



## **Windsor Bridge Replacement Project**

### **Out-of-Hours Works Noise Assessment**

**Traffic Switch onto New Windsor Bridge. Rev F**

If the following assessment of the OOHW activity is calculated to be over the NML (+5dBA of the RBL) then signoff required by the following:

Position	Name	Signoff
Georgiou Project Manager		
RMS Environmental Representative Review		
RMS Project Manager Review		
Independent Environmental Representative (ER)		

## Glossary/Abbreviations

GLOSSARY/ABBREVIATIONS	
<b>OOHW</b>	Out of Hours Work
<b>SPL</b>	The sound pressure level is the noise at a given distance from plant or equipment, and the sound pressure level can change depending on the distance from the equipment and also the orientation of the equipment.
<b>SWL</b>	The sound power level is the intrinsic noise output of plant or equipment, and does not depend on distance or orientation of the machine
<b>TCS</b>	Traffic Control System
<b>ITS</b>	Intelligent Control System
<b>TMC</b>	Transport Management Centre
<b>ROL</b>	Road Occupancy Licence
<b>NML</b>	Noise Management Level
<b>Noticeable</b>	5 to 10 dBA above rating background level (RBL)
<b>Clearly audible</b>	10 to 20 dBA above RBL
<b>Moderately intrusive</b>	20 to 30 dBA above RBL
<b>Highly intrusive</b>	>30 dBA above RBL
<b>Sleep disturbance</b>	Sleep disturbance is LAmax of 65 dBA (at the façade of a property)
<b>RBL</b>	Rating Background Level
<b>CNVMP</b>	Construction Noise and Vibration Management Plan
<b>NCA</b>	Noise Catchment Area
<b>DECCW</b>	Department of Environment Climate Change and Water
<b>RNP</b>	Road Noise Policy

**PART 1 – Initial OOHW Request Details**

<b>Location of OOHW:</b>	George Street – Bridge Street intersection and onto new bridge
<b>Proposed OOHW times:</b>	8pm Thursday – Monday 5am
<b>Date of proposed OOHW:</b>	Thursday 7 <sup>th</sup> May – Monday 11 <sup>th</sup> May. Contingency dates (weather permitting) include the following. Thursday 14 May to Monday 18 May 2020 Thursday 21 May to Monday 25 May 2020 Thursday 28 May to Monday 1 June 2020
<b>Name of OOHW requestor</b>	[REDACTED]
<b>Name of Assessor</b>	[REDACTED]
<b>Nearest sensitive receiver:</b>	10 Bridge Street
<b>Supervisor</b>	[REDACTED]

**Description and justification of OOHW (include plant/equipment used):**

This OOHW request is for the asphaltting works required to enable the switching of traffic onto the new bridge. These works will involve the sequential asphaltting of the Bridge Street intersection and the construction of Macquarie park access and at times will require the full detour of the old/new bridge.

The traffic management plan for these works has been developed in consultation with Transport Management Centre (TMC). The sequencing of this works and the requirement to do them consecutively and OOH is due to TMC's road occupancy licence (ROL) restrictions.

To construct the design, six consecutive (day and night) shifts are required. At present, both lanes of traffic through the intersection travel over the area that will be reconstructed as part of the works. To construct the design, traffic needs to be partially or completely removed from the intersection. There are approximately 20,000 vehicles that cross the bridge every day. The nearest crossing of the Hawkesbury river is Richmond. A detour to this crossing would add 45 minutes to journey times for motorists who use Windsor Bridge as well as create heavy congestion through Richmond town centre. To that end, TMC will not allow the closure of Windsor Bridge during the day.

There is also a difference in level of approximately 0.7m between the existing road surface and the new road surface at the intersection of Bridge St and George St means that there is a requirement to place up to four layers of asphalt. As such, the switch must occur over multiple nights because it is not possible to place and compact more than two layers of asphalt in a single shift as there is insufficient time for the asphalt to cool down to place the subsequent layers or return the traffic.

The difference in levels mean that the construction of the pavement in the intersection must be completed before traffic from George St east and west of the intersection can enter Bridge St. This is because there will be level changes in the road surface that cars cannot drive over and there will be insufficient space to provide a roundabout.

In order to complete these works in accordance with TMC's requirements works will be conducted from the Thursday, of the weekend at 8pm and carry on until the Monday. The dates of which will be either of those set out in the sections above. It is not reasonable or feasible to complete these works in blocks with respite periods as, it is explained previously, that the level differences between the existing and the new pavements make it physically impossible to cross in a car, therefore the works have to continue in order to reopen the road and completely switch traffic onto the new bridge in the time designated by TMC. To further understand the timing for these works a works schedule and the timing of the works relevant to standard and non-standard construction hours is provided in Table 1.1 below.

The contingency dates provided in the table above are provided in the event that unfavourable weather or conditions are encountered. As the works can only be completed on a weekend, the contingency dates provided are for the weekends following the proposed weekend.

Table 1.1 Schedule of Works for Traffic Switch Weekend

Work Day	Works Completed during Standard Hours No OOHW application required*	Works Completed during OOHW Period 1	Works completed during OOHW Period 2
Thursday	Works as normal	<b>1800 – 2200</b> Asphalting (traffic control, no bridge detour)	<b>2200 – 0700</b>
Friday	Works as normal	<b>1800-2200</b> Asphalting and bridge detour set up	<b>2200-0800</b> Asphalting Windsor Bridge entirely detoured
Saturday	Asphalting and earthworks behind barriers	<b>0700 - 0800</b> <b>1300 – 2200</b> Asphalting and bridge detour set up	<b>2200 – 0800</b> Asphalting -Windsor Bridge entirely detoured
Sunday		<b>0800 – 1800</b> Contingency (potentially some earthworks and asphalting)	<b>1800 – 0700</b> Relocate barriers and line marking (traffic control)

The RMS Construction Noise Estimator default scenario *Resurfacing Works* is representative of the works to be conducted and will be used in this assessment. The plant used in this scenario is detailed below in Section 2.1.

## 1.1 Additional Requirements for the works (tick all that apply)

Traffic control <input checked="" type="checkbox"/>	Traffic control supervisor <input checked="" type="checkbox"/>	Lighting (if required direct away from receivers) <input checked="" type="checkbox"/>	Other (list) <input type="checkbox"/>
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## 1.2 Emergency Planning

Who in the work team is currently senior first aid qualified?	
Where will the first aid kit be located?	Site offices and site vehicles
Communication to contact assistance in an emergency?	Mobile phones available, supervisor to have mobile phone if staff do not, 2 way radio

## PART 2 – Assessment

### 2.1 Noise Assessment Method

The RMS Construction Noise Estimator – Estimator (Scenario) was used to determine the most impacted residential receivers as a result of the noise levels from the works. The default scenario *Resurfacing Works* was used as a representative scenario for this OOHW.

The plant used in the *Resurfacing Works* scenario and their relative SWL and SPL is detailed below

**NOTE:** While all these plant have been modelled as part of this noise assessment, the actual impact to receivers is expected to be less, as not all plant listed will be used, nor will they be used at the same time. Additionally, all noisy works will be completed prior to midnight.

Plant/ Equipment	LAeq SWL (dBA)	LAeq at 7m (dBA)
Daymakers	98	73
Pavement profiler	117	92
Dump truck	110	85
Front end loader	112	87
Pavement laying machine	114	89
Asphalt truck & sprayer	106	81
Smooth drum roller	107	82

## 2.2 Noise Impact Statement

Table 2.2 below details the following aspects:

**Noise Management Levels:** LAeq(15minute) noise management levels [dB(A)] for the relevant noise catchment/receiver is summarised in the table below. This information has been sourced from the CNVMP. The noise management level (NML) for OOHW is equal to the back ground noise level (RBL) +5dBA.

The residential receivers listed below are those nearest to the works and therefore subject to the greatest impacts. Noise impacts reduce as distance from noise source increases. Therefore the receivers assessed are considered worst case scenarios.

Note: As per NVMP the NML for R3 is used for receivers R16 - R17 and U4 –U6. NML for R4 is used for R11 – R13 and U1 – U3.

