

16 January 2020

Erica van den Honert
Director, Infrastructure Management
GPO Box 39
320 Pitt Street
SYDNEY NSW 2000

Dear Erica,

**RE: CSSI 8285 – Parramatta Light Rail Stage 1, Package 2, Out of Hours Works Application
PLR-HRW-OOHW-03**

I refer to your letter dated 6 November 2019 regarding approval of high risk Out of Hours Works activities (SSI 8285). In this letter the TfNSW Out of Hours Works Application Ref: PLR-HRW-OOHW-03 (OOHW Application) was approved for watermain connection works on Hawkesbury Road, Westmead over 10 shifts, between 6 November 2019 and 13 January 2020.

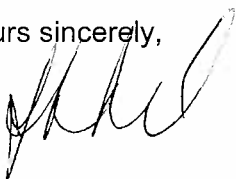
As a result of circumstances outside of TfNSW's control, it was not possible to complete all watermain connections in the approved timeframe. Given that DPIE has approved the OOHW Application, TfNSW requests an extension of the approved timeframe to 29 February 2020. There is no necessity to increase the number of shifts previously approved. All works to be completed are as described in the approved OOHW Application.

Therefore, I submit for your consideration:

- Out-of-Hours Works Application ref: PLR-HRW-OOHW-03
- Endorsement from PLR AA dated 10 December 2019
- Endorsement from PLR ER dated 16 December 2019
- Supporting information regarding the need to reschedule works.

For further enquiries regarding this matter please contact Megan Haberley, Senior Manager, Environment by phone on 0488 442 284 or via email megan.haberley@transport.nsw.gov.au. Thank you.

Yours sincerely,



Tracy Reid
A/Associate Director Environmental Management
Transport for NSW

Cc: Annabelle Tungol (ER), Beau Weyers (AA), Andrew Milne (TfNSW), Megan Haberley (TfNSW)

Attachments: Out-of-Hours Works Application ref: PLR-HRW-OOHW-03
PLR AA Endorsement
PLR ER Endorsement
Supporting information

Transport for NSW

130 George Street, Parramatta NSW 2150 | Locked Bag 5085, Parramatta NSW 2124
W transport.nsw.gov.au | ABN 18 804 239 602

PLR Out-Of-Hours Work Protocol Form

(Environment Protection License Variation NOT Required)

This form should be read and completed in conjunction with Out-of-Hours Work Protocol (PLR-TFNSW-CBD-PE-FRM-000002)

No: PLR-HRW-OOHW-03-RevD (Sydney Water Main Live Connection)			
ENSURE APPROPRIATE TIMEFRAME FOR APPLICATION AND ALL SUPPORTING INFORMATION THAT IS TO BE SUBMITTED TO THE APPROVING AUTHORITY BEFORE THE PLANNED DATES OF OUT-OF-HOURS WORK (OOHW). TFNSW REQUIRE A 10 DAY REVIEW PRIOR TO THE SUBMISSION TO THE APPROVING AUTHORITY.			
Application Date: 30.10.19	Contractor: Ford Civil Contracting Pty Ltd	Project: Hawkesbury Road Widening	
A. Contact details			
	Name	Mobile number	Email
Contractor's Representative	Danny Khal	0409 212 374	dannyk@fordcivil.com.au
Contractor's 24 hour contact person	Jackson Lord	0400 329 466	Jackson.Lord@fordcivil.com.au
TfNSW Project Manager	Quinton Jubb	0420 300 120	Quinton.Jubb2@transport.nsw.gov.au
TfNSW Environment & Planning Manager	Anna Butler	0437 647 883	anna.butler@transport.nsw.gov.au
TfNSW Public Affairs Manager/Officer	Juliana Stackpool	0400 059 982	Juliana.Stackpool@transport.nsw.gov.au
B. Justification for OOHW			
List any environmental / community benefits of OOHW (if any)	Live connections of water main require the existing main to be shut off, as such Sydney Water will only provide access to the mains when water usage is minimal. Night works are required to complete works to minimize service disruptions to customers and stakeholders.		
	Consideration of OOHW in accordance with Condition E29	☐ (a) Carrying out works that during standard hours would result in a high risk to construction personnel or public safety, based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009 "Risk Management" ☐ (b) The relevant road authority has advised the Proponent in writing that carrying out the works and activities during standard hours would result in a high risk to road network operational performance and a road occupancy licence will not be issued ☒ (c) The relevant utility service operator has advised the Proponent in writing that carrying out the works and activities during standard hours would result in a high risk to the operation and integrity of the utility network ☐ (d) Where the TfNSW Transport Management Centre (or other road authority) has advised the Proponent in writing that a road occupancy licence is required and will not be issued for the works or activities during the hours specified in Condition E21 and Condition E22 ☐ (e) Where Sydney Trains (or other rail authority) has advised the Proponent in writing that a Rail Possession is required.	
	Location	Hawkesbury Road. Westmead. NSW. 2145	

