail than previously (see paragraphs 85-88, 118 and Appendix C).
		Proposed mitigation if granted: Required road upgrades to be a condition of consent to be built prior to construction of the film studio.	The proposed measures will be a condition of the consent and will be required prior to the operation of the SPS.
Mark and Jan Toms - Tenant	307 Parkhill Road	Traffic safety - Raymond / Parkhill Road and East / Parkhill Road intersections are already dangerous due to limited visibility.	Provision has been made for upgrades which will improve

		Proposed mitigation: Redesign of intersections as roundabouts, works to be completed prior to construction of film studio.	safety outcomes at the Parkhill/Raymond Road intersection to separate and slow traffic (see paragraphs 84-88, 118 and Appendix C). Alterations are also proposed to improve safety outcomes at the Parkhill/East Road intersection (see paragraphs 88, 110-111). Appropriate sightlines are provided both intersections (see paragraphs 94-99). Once upgraded both intersections will have sufficient capacity and safety outcomes for the level of traffic anticipated (see paragraphs 66-70, 110-111). Roundabouts are not considered necessary given the proposed upgrades provide sufficient capacity and safety outcomes (see paragraphs 104-111 in respect of Parkhill/East intersection).
		Timing - Concerned traffic increases will be spread over the day and not limited to peak hours.	Majority of traffic is expected outside peak network hours as a result of the operational

			requirements of the studio which limits risks of significant traffic generated at other times. Peak flows generated from the site from 6.00-7.00am and 5.00-6.00pm (see paragraphs 12(b), 48, 55-57, Table 5). The applicant has also offered to put in place measures to regulate traffic timing including a traffic management plan.
		Proposed additional mitigations if granted: • 50km/hr speed limit on Parkhill Rd • Walking / Cycling path on Parkhill Rd	The proposed upgrades (including the widening of Parkhill Road) sufficiently address safety concerns.
Matt and Amy Nilsson - Tenant	326 Parkhill Road	Safe access – the proposal offers the easiest and safest access and the current safety of the one lane Parkhill Road will be improved.	
		Improvements to East Road Intersection – proposed upgrades supported.	Alterations are proposed to improve safety outcomes at the Parkhill/East Road intersection (see paragraphs 88, 110-111). Once upgraded consistently with proposed mitigation measures the intersection will have sufficient capacity and safety outcomes for the level of traffic anticipated (see paragraphs 66-70, 88, 110-111).

		Parkhill Road to Entrance – currently dangerous with increase in traffic and cyclists so support widening.	The applicant proposes to widen the road to 6m which is more than adequate to provide a safe environment for all users (see paragraph 51 and 123).
		Proposed measure: Separate off road cycle / walking track linking with existing tracks.	The applicant proposes to widen the road to 6m which is more than adequate to provide a safe environment for all users (see paragraph 51 and 123).
Marc and Joanne Anderson	373 Parkhill Road	Traffic safety on Parkhill Rd - Including for walking & cycling.	The applicant proposes to widen the road to 6m which is more than adequate to provide a safe environment for all users (see paragraph 51 and 123).
		Traffic safety - East / Parkhill Road intersection is dangerous as a blind corner.	Alterations are proposed to improve safety outcomes at the Parkhill/East Road intersection (see paragraphs 88, 110-111). Appropriate sightlines are provided (see paragraphs 98-99). Once upgraded consistently with proposed mitigation measures the intersection will have sufficient capacity and safety outcomes for the level of traffic

			anticipated (see paragraphs 66-70, 88, 110-111).
		Impacts on 373 Parkhill Road – Do not want turning circle outside driveway.	A turning circle already exists so that vehicles can turnaround as the accesses at the end are private. There is a slight increase in the width of the turning circle proposed so that trucks can turnaround if required.
		Te Awanga Estate entrance – Concern road upgrade will result in more traffic through the shingle Te Awanga Estate entrance.	This entrance/access is a private access/road no public thoroughfare is technically permitted. If there is an increase in traffic however, Parkhill Road has adequate width and formation to cater for this.
The Estate of R C Macniven (Robert Averill Fitzharding Kingscote)	No local address – Traffic only	Danger at intersections – Impaired vision, poor turning lines and increasing volumes of traffic.	Provision has been made for upgrades which will improve safety outcomes at the Parkhill/Raymond Road intersection to separate and slow traffic (see paragraphs 85-86, 118 and Appendix C). Appropriate sightlines are provided both intersections (see paragraphs 94-99). Once upgraded both intersections will have sufficient

			capacity and safety outcomes for the level of traffic anticipated (see paragraphs 66-70, 110-111).
		Traffic movement times – unable to be enforced.	Majority of traffic is expected outside peak network hours as a result of the operational requirements of the studio which limits risks of significant traffic generated at other times. Peak flows generated from the site from 6.00-7.00am and 5.00-6.00pm (see paragraphs 12(b), 48, 55-57, Table 5). The applicant has also offered to put in place measures to regulate traffic timing including a traffic management plan.
		Dangers of children crossing road to access school / kindergarten.	Provision has been made for upgrades which will improve safety outcomes at the Parkhill/Raymond Road intersection to separate and slow traffic (see paragraphs 85-88, 118 and Appendix C). Appropriate sightlines are provided in both directions considering the relevant operating speed (see paragraphs 94-97).

		Stormwater issues – Drains do not flow effectively and will create a hazard for increased traffic. Proposed mitigation if granted: Upgrade road stormwater and improve road culvert between 278 and 326 Parkhill Road.	I am not a drainage engineer so cannot comment on this. However, the widening of Parkhill Road will need to include adequate drainage measures.
		Proposed additional mitigation if granted: • A detailed Parkhill Road upgrade plan should be a condition of consent for all require upgrading of the road • Offroad shared path needed along Parkhill Road	The proposed measures will be a condition of the consent and will be required prior to the operation of the SPS. The applicant proposes to widen the road to 6m which is more than adequate to provide a safe environment for all users (see paragraph 51 and 123).