**Noise Impacts on Receivers:** The table below also details the predicted total SPL (LAeq 15 minute (dBA)) as determined by the *RMS Construction Noise Estimator – Estimator (Scenario)* and the relative predicted levels above the different NML's. The default scenario *Resurfacing Works* was used as a representative scenario for this OOHW, to predict the most impacted residential receivers as a result of the noise levels from the works.

Additionally, while this assessment is for a continuous block of work between Thursday night shift and Sunday night shift, due to ROL restrictions and the nature of the works to be completed, the receivers **will not** be subject to the predicted noise impacts below for the entirety of the work block. Furthermore, the noise impacts have been assessed based on the night RBL and the impacts during the day will be significantly less.

**Note: The impacts discussed Table 2.2 (dBA above NML) are in relation to the OOHW Period 2 to ensure a worst-case, conservative approach is taken in this assessment.**

Table 2.2 Noise Management Levels and Predicted Noise Levels.

ID	Receiver Location	Noise Management Levels			RBL*	Predicted Noise Impacts Assessment			
		Daytime (7am–6pm)	OOHW Period 1 (6pm–10pm)	OOHW Period 2 (10pm–7am)		Distance to Works	Total SPL LAeq (15 minute) (dBA)	dBA above RBL	dBA above NML
R3	10 Bridge Street	72	61	46	41	10m	84	43	38
R1	27 Wilberforce Rd	68	55	44	39	30m	76	37	32
R17	66 George Street	72	61	46	41	30m	76	35	30
U1	51 George Street	55	47	32	27	50m	62	35	30
R16	3 Thompson Sq	72	61	46	41	45m	73	32	27
R4	53 George Street	55	47	32	27	45m	63	36	31
R11	45 George Street	55	47	32	27	100m	57	30	25
R12	43 George Street	55	47	32	27	110m	56	29	24
R13	41 George Street	55	47	32	27	140m	53	26	21
U2	50 George Street	55	47	32	27	90m	58	31	26
U3	48 George Street	55	47	32	27	110m	56	29	24
U4	3/52 George St	72	61	46	41	60m	61	20	15
U5	20 Bridge Street	72	61	46	41	90m	58	17	12
U6	2/52 George St	72	61	46	41	70m	60	19	14

\*RBL – Rating Background Level (dBA)

\*R – Receivers as identified in the NVMP

\*U – Receivers which have not been identified in the NVMP

■ - dBA which is greater than 30dBA > RBL ('Highly Intrusive' NCA1) (see Figures 1 & 2)

■ - dBA which is between 20 – 30dBA > RBL ('Moderately Intrusive' NCA2) (see Figures 1 & 2)

## 2.3 Risk assessment

Acoustic assessment completed by the ESR to determine if works are above the Noise Management Level (RBL +5dBA) at closest receiver

- ☐ below NML (RBL +5dBA)  
☒ Above NML (RBL +5dBA)

If above NML identify the out of hours works period:

	Standard Hours	OOHW Period 1	OOHW Period 2
Weekdays	No OOHW application required	1800 - 2200 <input checked="" type="checkbox"/>	2200 - 0700 <input checked="" type="checkbox"/>
Saturdays		0700 - 0800 <input checked="" type="checkbox"/> 1300 - 2200 <input checked="" type="checkbox"/>	2200 - 0800 <input checked="" type="checkbox"/>
Sundays and public holidays		0800 - 1800 <input checked="" type="checkbox"/>	1800 - 0700 <input checked="" type="checkbox"/>

If above NML identify the out of hours works category:

Low Risk Category ☐

- No sleep disturbance
- 1800 – 2200 weekdays
- 1300 – 2200 Saturdays
- 0800 – 1800 Sunday & Public Holiday
- 1 or 2 occurrences
- No impulsive or tonal noise vibration

Medium Risk ☐

- Sleep disturbance risk
- 2200 -0700 weekday nights
- 2200 – 0800 Saturday nights
- 1800 – 0700 Sunday & Public Holidays nights

High Risk ☒

- Prolonged work (ie > 1 week)
- Sleep disturbance possible
- Impulsive noise or vibration after 11pm (eg vibratory rolling or rock breaking)

Out of hours works category comment:

The 'high risk' category has been selected for the works, as the works are scheduled for a continuous block between Thursday and Monday morning.

## 2.4 Affected Receivers

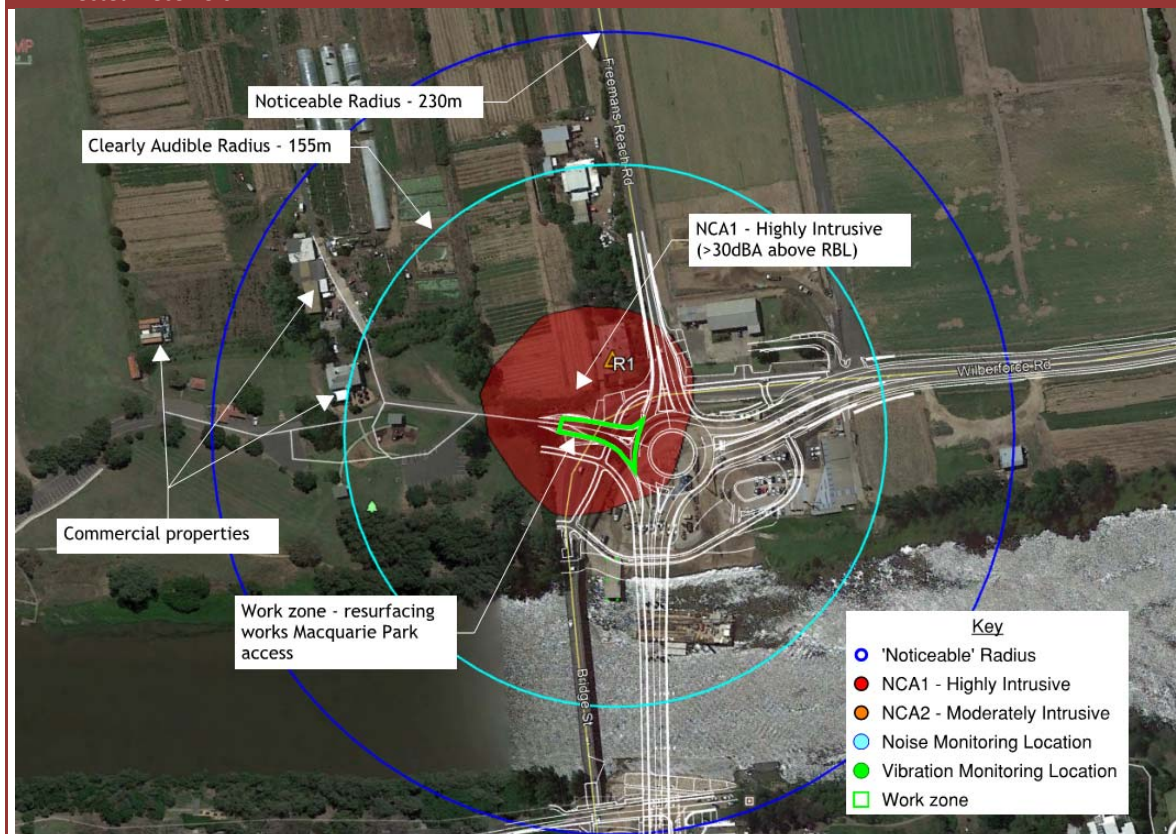
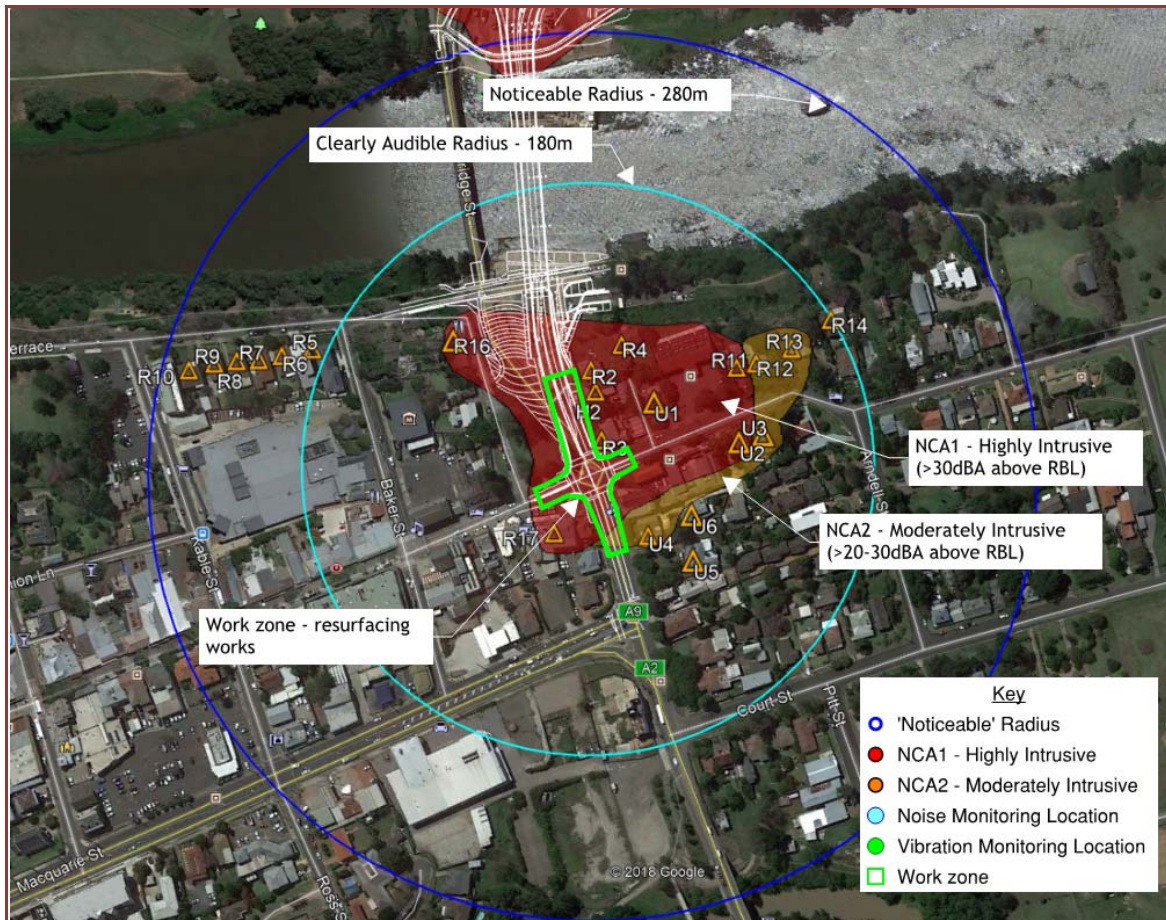