C. Details of work ☐ Map attached (showing location / work extent / nearest sensitive receivers / landscape)	Description of works	The Water Main connection will be staged over 3 separate connections due to flow management requirements by Sydney Water. At any time during the connection, one of the water mains must be live to maintain supply to stakeholders as required. Refer to the attached diagrams in Appendix B, which illustrate the work areas required for each staged connection. Pavement cutting, pavement removal, potholing and excavation of water main will be conducted during standard construction hours. This will be done to minimize the amount of highly noise intensive works (HNIW) during OOHW Period 1 and 2. Typically, the live water mains is only allowed to be isolated during low usage hours (i.e after 9pm) to minimize disruptions to customers by Sydney Water. However, approval for 7pm to 7am OOHW is sought in case the timing of these works are allowed earlier than 9pm by Sydney Water. The following HNIW works can only be conducted after the isolation of the live water main: • Use of rock breaker and jackhammer for demolish concrete thrust blocks (encasement) over the existing isolated water main. • Saw cutting of existing water main pipe (Note: This is a different activity as the above mentioned <u>saw cutting for pavement</u> which is conducted during standard construction hours) • Connect new water main to existing water main Works at each connection point for HNIW during OOHW will be undertaken during a period of approximately 3 hours for each night (including reinstatement of asphalt). Nonetheless, these activities will be prioritized during OOH Period 1 to minimize extended use during OOH Period 2 as much as possible. This will minimize the amount of highly noise intensive works during OOH Period 2. A detailed methodology can be found in Section 4.1 of Appendix D within the Noise & Vibration Impact Assessment which includes, the methodology for road reinstatement following the live connection. It is anticipated that up to two crews will be operating concurrently at two locations. The majority of the highly noise intensive works will be scheduled during the evening and early hours of the night as much as possible depending on Sydney Water. The above methodology applies to all stages as the works being undertaken in each stage are identical. <u>The only variable between each stage is the location and date of the connection pending Sydney Water flow management approval.</u> OOHW (approx. 7pm to 7am, to be determined by Sydney Water) • Live connection of new water main section to the existing water main
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No: PLR-HRW-OOHW-03-RevD (Sydney Water Main Live Connection)

- Backfill with stabilized sand and reinstate road or footpath with asphalt.

Note: The timing of the OOHW above is also dependent on Sydney Water's own independent flow management assessment. We will provide confirmation of dates when further information is available from Sydney Water to TfNSW and DPIE.

Use of Mons Road Stockpile Compound

The Mons Road compound is proposed to use as temporary stockpile location. An excavator will be used to load pipes and other construction materials onto trucks to be taken to Hawkesbury Road. Vibration intensive work is not proposed within the Mons Road compound. Mitigations include stockpiling as much material as possible near the work areas on Hawkesbury Road to minimize trips to the Mons Road compound.

No: PLR-HRW-OOHW-03-RevD (Sydney Water Main Live Connection)

	Proposed dates	The three connection stages are dependent on Sydney Water approval and availability to undertake the works. The length of the connection (number of nights), will also be governed by the flow management approved by Sydney Water. Refer to the below indicative program for the works pending Sydney Water confirmation: Stage 1 Connection: To commence between Late October to Late November Stage 2 Connection: To commence between Late October to Late November Stage 3 Connection: To commence Mid-January. Please note that the dates are tentative at this moment. We will provide confirmation of dates when further information is available from Sydney Water to TfNSW and DPIE. Anticipated Dates Only (TBD by Sydney Water) Stage 1 Connection: Over three non-consecutive nights within a week window commencing 21st October 2019 Stage 2 Connection: Over one or two night within a week window commencing 28th October 2019 Stage 3 Connection: Over one night within a week window commencing 13th January 2020 <u>Contingency</u> Approval for an additional four days of contingency is also sought in case of latent site conditions and unforeseen events. In the case that contingency is required, the works can be scheduled with Sydney Water to meet the following: • That highly noise intensive works are only carried out for no more than two consecutive nights, followed by a period of no noisy works and if required, the Contractor will come back at a later time. • That the works are carried out for only four nights in a seven day period. Ford Civil after discussions with the Sydney Water Co-coordinator anticipates that the scope of works can be complete over 6 nights (excluded 4 nights contingency).
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No: PLR-HRW-OOHW-03-RevD (Sydney Water Main Live Connection)

