

5 September 2017

Christchurch City Council
City Planning
PO Box 73013
CHRISTCHURCH 8154

Attention: Hanna Afife

Dear Madam

Resource Consent (RMA/2017/1365) for Digital Screen Billboards Signs on Corner of Colombo and Lichfield Streets Hoyts)

As requested we have reviewed the applicants reply to Council's Request for Further Information (RFI), which was provided by Urbis Traffic Planning and Development (on 25th August 2017). This response follows a meeting held between Council, the applicant and Stantec on the RFI on the 7th August 2017. This letter also considers the original application for the sign (as in photo below) and provides a recommendation on whether to approve the sign and the conditions that should apply. But first we provide a response to the RFI.



Request for Further Information (RFI)

The RFI does attempt to provide the majority of the additional information requested, although some questions do remain around the road safety implication of the signs. As discussed at the meeting on the 7th August this is new technology for Christchurch (LED billboard displaying video images) and it was agreed by the traffic specialists that some caution should be taken when introducing such technology when there is no previous local experience of the likely (road safety) effects. Indeed as specified in the Urbis letter the international research that is available does not adequately address this type of installation (low volume and low speed).

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While some examples are provided of video signage in places like Time Square, New York there is no crash data to support whether the signage in these locations does impact on crash occurrence, so this has limited relevance to this assessment. We are aware that central New York has historically had a high number of pedestrian crashes and because of that it is not a good case study to support LED signs (we can source crash data from out of our New York office if that is required). Also the scale of these sites is totally different to what is being proposed in Christchurch.

Our key concerns remain around pedestrian and cycle safety, given the high number of such users, particularly the former, that currently use this intersection, which is likely to increase. Even at the lower speed collisions between motor vehicles and these users can be more severe, compared with crash between two or more motor vehicles. While we are comfortable that short video clips could be trialled on this sign, we do have concern with longer video clips, and people attempting to view the full video clip. We believe that the initial agreement should allow static images and shorter video clips up to 20 seconds. If the monitoring show that this is not creating any safety concerns then we would support longer video clips being trialled and evaluated. We think this conservative approach is valid given the uncertainty around the distraction and road safety impacts of video images being used on such signs.

We are also concerned about the monitoring condition that is proposed. We are generally happy with the crash analysis element of the evaluation, where the crash record is examined and an assessment is made whether the sign is a contributing factor in any crashes that do occur at the intersection and on one of its four approaches. What is not clear is how the traffic conflicts will be measured in such a way that Council can determine whether there has been a noticeable change up or down in conflicts. More on this latter.

We also believe there should be a 'before' survey undertaken of traffic conflicts as a baseline. With any increase in vehicle, pedestrian and bicycle flow factored in, we suggest an increase in traffic conflicts between the current 'before' baseline and any of the 'after' sign installation surveys of more than 30% to be significant. The outcome of an increase in conflicts of greater than 30% being to revert the sign to static images only. In terms of longer video clips (greater than 20 seconds) we suggested that after two 'after' surveys (one year) if the number of conflicts is below the 30% increase that these longer video clips be trialled. If this then triggers an increase in conflicts (of 30% or more above baseline) or crashes then the duration of the video clips goes back to a maximum of 20 seconds.

Assessment of Proposed LED Signage

We recommend approval of the proposed LED signage on the south-west corner of the Colombo and Lichfield intersection, subject to 1) a number of conditions, including an initial restriction on the length of video clips to less than or equal to 20 seconds, being agreed, and 2) a robust monitoring methodology, with measured thresholds and consequences, being agreed.

We are of the opinion that the traffic environment in this location, with low travel speeds (30km/h and lower) and traffic volumes, makes it a suitable location for LED billboards with a static display and also the trialling on shorter video clips. This is not the case at most of the other intersections in the city where speeds are higher (50km/h and above) and/or where traffic volumes are higher. We would not support LED signs with video clips of any length at higher volume and higher speed (>40km/h) intersections in the city.

Because this is new technology (LED billboard displaying video images) for Christchurch, and the uncertainty of the distraction (and road safety) impacts, we support the need for monitoring of crashes and traffic conflicts (near misses) over the next five years. We would need to see a more robust methodology for the traffic conflict analysis, including a base-line analysis before the sign is switched on, before we could sign off on the monitoring requirements.

A list of conditions has been specified in the applicants RFI response. We don't agree with all the conditions, and also suggest some additional conditions be applied. In terms of standard conditions we have attached the list of conditions that we recommend for LED 'static' signage. We will now discuss each of the conditions.

- We do not accept condition 1) as it is not specific (ie. is too general) and may contradict some of the conditions that are being proposed below.
- We accept condition 2) that the sign will have moving and still images. However we recommend that static images, as specified in condition D) attached, do not have animation, flashing, scrolling or intermittent elements. In terms of video images we also want a condition that restricts flashing lighting and scrolling text aimed at drawing attention, due to the potential for these aspects causing additional distraction.
- Based on best practice we suggest condition 3) be modified to a minimum duration of 8 seconds. We would also like the transition time of images or videos (as in condition E) attached) to be not more than 0.5 seconds with no flashing or blinking during those transitions.
- Based on discussion above we would suggest condition 4) be modified to 20 seconds for the first year of operation. If the monitoring shows that shorter video clips are not causing a significant increase in traffic conflicts then we would suggest that longer video clips up to 60 second be trialled.
- We accept condition 5) which is also included in condition F) attached.
- We suggest condition 6) is removed and replaced with conditions A), B) and C) attached.
- We accept condition 7)
- We accept condition 8) on measured lux levels. We suggest the requirements of condition G) attached also be added to this condition.
- The applicant needs to provide more detail on the methodology that will be used for condition 9) the monitoring clause, especially around the traffic conflict analysis (there are methodologies that are available in traffic engineering reports and papers for subjective/manual traffic conflict studies). To be measurable there also needs to be a threshold above which there needs to be a corrective action. We have suggested that if the number of traffic conflicts observed increases by more than 30% above a baseline level (before the sign goes in) then the consequence would be to revert to a static image only LED sign. This would require a baseline survey to be undertaken before the sign is switched on. The same needs to apply to the crashes. We would suggest if one or more serious/fatal crashes or three or more minor injury/non-injury crashes can be attributed to the LED sign then the consequence would be to revert to a static image only LED sign.