Figure 1.1 Affected receivers, notification area (north bank)





**Figure 1.2 Affected receivers, notification area (south bank)**

Figures 1.1 and 1.2 show the noise impact radii, and noise catchment areas and the receivers which fall within the various noise impact categories as per the *RMS Construction Noise Estimator*. The outer radius of 230m and 280m on the north and south bank respectively, shows the area in which the noise from the OOHW has the potential to be 'noticeable' (5 to 10dBA above RBL). All properties within these radii will be notified.

The inner radii on the north and south bank of 155m and 180m respectively, highlights the receivers in which the noise levels from the OOHW have the potential to be 'clearly audible' (10 to 20dBA above RBL).

The noise catchment areas (NCA's) will be further highlighted in discussed in the following Figures 2.1 and 2.2



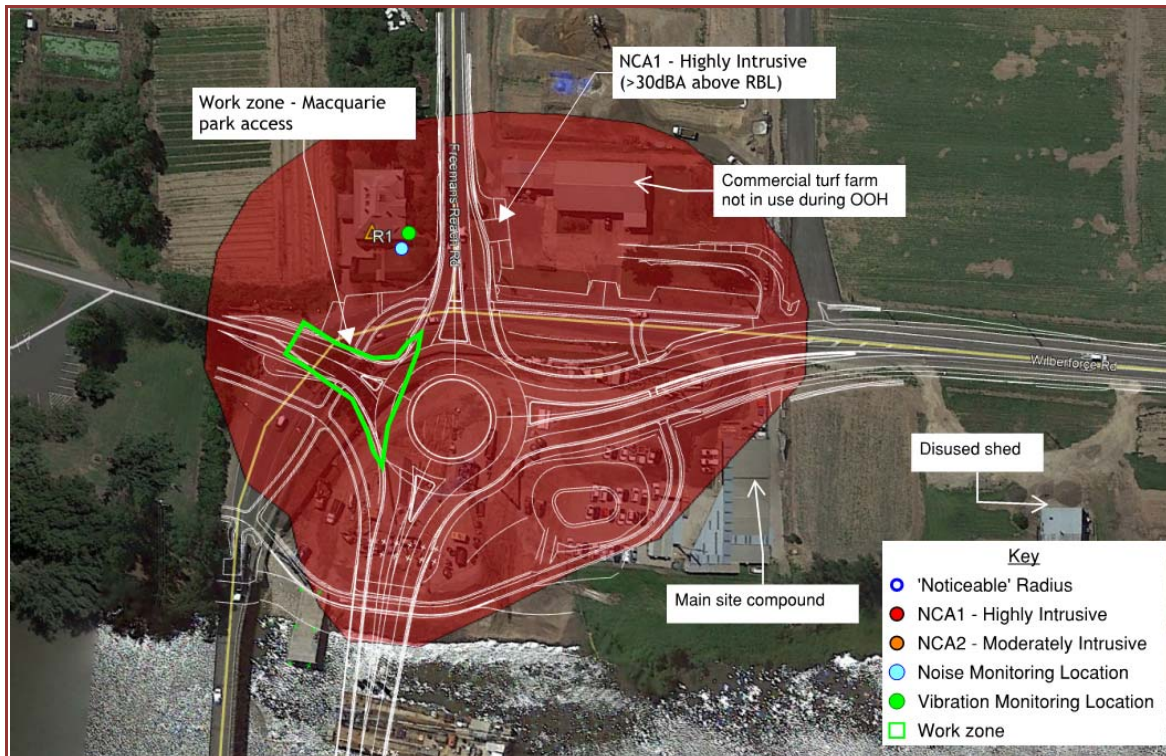


Figure 2.1 Work areas and details of works (north bank)