	Proposed timings	<u>EVENING and NIGHT SHIFTS</u> Monday to Friday: 7pm to 7am Approval for this time period is conservative in case Sydney Water provides early isolation. Approximately 3 hours of HNIW is expected as soon as isolation is permitted, for which, Secretary approval is sought in the instance that the timing of 3 hour block of HNIW is during OOHW Period 2.
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IMPACT ASSESSMENT		Reference table			
D. Timings Identify time period when each item of plant is to be used, from reference table on right. Tick which plant to be used in Section E. below and record whether to be used in Period 1 or Period 2, or both. Note Period 1 and 2 refer back to Table 2-1 of out-of-hours work protocol. Acoustic assessment of OOHW required if Period 2 used. Note Condition E23 for specific locations in Camellia and Rosehill and Carlingford Precincts. For risk factors refer to Section 5 of out-of-hours work protocol.		Standard hours	Period 1	Period 2	
	Weekdays	No OOHW application required	1900-2200 (Eat Street) (1800-2200)	2200-0700 overnight	
	Saturdays		18:00-22:00 (Eat Street) (1200-2200)	2200-0800 overnight	
	Sundays and public holidays		0800-1800	1800-0700 overnight	
E. Plant required & level of risk <i>e.g. Generator to be used between 2300 and 0200 on a weekday is Period 2 and acoustic assessment is required</i> Refer to Appendix C of TfNSW CNVS or TfNSW Construction Noise Estimation Tool (9TP-FT-150) for additional plant					
	Plant (SPL, at 7m LAeq15 min)	Period	Plant (SPL, at 7m LAeq15 min)	Period	
☒ Rock breaker (97dBA)	1&2	☒ Sucker Truck/ Road Sweeper (84dBA)	1		
☐ Dump truck (85dBA)		☐ Truck and dog (30 tonne) (83dBA)			
☐ Front end loader (87dBA)		☐ Medium rigid truck (20 tonne) (78dBA)			
☒ Excavator – 8 tonne (90dBA)	1&2	☐ Elevated work platform (77dBA)			
☐ Vibratory roller (84dBA)		☒ Concrete saw/corer (93dBA)	1&2		
☐ Water cart (82dBA)		☐ Concrete vibrator (88dBA)			
☒ Jackhammer (88dBA)	1&2	☐ Generator – diesel/petrol (78dBA)			
☐ D10 Bulldozer (96dBA)		☐ Compressor (84dBA)			
☐ Crane (franna) (73dBA)		☐ Backhoe (86dBA)			
☒ Concrete truck (84dBA)	2	☒ Daymaker (73dBA)	1&2		

☐ Piling rig impact (109dBA)		☒ Asphalt – truck and sprayer (81dBA)	1&2
☐ Piling rig bored (87 dBA)		☒ Power tool	1&2
☐ Compactor (81dBA)		☐ Others – impact wrenches etc	
☐ Tub Grinder/Mulcher (91dBA)		☒ Tipper Truck 2t-4t (78dBA)	1&2
☒ Welder (85dBA)	1&2	☒ 2t roller (82dBA)	1&2
☐ Concrete pump (84dBA)		☒ Small plate compactor (81dBA)	1&2

F. Distance to nearest sensitive noise receiver(s)	Distances to nearest sensitive noise receiver(s)			
	Sensitive Receiver	Distance	Sensitive Receiver	Distance
	☐ Place of Worship		☐ Educational institution (including child care centres)	
	☒ Nearest Residential Receivers	15m	☐ Distances and receivers to be identified in the ECM	
	☒ Noise and Vibration sensitive business and critical working area (such as theatres, laboratories, operating theatres, mental health services, animal welfare facilities and accommodation).			5m (WIMR, CMRI)
	<i>Where one of the above has been checked, noise generating works must not be timetabled within sensitive periods, unless otherwise agreed with the affected institutions. This must be determined through ongoing consultation with the community in accordance with Community Consultation Strategy.</i>			
Has the sensitive receiver agreed for these works or are there any preference for alternative hours and/or duration (refer to E31). Attach any of the outcomes from this consultation ☒ Yes See attached Appendix C: Community Consultation Report ☐ No				
G. Nature of landscape / nature of any barriers or shielding between source & sensitive receiver	The works will be undertaken along Hawkesbury Rd between Queens St and Jessie Street as per the attached indicative diagrams in Appendix B and D. Works will be situated behind barriers with localized shielding via noise mats.			