Some of the attached conditions, such as sequencing of advertising messages and splitting of each sign into different adverts are not as important for a sign that also displays video. However if monitoring does show that the video images are causing crashes and an increase in traffic conflicts to the extent that required a move back to static images than these conditions should also apply in that intervention.

So at this stage further information needs to be provided for the application, including a full set of conditions, before we can approve the signage on traffic and road safety grounds.

Yours Sincerely



Dr Shane Turner
National Specialist Road Safety
Stantec New Zealand Limited

Attachment 1 – Proposed 'Static' LED Sign Resource Consent Conditions

Type of Information Displayed and Presented

A.Any content displayed on the screen shall comply with the Advertising Standards Authority Advertising Code of Practice and the Broadcasting Act 1989.

B.Any content displayed on the screen should not contain any New Zealand road signs that are specified in the Traffic Control Devices (TCD) Manual or the Manual of Traffic Signs and Marking (MOTSAM). The screen display should also not contain other signs that use the standard colours on New Zealand traffic signs.

C.Any content displayed should exclude phone numbers, email addresses, web-site addresses, physical addresses or any other detailed information on a business. The concern with such information is that drivers may try and write down such details and in the process be distracted from driving their vehicle

LED Display Types

D.The display shall only contain static messages without movement. No animation, flashing, scrolling, intermittent or full-motion video shall be displayed. The display shall not be made of any material that is reflective to other light sources such as vehicle headlights.

LED Sign Display Duration, Transition and Sequencing

E.Only still images shall be displayed on the sign with a minimum duration of 8 seconds per image (except during night-time curfew). The transition between images will be of less than 0.5 seconds. Between transitions there will be no flashing or blinking. A split sign (two or more adverts) shall not be displayed at any one time.

F.Sequencing of advertising material over multiple images is prohibited. Each image should be of a different product and company (brand). Screen images should not be accompanied by sound or music

Brightness, Luminance and Illumination

G.The brightness of the screen shall be adjusted in response to changes in ambient light levels so that the images are not unreasonably bright for the safety of the motoring public. The maximum luminance (brightness) levels during the day-time will be [5000cd/m²], at dawn and dusk will be [600cd/m²] and in the night-time will be [250cd/m²].

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21 December 2017

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Attention: Hanna Afifi

Dear Madam

Resource Consent (RMA/2017/1365) for Digital Screen Billboards Signs on Corner of Colombo and Lichfield Streets Hoyts) Addendum

My previous letter (dated 5 September 2017) specified that we would support the resource consent for this billboard sign on traffic and road safety grounds subject to a number of conditions. The conditions included an initial restriction on the length of video clips to 20 seconds, and the provision of a more robust monitoring methodology over the next five years, that included measured thresholds with respect to crashes and traffic conflict (near misses) and the consequences if these thresholds were exceeded. It is important that any reader of this addendum also reviews this earlier letter to understand the context of our recommendation.

The applicant and the applicant's traffic consultant have responded to the proposed conditions and comments within this earlier letter and following some negotiation a set of conditions including a more robust monitoring regime have been agreed. Given the uncertainty of the road safety impacts of a full video sign, it is important that Council are able to change the operation of the sign, if the sign does lead to unexpected road safety outcomes.

While there is the potential for more severe unsafe outcomes (an increase in the risk of a serious injury crashes or a fatal crash), we are of the view that the risk at this location is low, given the low speed environment. The layout of the road, with narrow traffic lanes and the presence of an intersection platform, along with a low speed limit (30km/h) means the likelihood of serious injury and fatal crashes is likely to be very low on this part of the road network. We expect any crashes between vehicles and either pedestrians or cyclists to be a minor injury. The international research relating crashes to speed is strong and indicates at speeds around 30km/h or lower the risk of serious and fatal crashes is very low.

While the probably of a crash is very low, because of the limited international research on full video sign and no previous experience of use of such a sign in Christchurch, the monitoring regime is a sensible approach that enables Council to react if it clear that the sign is contributing to serious crashes or the pattern of more minor crashes and/or near misses (traffic conflicts) does indicate that a more serious crash may occur. If the monitoring shows an increased risk of crashes then the sign would revert back to showing static images only, where the level of road user distraction is known to be lower. Likewise if the crash and traffic conflict analysis monitoring shows over several years that there is very little or no effect of the sign on road safety, then the applicant will be able to show longer video clips up to 60 seconds in duration.

If you have any further queries please contact the undersigned.

Yours Sincerely

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A handwritten signature in blue ink, consisting of a series of loops and a long horizontal stroke extending to the right.

Dr Shane Turner
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