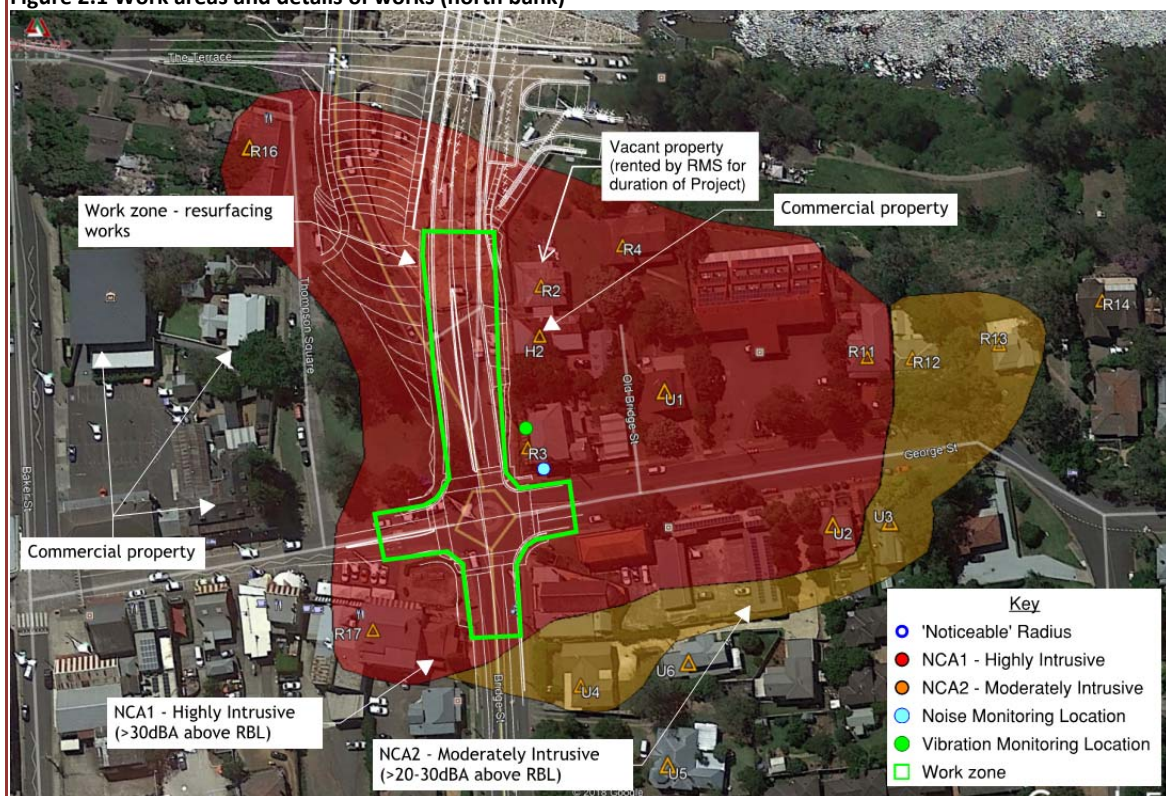


Figure 2.2 Work areas and details of works (south bank)

Figures 2.1 and 2.2 provide closer detail of the NCA's and the receivers within these. NCA2 identifies the area in which the noise generated from OOHW have the potential to be 'moderately intrusive', the receivers within this area will additionally have specific notification by way of phone call or door knocking prior to the works. NCA1 highlights the area in which the noise generated from the OOHW has the potential to be highly intrusive, in accordance with the Noise and Vibration Management Plan, receivers within these areas will be offered alternate accommodation.



It is important to note that this modelling is based on the 'night' RBL's which is significantly lower than that of the 'day' RBL. The impacts during the OOH day shifts will be considerably less than what is modelled here.

## 2.5 Sleep Disturbance Risk

An assessment was also carried out to determine the sleep disturbance impact of the work. Noise impacts or events that can cause interruptions to sleeping patterns are considered separately to noise levels during works outside standard hours. The ICNG does not provide a specific method for assessment of potential sleep disturbance noise impacts; and guidance on the acceptability of these events is taken from the NSW Road Noise Policy (RNP) (DECCW, 2011).

The RNP provides targets for considering sleep disturbance impacts:

- Sleep disturbance screening criterion – used to identify situations where there is the potential for sleep disturbance.
- Sleep disturbance awakening criterion – levels below which awakening is unlikely to occur.

The sleep disturbance screening criterion recommends that where the LA1 (1 minute) does not exceed the LA90 (15 minute) by 15 dB(A) or more, sleep disturbance impacts are likely to be maintained at an acceptable level. The LA1, (1 minute) descriptor is meant to represent a typical maximum noise level when measured using a 'fast' time response. The sleep disturbance awakening guideline is the threshold at which an awakening reaction is likely to occur.

Research discussed in the RNP identified this threshold to be an internal bedroom noise level of around 50 to 55 dB(A). Windows often allow the greatest amount of sound transmission from outside to inside across a building façade.

Noting guidance presented in AS2436-2010, where bedrooms are ventilated by an opened window, a sleep disturbance awakening criterion measured outside the bedroom window of 60 to 65 dB(A) less the conversion from LAeq 15 minute to an LA 1 minute (conservatively assumed to be 10 dB(A)) would generally apply (i.e. 55 dB(A)).

The proposal would have the potential to create sleep disturbance to:

- Receivers located within 180m of the work zone where there is a line of sight to the property
- Receivers located within 70m of the proposed works where there is no line of sight

This includes the following properties:

- R1: 27 Wilberforce
- R16: 3 Thompson Square
- R3: 10 Bridge Street
- U1: 51 George Street
- R17: 66 George Street
- R4: 53 George Street

This has been modelled via the *RMS Construction Noise Estimator – Distance (scenario)* to experience sleep disturbance noise levels of L<sub>Amax</sub> 65 dB(A). This assessment has been conducted for the works on both the north and south banks.

The mitigation measures outlined in Section 2.7 and 2.8 minimise the identified sleep disturbance risk and sleep disturbance remains at a 'risk' level. This however no longer includes the offer of alternate accommodation for these receivers, who will be consulted regarding the preferred mitigation measures as discussed in Section 2.8. Details of the community consultation including the letter of alternate accommodation is provided in Appendix 1.

## 2.6 Standard noise mitigation measures

## Why not? / Comment

Can work be carried out during a less sensitive time period?	No	ROL requirements do not allow for the works to be complete during standard construction hours
Are all construction vehicles fitted with non-tonal reversing ambient sensitive alarms?	Yes	Site vehicles have non-tonal beepers installed.
Can mobile acoustic hoarding be used to shield stationary items where noise levels are 20 dB(A) above RBL at affected receivers?	Potentially	Can be used in some instances, will be assessed on site
Is there appropriate communication method on site to avoid communicating at elevated voice levels?	Yes	Two-way radios or mobile phones will be used in lieu of elevating voices

**Identify any other standard measures where applicable:**

Other standard mitigation measures will also be implemented these include;

- No shouting, swearing or loud music
- Two-way radios will be used for communication in lieu of shouting, whistling, horns etc.
- No dropping of materials or objects
- Affected receivers will be notified of the upcoming works
- Works resulting in an impulsive or tonal noise emission will be undertaken in continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block.
- Works will commence as soon as the ROL permits to allow for early as possible completion
- Site vehicles and plant that have non-tonal 'quackers' will be used to complete the works
- Regular monitoring of construction lighting will be done to avoid unnecessary light spill
- Noisier works such as jackhammering and concrete cutting will be completed prior to midnight where possible
- Attended monitoring will occur during all out-of-hours work to confirm the predictions in the noise assessment were accurate. Monitoring will occur at the nearest sensitive receiver. Monitoring will also occur if a complaint is received during any works including out-of-hours work.
- Receivers within NCA1 – 'Highly Intrusive' will be consulted regarding the preferred mitigation measures as discussed in Section 2.8.

The mitigation measures detailed here will be conveyed to all staff through a pre-start tool box

**2.7 Additional Noise Mitigation Measures**

Table 2.7 below details the noise impact categories as per the RMS Construction Noise Guidelines and the mitigation measures which are triggered by each category. Additionally, the table details the distance which is affected by the relative noise impact category and the receivers which fall within that category.

Duration respite has not been included as an additional mitigation measure for the reasons included in Section 2.8. However consultation with the 17 affected properties in NCA1 and NCA2 has occurred. Of the 17, 2 were vacant properties, 5 were not home and of the 11 that were contacted, no residents had any issues with the works. A detailed consultation strategy and results of the community consultation is provided in Appendix 1.