H. Details of alternatives & how investigated. Details of any consultation carried out.	A meeting was scheduled with Sydney Water to discuss the details and requirements for the watermain connections. FCC requested that the isolation of the watermain (i.e commencement of the works), could be scheduled earlier in the night to reduce the noise created in period 2 OOHW. Sydney Water feedback is that works will be restricted to night works (during low-demand period). Refer to Appendix A. However, approval for 7pm to 7am OOHW is sought in case the timing of these works are allowed earlier than 9pm as previously indicated. FCC will reiterate in their application to Sydney Water to allow for an earlier start time as far as practicable.
I. Noise Assessment of activities and work covered in this form <i>Contractor must provide evidence of consultation in accordance with A5.</i>	☐ E25(a)&(c) Activities and works required for one or more of the following: - For the delivery of materials required by the NSW Police Force or other authority for safety reasons - Where different hours of works are permitted or required under an EPL in force in respect of the CSSI ☐ Approval not required unless activities are highly noise intensive work ☐ E 25(e) Activities and works causes LAeq(15 minute) noise levels: - i No more than 5 dBA above the rating background level at any residence in accordance with the <i>Interim Construction Noise Guideline</i> (DECC, 2009) - ii No more than the 'Noise affected' noise management levels specified in Table 3 of the <i>Interim Construction Noise Guideline</i> (DECC, 2009) at other sensitive land uses - iii No more than 15dBA above the night-time rating background level at any residence during the night time period, when measured using the LA1 (1 minute) noise descriptor - iv Continuous or impulsive vibration values, measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.2 of <i>Assessing Vibration: a technical guideline</i> (DEC, 2006) - v Intermittent vibration values measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.4 of <i>Assessing Vibration: a technical guideline</i> (DEC, 2006). ☐ Approval not required unless activities are highly noise intensive work ☐ E23 Activities and works cause noise emissions that are <5dBA above background noise level from 10pm to 7am and are located in the Camellia and Rosehill precinct (east of James Ruse Drive) and the Carlingford precinct (from Parramatta River to Victoria Road) ☐ Approval not required ☐ Community notification required ☐ E28 Activities and works are outside standard hours and are low to medium risk (refer to out-of-hours protocol for identifying risk factor). ☐ Approval from ER/ AA and community consultation (E39) required. ☒ E28 Activities and works are outside standard hours and are high risk (refer to out-of-hours protocol for identifying risk factor). ☒ Approval from Secretary and community consultation (E39) required.