Note: The impacts and mitigation measures discussed are in relation to the OOHW Period 2 to ensure a conservative approach is taken in this assessment

**\*\*Identify noise affected zones and additional noise mitigation measures using Roads and Maritime's Maintenance Noise Estimator\*\***

Noise Impact Category and relative mitigation measures (See Section 3 below for definitions)	Affected distance [metres]	Applicable Residential Receivers
<b>Noticeable</b> (5 to 10 dBA above RBL) <b>Notification</b>	230m (north bank) 280m (south bank)	All in 'Noticeable' radii
<b>Clearly Audible</b> (10 to 20 dBA above RBL) <b>Notification</b>	155m (north bank) 180m (south bank)	All in 'Clearly Audible' radii
<b>Moderately Intrusive</b> (20 to 30 dBA above RBL) <b>Notification, Phone Call (or other form of engagement), Specific Notification</b>	70m (without line of sight)	All in NCA2: U4, U3, R12, R13
<b>Highly Intrusive</b> (>30 dBA above RBL) <b>Alternative accommodation, Phone Call (or other form of engagement), Specific Notification Respite Period 1</b>	10m (with line of sight)	All in NCA1: R1, R16, R4, R3, U1, R11, U2, R17

## 2.8 Mitigation Measures Comments

- **Community Consultation:** Early community consultation has been carried out in preparation for the works (December 2019). Further community consultation has been conducted commencing the 2<sup>nd</sup> of April 2020, this consultation has detailed the proposed dates for the works, including the contingency dates as well as the reasoning behind the need for contingency. More information on community consultation can be found in Appendix A – Community Consultation Strategy.
- **Notification:** All residents within the 'Noticeable' radius will be notified by letter box drop of the works prior to construction
- **Engagement:** The majority of the residents within the "noticeable" radii have been consulted with in December 2019, the residents have been made aware of the works and the further notifications to come and there has been no objections to the works. Furthermore, all in residents within moderately intrusive NCA (NCA2) will have other forms of engagement such as phone call or door knock prior to works commencing.
- **Respite Period 1/2:** Due to the nature of the works and the justification provided in Part 1, the works cannot adhere to the respite periods. As such, extensive community consultation has begun for the works to ensure the community are well informed.
- **Duration Respite:** Duration respite is not relevant to this assessment as there is no other way to complete the works without any further disruptions to the community. As there is some works which require the closure of both bridges and a detour of 45 minutes through Richmond, TMC will only permit this on a weekend night shift. There is also a lot of works to enable these night shift works and therefore the shifts must be completed consecutively.
- **Alternate Accommodation** - Alternate accommodation will not be re-offered to affected residents due to the current COVID-19 pandemic and the government health guidelines which strongly recommended people to stay inside their homes. A letter of offer of alternate accommodation was provided in December 2019 to the following residents: All in NCA1, R3, R1, R17 U1, R16, R4, R11, U2 and two residents within NCA2 which are potentially subject to higher noise, R12 and U3. No residents took up the letter of offer during this time. If further noise mitigation is required, in the absence of alternative accommodation, the Project will work with the individual resident/s to provide a reasonable solution such as offering noise cancelling headphones in the event that residents indicate that the noise will be an issue for them.

## 2.9 Monitoring During OOHW

### Noise Monitoring

Noise monitoring will be conducted throughout the works to confirm that the noise levels predicted in this assessment are accurate. The monitoring locations have been chosen as they are the properties of the nearest sensitive receivers. Additionally, safety of the personnel undertaking the noise monitoring has been taken into consideration with locations chosen that are in close proximity to the main works. As these monitoring locations are close to the works, they are considered to be 'worst-case scenario' and noise levels at a greater distance from the works to be significantly less. The receiver which monitoring will be conducted at is R1: 27 Wilberforce Road on the north bank and R3: 10 Bridge Street on the south bank.

### Vibration Monitoring

Vibration monitoring will be conducted on the heritage properties closest to the works – 27 Wilberforce Road on the north bank and 10 Bridge Street on the south bank.

## 2.10 Community Consultation

Initial community consultation was conducted in December 2019 to ensure that the community were well informed about the proposed works program. At that time the majority of the community raised no objections to the works being completed.

17 properties were contacted for follow up consultation regarding the date change and contingency dates that are the subject of this amended OOHW noise assessment. Given the current COVID-19 pandemic, this consultation was conducted through non-contact methods such as phone, email and/or text. Of the 17 properties, responses were received from 9 residents. None of the respondents had any issues with the dates required for the traffic switch. One property remains vacant, and the remaining 7 properties were contacted by calling card, phone call, email and/or text and asked to contact the project.

Prior to proposed works being undertaken the affected receivers in NCA1 and NCA2 will receive targeted notification and the affected receivers within NCA1 will be consulted regarding preferred mitigation measures as discussed in Section 2.8.

The details and results of the community consultation and the example letters that were developed to previously offer alternate accommodation are found in the Community Consultation Strategy for these works attached as Appendix A.



In the event a contingency weekend is required, an updated notification will be distributed and follow up consultation will occur with the impacted residents at least 5 days prior to the rescheduled date.

## 3.0 Definition of mitigation measures from RMS Construction Noise Estimator for Individual Plant

Abbreviation	Measure	Description
N	Notification (letterbox drop or equivalent)	Advanced warning of works and potential disruptions can assist in reducing the impact on the community. The notification may consist of a letterbox drop (or equivalent) detailing work activities, time periods over which these will occur, impacts and mitigation measures. Notification should be a minimum of 5 working days prior to the start of works. The approval conditions for projects may also specify requirements for notification to the community about works that may impact on them.
SN	Specific notifications	Specific notifications are letterbox dropped (or equivalent) to identified stakeholders no later than seven calendar days ahead of construction activities that are likely to exceed the noise objectives. The specific notification provides additional information when relevant and informative to more highly affected receivers than covered in general letterbox drops. The exact conditions under which specific notifications would proceed are defined in the relevant Additional Mitigation Measures. This form of communication is used to support notifications, or to advertise unscheduled works.
PC	Phone calls	Phone calls detailing relevant information made to identified/affected stakeholders within seven calendar days of proposed work. Phone calls provide affected stakeholders with personalised contact and tailored advice, with the opportunity to provide comments on the proposed work and specific needs. Where the resident cannot be telephoned then an alternative form of engagement should be used.
IB	Individual briefings	Individual briefings are used to inform stakeholders about the impacts of high noise activities and mitigation measures that will be implemented. Project representatives would visit identified stakeholders at least 48 hours ahead of potentially disturbing construction activities. Individual briefings provide affected stakeholders with personalised contact and tailored advice, with the opportunity to comment on the project. Where the resident cannot be met with individually then an alternative form of engagement should be used.
RO	Respite offer	Respite Offers should be considered made where there are high noise and vibration generating activities near receivers. As a guide work should be carried out in continuous blocks that do not exceed 3 hours each, with a minimum respite period of one hour between each block. The actual duration of each block of work and respite should be flexible to accommodate the usage of and amenity at nearby receivers. The purpose of such an offer is to provide residents with respite from an ongoing impact. This measure is evaluated on a project-by-project basis, and may not be applicable to all projects.
R1	Respite period 1	Out of hours construction noise in out of hours period 1 shall be limited to no more than three consecutive evenings per week except where there is a Duration Respite. For night work these periods of work should be separated by not less than one week and no more than 6 evenings per month.
R2	Respite period 2	Night time construction noise in out of hours period 2 shall be limited to two consecutive nights except for where there is a Duration Respite. For night work these periods of work should be separated by not less than one week and 6 nights per month. Where possible, high noise generating works shall be completed before 11pm.

**3.0 Definition of mitigation measures from RMS Construction Noise Estimator for Individual Plant**

Abbreviation	Measure	Description
DR	Duration respite	Respite offers and respite periods 1 and 2 may be counterproductive in reducing the impact on the community for longer duration projects. In this instance and where it can be strongly justified it may be beneficial to increase the work duration, number of evenings or nights worked through Duration Respite so that the project can be completed more quickly. The project team should engage with the community where noise levels are expected to exceed the NML to demonstrate support for Duration Respite. Where there are few receivers above the NML each of these receivers should be visited to discuss the project to gain support for Duration Respite. Support may be demonstrated from surveys, contact phone numbers and community events.
AA	Alternative accommodation	Alternative accommodation options may be offered to residents living in close proximity to construction works that are likely to experience highly intrusive noise levels. The specifics of the offer will be identified on a project-by-project basis. Additional aspects for consideration shall include whether the highly intrusive activities occur throughout the night or before midnight. This measure is currently not available due to the Covid-19 pandemic.
V	Verification	Please see Appendix F of CNVG for more details about verification of Noise and Vibration levels as part of routine checks of noise levels or following reasonable complaints. This verification should include measurement of the background noise level and construction noise.

## Appendix A

### Community Consultation Strategy for OOHW No. 31

#### 1. INTRODUCTION

##### 1.1 Purpose

The purpose of this strategy is to detail the community consultation to be conducted prior to and during the OOHW. As it is necessary that these OOHW are completed in one continuous block commencing Thursday 8pm until Monday 5am, the works will need to be completed under 'Duration Respite'.

This Appendix has been updated to reflect the further community consultation conducted following the date change and the proposed contingency dates. It is important to note that this consultation is being conducted during the midst of the COVID-19 pandemic, whereby government health guidelines encourage people to stay inside their homes and restrict the movement of people to reduce the risk of infection. As this is the case, doorknocking as part of the community consultation will not be conducted, instead the team will be phoning/emailing and doing a letter box drop with a call out card.

##### 1.2 Requirements of Mitigation Measures

The requirements of consultation:

*Specific notifications are letterbox dropped (or equivalent) to identified stakeholders no later than seven calendar days ahead of construction activities that are likely to exceed the noise objectives.*

*Phone calls detailing relevant information made to identified/affected stakeholders within seven calendar days of proposed work. Phone calls provide affected stakeholders with personalised contact and tailored advice, with the opportunity to provide comments on the proposed work and specific needs*

As such the project team will engage with affected receivers by way of phone call, email or letter box drop.

The requirements of alternate accommodation are as follows;

*Alternative accommodation options may be offered to residents living in close proximity to construction works that are likely to experience highly intrusive noise levels. (Source: RMS Construction Noise and Vibration Guidelines)*

The project team has assessed the need for alternate accommodation and given the COVID-19 pandemic it is not appropriate to offer alternative accommodation at this time when the government guidelines strongly encourage the public to stay within their homes. Additionally, there was no take up of this offer following the consultation conducted in December 2019.



## 2. CONSULTATION MATERIAL

### 2.1 Transcript Example for Community Consultation (Phone Call)

*We are here today on behalf of Georgiou, RMS and the Windsor Bridge Project, to speak with you regarding some upcoming out of hour's works. The works are planned for the 7<sup>th</sup> to the 11<sup>th</sup> of May. With the following dates proposed for contingency if adverse weather is encountered:*

- Thursday 14 May to Monday 8 May 2020*
- Thursday 21 May to Monday 25 May 2020*
- Thursday 28 May to Monday 1<sup>st</sup> June*

*These works are necessary to allow for the switching of the traffic onto the new bridge. The works will consist of;*

- Removal of the existing pavements and laying of new pavements at the intersection of George and Bridge Street leading up to the new bridge*
- Some moving of barriers*
- Some minor earthworks during the day Saturday*
- Some minor works and potentially asphaltting during the day Sunday*
- Moving barriers and line marking on Sunday night.*

*It is necessary we do all these works in a continuous block as there are restrictions on road occupancy and there will be detours of the old and new Windsor Bridge for both Friday and Saturday night to complete these works. There is also significant differences in the levels of the new pavements and the old pavements, which means the road would be non-trafficable at times.*

*You will be made aware of these works closer to the date through written notifications and media releases.*

**2.2 Letter of offer of alternate accommodation (Not used – provided during December consultation only)**

GEORGIOU GROUP PTY LTD  
New South Wales Office  
Suite 3.02, 53 Berry Street  
North Sydney NSW 2060  
PO Box 6193  
North Sydney NSW 2059  
T: +61 2 8072 3600  
F: +61 2 8072 3601  
E: [nsw@georgiou.com.au](mailto:nsw@georgiou.com.au)  
W: [www.georgiou.com.au](http://www.georgiou.com.au)  
ABN: 82 073 851 948

To the Resident,

The Georgiou Windsor Bridge Project Team have recently engaged with you regarding the upcoming out of hours works, in which we discussed and you understand with the following;

- These works will be carried out between Thursday 26<sup>th</sup> of March at 8pm and carry on continuously until Monday 30<sup>th</sup> of March at 5am.
- You will be notified of these works beginning one week prior to works commencing
- These works will consist of;
  - Milling of existing asphalt and resurfacing with new asphalt of Bridge Street and onto the new Windsor Bridge
  - Some barrier removals and minor traffic switches
  - Line marking

Even though the works will be conducted in a continuous block, not all works will be noisy. However, if you feel as though the noise from these works may impact you negatively and you would require alternative accommodation during this time or have any questions relating to the construction please contact the Georgiou Windsor Bridge Project Team on 1800 983 657 or email [windsorbridge@georgiou.com.au](mailto:windsorbridge@georgiou.com.au)

Kind regards,

The Georgiou Windsor Bridge Project Team

**OOHW community notification**



## Opening the new Windsor Bridge to traffic



### Temporary traffic changes will be in place including full bridge closures from Thursday 7 May to Monday 11 May 2020

Transport for NSW are switching traffic on to the new Windsor Bridge. For this to happen we will need to work continuously over an extended weekend to prepare the road and the bridge approaches for vehicles.

This work will involve temporary road closures and traffic changes including periods of complete bridge closure with a detour in place via Richmond Bridge that will add up to an additional 45 minutes of travel time.

There will be some **temporary** traffic changes and **detours** in place to ensure the work zone is safe for motorists and workers including a 40km/hour work zone speed limit.

Motorists are encouraged to avoid the area over this weekend of work if possible.

Emergency vehicles will have access to the bridge at all times.

Changed traffic conditions will impact the following areas.

- Bridge access including Bridge and Wilberforce Roads including the Macquarie Street intersection and Macquarie Park access.
- George Street east and west access at Bridge Street intersection
- Freemans Reach Road

See the table over the page for more detail.

VMS signage will be in place two weeks before works starts advising motorists of the work and changes to traffic conditions. Traffic controllers will also be in place during the work. Please keep to speed limits, follow signs and traffic controllers' directions. See the maps over the page for details of the traffic detours.

For the latest traffic updates, you can call 132 701, visit [livetraffic.com](https://www.livetraffic.com) or download the Live Traffic NSW App.

## Temporary traffic changes

Windsor Bridge access changes Thursday 7 May to Monday 11 May
Thursday 7 May night work <ul style="list-style-type: none"><li>Traffic will be reduced to a single lane with stop-slow management through the intersection of Bridge and George Streets.</li><li>Motorists should expect delays at the Macquarie Street and George Street intersections as well as the bridge approaches.</li></ul>
Friday 8 May night work – <b>bridge closed 10pm – 8am</b> <ul style="list-style-type: none"><li>Bridge closed to southbound traffic, detour via Richmond Bridge between 9pm and 10pm</li><li>Full bridge closure, detour via Richmond Bridge between 10pm and 8am</li><li>A detour will be in place which will add up to an additional 45 minutes travel time.</li></ul>
Saturday 9 May - day work <ul style="list-style-type: none"><li>Traffic switched on to the new bridge</li><li>Two lanes open, one each way</li></ul>
Saturday 9 May - night work - <b>bridge closed 10pm – 8am</b> <ul style="list-style-type: none"><li>Bridge closed to south bound traffic, detour via Richmond Bridge between 9pm and 10pm</li><li>Full bridge closure, detour via Richmond Bridge between 10pm and 8am</li><li>A detour will be in place which will add up to an additional 45 minutes travel time.</li></ul>
Sunday 10 May - day work <ul style="list-style-type: none"><li>Two lanes open, one each way on the new bridge</li></ul>
Sunday 10 May - night work <ul style="list-style-type: none"><li>Traffic will be reduced to a single lane with stop-slow on new bridge</li></ul>
Monday 11 May <ul style="list-style-type: none"><li>Two lanes open, one each way on new bridge from 7am</li></ul>

George Street access changes: Friday 8 May to Monday 11 May
George Street West closed between the intersection and Thompson Square laneway <ul style="list-style-type: none"><li>Access to Bridge Street will be via Thompson Square, The Terrace, Baker Street then Macquarie Street, access to shops on George Street (from Bridge Street) via Macquarie Street, Kable Street then Baker Street.</li></ul>
George Street East closed <ul style="list-style-type: none"><li>Access will be via Court and Arndell Streets.</li></ul>

Freemans Reach Road Closure from Friday 8 May
Reconstruction of Freemans Reach Road will start on the weekend traffic is switched to the new bridge and continue for approximately 12 weeks, weather permitting. A detour will be in place via Gorricks Lane, Kurmond Road, Putty Road and Wilberforce Road for the duration of the closure.
Access will be provided for residents <b>ONLY</b> on Freemans Reach Road via Gorricks Lane. Directly impacted residents will be notified separately.

Please see scheduled contingency dates on page 3

## What is happening?

Transport for NSW will be working on both sides of the river and will impact the intersection of Bridge and George Streets, Macquarie Street, the new Windsor Bridge, Wilberforce Road, Freemans Reach Road and Macquarie Park access.

We will be asphaltting sections of Wilberforce Road, followed by four for days and four nights of continuous work to prepare the area to switch traffic from the existing Windsor Bridge to the new Windsor Bridge. During this weekend we will also work on the new access road for Macquarie Park.

We have included a map over the page to show the work area.

This work will include:

- milling and asphaltting
- excavation of existing road at the entrance to Macquarie Park
- construction of an earth embankment at the entrance to Macquarie Park
- installation of new services and drainage at the entrance to Macquarie Park
- relocation of concrete barriers
- line marking
- switching traffic from the old bridge to the new bridge.

## How will the work affect you?

Traffic control will be in place to manage pedestrian and vehicle access during these works.

There may be some impact to local residents during this work, including noise and lighting. We will make every effort to minimise these impacts by:

- turning vehicles and machinery off when not in use
- using non-tonal quackers on vehicles and machinery
- two-way radios for communication
- noisier works to be completed prior to midnight where possible
- directing noise-generating equipment and lights away from properties where possible
- carrying out noise and vibration monitoring during the work.

Pedestrian and vehicle access to Macquarie Park will be closed from Friday 8 May to Wednesday 13 May 2020.

## Our work schedule

Some of this work needs to be carried out at night to minimise impact to the road network and to ensure the safety of motorists and our workers. Work will be continuous between Monday 4 May and Monday 11 May.

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### **Monday 4 May, Tuesday 5 May and Wednesday 6 May 2020 - night work on Wilberforce Road**

We will complete asphaltting work on Wilberforce Road over two nights between 8pm and 5am, weather permitting.

---

### **Thursday 7 May to Monday 11 May 2020 – continuous day and night work**

Work during the traffic switch will be continuous for 24 hours over four days and nights from 7am Thursday 7 May until 8am Monday 11 May.

---

### **Contingency dates:**

Contingency dates are in place should this work not go ahead due to unforeseen weather or technical issues, however the sequence of the work will be the same as detailed above.

Thursday 14 May to Monday 18 May 2020, weather permitting.

Thursday 21 May to Monday 25 May 2020, weather permitting.

Please check [livetraffic.com](http://livetraffic.com) or Transport NSW website for latest traffic updates regarding these works.

## Contact

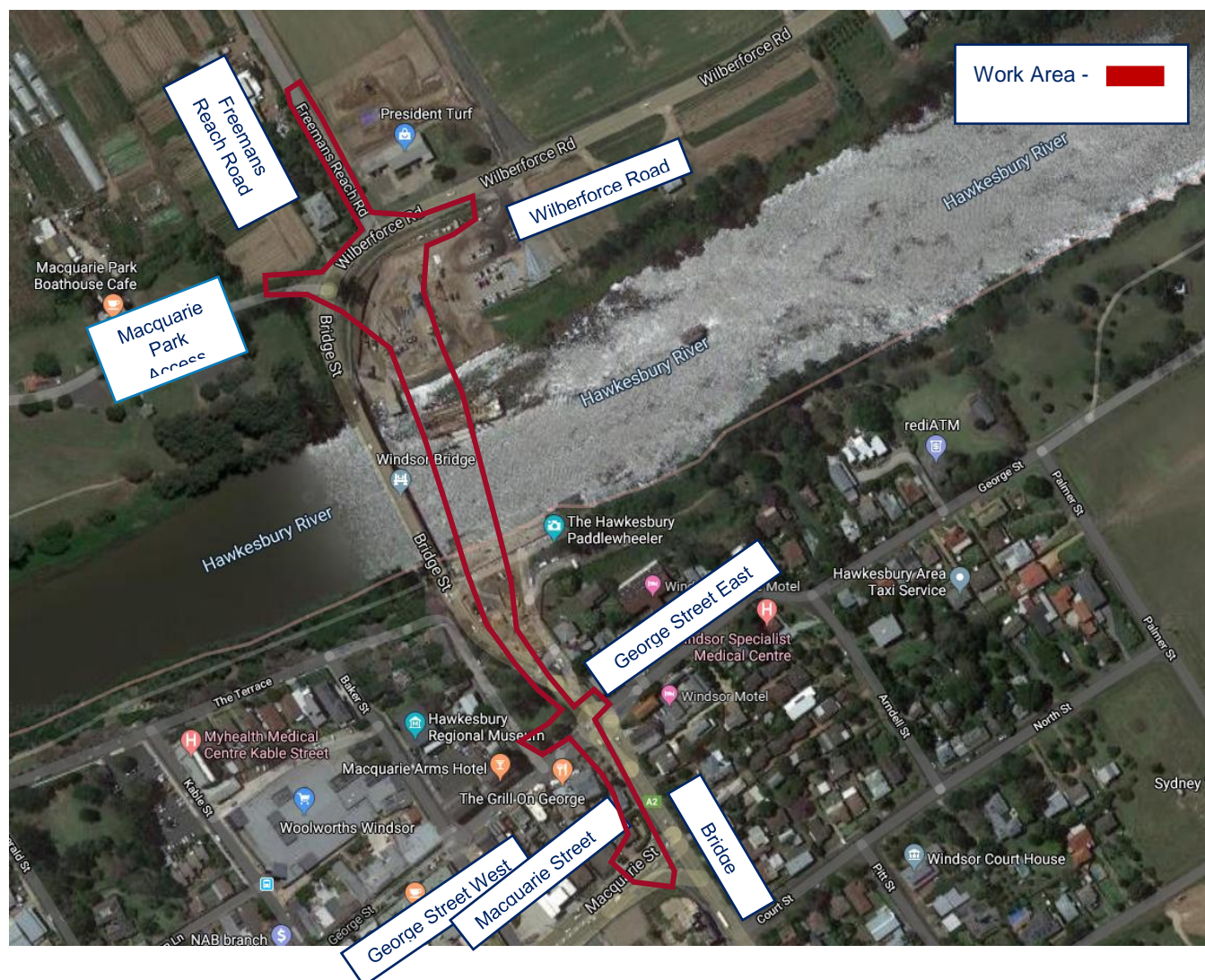
If you have any questions about construction, please contact the Windsor Bridge Project Team on 1800 983 657 during business hours or email [windsorbridge@georgiou.com.au](mailto:windsorbridge@georgiou.com.au)

For more information on the project, visit [rms.nsw.gov.au/windsorbridge](http://rms.nsw.gov.au/windsorbridge).

Thank you for your patience during this important work



## Map of work location



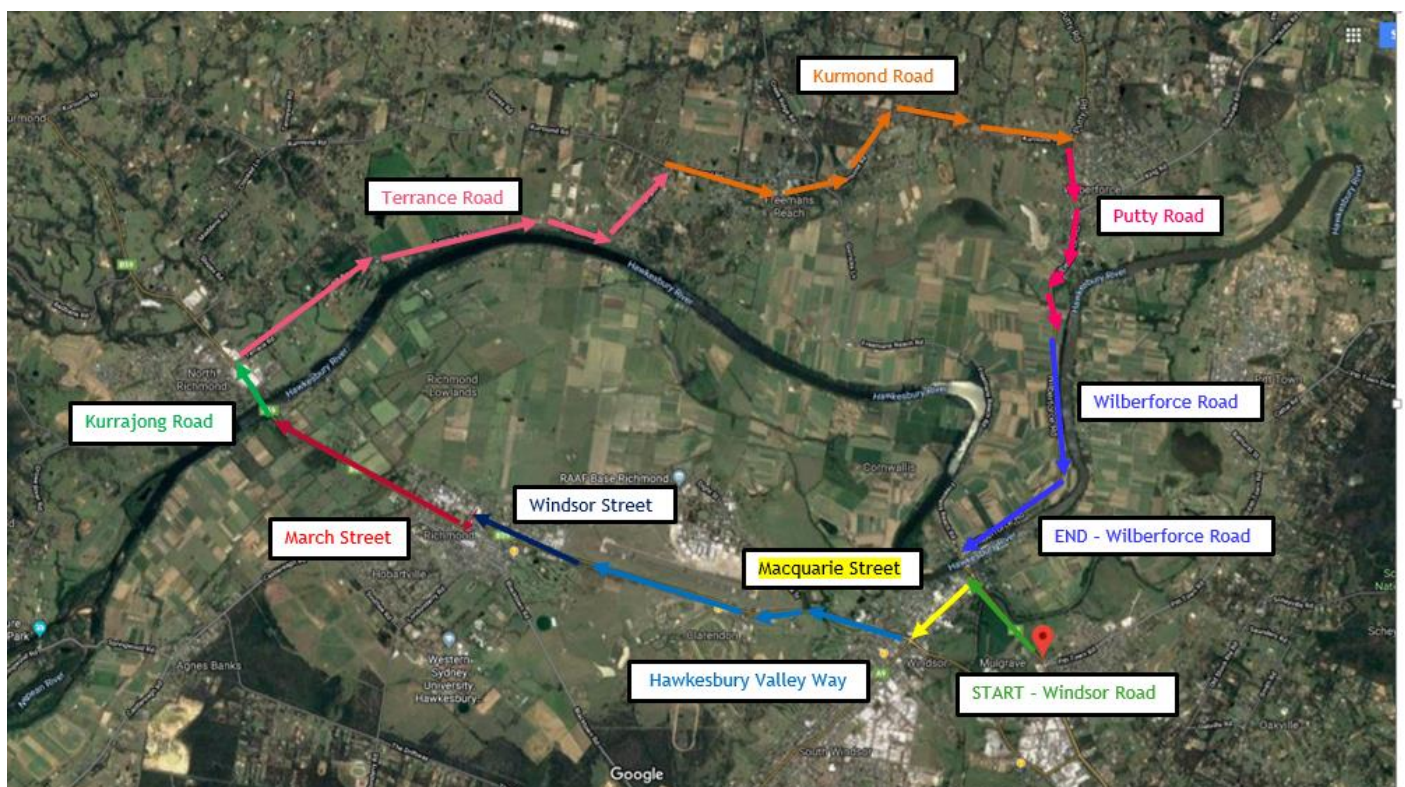
If you need help understanding this information, please contact the Translating and Interpreting Service on 131 450 and ask them to call us on 1800 983 657.



## Detours for George Street East and West closures



## Detour through Richmond during the night closures from 10pm to 8am Friday and Saturday





### 2.3 Request for Contact Calling Card



## We'd like to talk to you

3 April 2020

As a follow up from previous consultation in December 2019, the Windsor Bridge Project Team would like to consult with you regarding upcoming works which will be necessary to switch traffic onto the new bridge.

These works are programmed to commence **Thursday 30<sup>th</sup> of April** and works will continue through the weekend until **Monday the 4<sup>th</sup> of May**. This continuous block of work is necessary in order to open the new bridge. We would also like to advise you of the following contingency dates for the traffic switch (**7 May to 11 May, 14 May to 18 May and 21 May to 25 May 2020**) should the works need to be postponed due to adverse weather. You will receive a formal notification a week prior to the works commencing.

It's important for us to engage with you safely during the COVID -19 pandemic. Normally we would be knocking at your door to discuss the works but we are unable to do so, instead we'd like to hear back from you via an email, call or text should you require further information.

Please call or text Toni on **0468 654 860** or email [toni.ford@georgiou.com.au](mailto:toni.ford@georgiou.com.au) so she can talk to you about what we're doing and what you need to know.

We look forward to hearing from you about this important work



If you need help understanding this information, please contact the Translating and Interpreting Service on 131 450 and ask them to call us on 1800 983 657

## 2.4 Request for Contact Email

Good morning

As a follow up from previous consultation in December 2019, the Windsor Bridge Project Team would like to consult with you regarding upcoming works which will be necessary to switch traffic onto the new bridge.

These works are programmed to commence Thursday 7<sup>th</sup> of May and works will continue through the weekend until Monday the 11<sup>th</sup> of May. This continuous block of work is necessary in order to open the new bridge. We would also like to advise you of the following contingency dates for the traffic switch (7 May to 11 May, 14 May to 18 May and 21 May to 25 May 2020) should the works need to be postponed due to adverse weather. You will receive a formal notification a week prior to the works commencing.

It's important for us to engage with you safely during the COVID -19 pandemic. Normally we would be knocking at your door to discuss the works but we are unable to do so, instead we'd like to hear back from you via an email, call or text should you require further information.

Please call or text Toni on 0468 654 860 or email [toni.ford@georgiou.com.au](mailto:toni.ford@georgiou.com.au) so she can talk to you about what we're doing and what you need to know.

We look forward to hearing from you about this important work

### 3. CONSULTATION DETAILS AND RESULTS

#### 3.1 December 2019 Consultation

The following table details the results of the community consultation conducted in relation to the works.

ID	Address	Catchment	First Visit 11/12/2019 2:45 – 4pm	Second Visit 12/12/2019 11am – 12pm	Third Visit 13/12/2019 10:15 – 10:30am	Alternate Accommodation Offered?
R17	66 George Street	NCA1				YES
R13	41 George Street	NCA2				NO
R12	43 George Street	NCA2				YES
R11	45 George Street	NCA1				YES
Motel	47 George Street					NO
U1	51 George Street	NCA1				YES
R4	53 George Street	NCA1				YES
Motel	54 George Street					NO
U2	50 George Street	NCA1				YES
U3	48 George Street	NCA2				NO
U6	2/52 George Street	NCA2				NO
U4	3/52 George Street	NCA2				YES
R16	1 Thompson Square	NCA1				YES
R16	3 Thompson Square	NCA1				YES
R1	27 Wilberforce Road	NCA1				YES
R3	10 Bridge Street	NCA1				YES
U5	20 Bridge Street	NCA2				NO

#### 3.1.2 December Results

17 properties were visited during the community consultation which included all the residents within NCA1 and NCA2. Of the 17 properties visited, contact was made with 11 residents and all of the residents contacted had no issues with the consecutive works required for the traffic switch. The other 7 properties were not able to be contacted as the resident was not home and a calling card was left or found to be vacant properties.

### 3.2 April 2020 Consultation

The following table details the results of the community consultation conducted in relation to the works.

ID	Address	Catchment	Result of December Consultation	Results of April Consultation
R17	66 George Street	NCA1	[REDACTED]	[REDACTED]
R13	41 George Street	NCA2	[REDACTED]	[REDACTED]
R12	43 George Street	NCA2	[REDACTED]	[REDACTED]
R11	45 George Street	NCA1	[REDACTED]	[REDACTED]
Motel	47 George Street		[REDACTED]	[REDACTED]
U1	51 George Street	NCA1	[REDACTED]	[REDACTED]
R4	53 George Street	NCA1	[REDACTED]	[REDACTED]
Motel	54 George Street		[REDACTED]	[REDACTED]
U2	50 George Street	NCA1	[REDACTED]	[REDACTED]
U3	48 George Street	NCA2	[REDACTED]	[REDACTED]
U6	2/52 George Street	NCA2	[REDACTED]	[REDACTED]
U4	3/52 George Street	NCA2	[REDACTED]	[REDACTED]
R16	1 Thompson Square	NCA1	[REDACTED]	[REDACTED]
R16	3 Thompson Square	NCA1	[REDACTED]	[REDACTED]
R1	27 Wilberforce Road	NCA1	[REDACTED]	[REDACTED]
R3	10 Bridge Street	NCA1	[REDACTED]	[REDACTED]
U5	20 Bridge Street	NCA2	[REDACTED]	[REDACTED]

#### 3.2.2 April Results

17 properties were contacted for follow up consultation regarding the date change and contingency dates. Given the current COVID-19 pandemic, this consultation was conducted through non-contact methods such as phone, email and/or text. Of the 17 properties, responses were received from 9 residents. None of the respondents had any issues with the dates required for the traffic switch. One property remains vacant, and the remaining 7 properties were contacted by calling card, phone call, email and/or text and asked to contact the project.