	☐ E24&E28 Activities and works are occurring in 'Eat Street' outside the standard hours. ☐ Approval required and Business Reference Group (E110) required to be consulted as well as community consultation (E39). Consultants' acoustic assessment attached? ☒ Yes ☐ No		
J. Contractor's community notification strategy <i>Contractor must provide minimum 7 days notice of works in accordance with the Community Consultation Strategy.</i>	A schedule of likely out-of-hours work for a period of no less than two months for medium to high risk work went out on 08/07/19 with a brief overview of the area the out-of-hours work is happening. A door-knock was carried out by a member of the Communications Team and informed residents of the planned works on 14/08/19. This community consultation will be repeated every 3 months in accordance with E39. Repeated attempts will be made to contact the resident face-to-face in cases where they are not at home in the first instance. A "Sorry we missed you card" was also left for such instances. This card typically includes a brief overview of the works as well as provide the community information line to discuss their preferences for works hours with the team. A letter drop is to be completed at least 7 days prior to works being undertaken to impacted stakeholders. This will include more detail of the works. An additional door knock will be conducted closer to commencement of OOHW specifically to inform the residents of the balance between water disruption and potential noise impacts. Ford Civil also has an ongoing fortnightly meeting with sensitive receivers from WIMR, CMRI, KRI etc. This session enables all Contractors working in the Westmead Redevelopment to coordinate disruptions to the researchers as well as give as much notice as possible for any disruptive works to the smooth operations of the respective facilities. A letter has also since been issued to Ford Civil to request utilities information and impact of utilities cutovers from stakeholders from Westmead Campus (Adults Hospital, Westmead Institute of Medical Research, Children's Medical Research Institute and Children's Hospital at Westmead). This is being circulated with relevant utilities authorities to determine the extent of impacts of the cutovers. Find section 6.8 of attached Appendix C: Community Consultation Report		
K. Associated impacts of proposed OOHW	<table border="0"> <tr> <td data-bbox="448 1435 927 1718"> ☐ Dust e.g. heavy trucks; soil clearance ☒ Traffic e.g. deliveries, lane closures ☐ Pedestrian access e.g. pavements closed ☒ Vibration e.g. rollers, damage to heritage properties ☐ Adjacent construction works ☐ Property access </td><td data-bbox="927 1435 1401 1718"> ☐ Public transport e.g. schedule changes ☒ Lighting e.g. floodlit residential areas ☐ Parking e.g. closure of spaces ☒ Impulsive vibration or noise ☐ Continuous vibration or noise ☐ Tonal vibration or noise ☒ Highly noise intensive work (defined by CoA) ☐ Others (specify) </td></tr> </table>	☐ Dust e.g. heavy trucks; soil clearance ☒ Traffic e.g. deliveries, lane closures ☐ Pedestrian access e.g. pavements closed ☒ Vibration e.g. rollers, damage to heritage properties ☐ Adjacent construction works ☐ Property access	☐ Public transport e.g. schedule changes ☒ Lighting e.g. floodlit residential areas ☐ Parking e.g. closure of spaces ☒ Impulsive vibration or noise ☐ Continuous vibration or noise ☐ Tonal vibration or noise ☒ Highly noise intensive work (defined by CoA) ☐ Others (specify)
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L. Mitigation measures <i>E.g. noisy works moved to standard hours or 'low risk' hours; silencing; consultation.</i> <i>Refer to CEMP, Condition E30, E33 and E39.</i>	Mitigation measures have been identified in accordance with Tables 4-7 of TfNSW Construction Noise and Vibration Strategy and Noise and Vibration assessment (Appendix D) including, but not limited to those described below. In accordance with the Communication Consultation Strategy, consultation with the community has informed the following mitigation measures: FCC will implement the following mitigations to reduce impact on all stakeholders: ○ Methodology has been established to complete as much as possible of construction activities during standard hours where possible to minimize work conducted during OOHW (for example but not limited to; use temporary trench plates during OOHW and undertake full reinstatement activities during standard hours) while highly noise intensive work that need to be conducted outside standard hours will be scheduled during the evening and early hours of the night as much as possible to minimize noise and vibration impacts and sleep disturbance. ○ Installation of noise mats on the fencing barriers around connection point areas of work will be implemented to all connection point areas of work to shield residents and hospital from construction activities. ○ Pavements to be saw-cut and removed during the day shifts to reduce noise during OOH. ○ Activities such as rock breaking or jack hammering of concrete thrust blocks around live Sydney Water Main will be prioritized and completed during early evening/night as possible to minimize impacts to sensitive receivers as soon as existing water mains are isolated. ○ Community consultation to be undertaken – letter notifications, door knocks and correspondence to the hospital stakeholders. ○ Best behavioural practice will be implemented (such as no swearing, no unnecessary shouting, and no dropping of materials from heights.) ○ Use of non-tonal reversing beepers ○ Turn off equipment and vehicles when not in use ○ Directing noise away from residents and businesses where it is possible to do so ○ Provide respite periods in the form of 1 hour break between continuous blocks of 3 working hours. ○ Ensuring that works are only conducted 4 nights in any 7 day period (if contingency works are required) ○ The Contractor will coordinate with Sydney Water to ensure highly noise intensive works are not conducted for more than two consecutive nights and that if contingency is required, works will be conducted in a way to come back a few nights afterwards. ○ Schedule highly noise intensive works during evening and early hours of the night as much as practical and permissible by Sydney Water ○ Vibration and Noise monitors are set up at WMIR and CMRI with a protocol in place to stop work and assess if noise and vibration criteria are exceeded. ○ While alternative accommodation is not considered to be warranted, the project management team will closely monitor feedback from community during the first night of works and provide alternative accommodation if required
M. Evidence of Consultation with AA	Consultation with acoustic advisor attached? ☒ Yes See Appendix D ☐ No

N. Evidence of Consultation with community (in accordance with Community Consultation Strategy and E24 or E39)	Have these works been included in the consultation schedule circulated every 3 months for work? ☒ Yes ☐ No Does the community have any preference for alternative hours and/or duration? Attach any of the outcomes from the community consultation ☒ Yes See attached Appendix C: Community Consultation Report ☐ No Have the proposed construction works factored in respite periods? ☒ Yes ☐ No ☐ N/A Comment: Has the community notification also been sent to DPE? ☒ Yes ☐ No ☐ N/A Comment: Attach details to this form		
<table border="1"> <tr> <td data-bbox="193 831 951 994"> Contractor signature:  Lawrence Saliba </td> <td data-bbox="956 831 1401 994"> Date: 04.10.19 </td> </tr> </table>		Contractor signature:  Lawrence Saliba	Date: 04.10.19
Contractor signature:  Lawrence Saliba	Date: 04.10.19		

O. TfNSW Communications Team	<i>Comments on application (include comment on community)</i> ☐ Community notification required by Contractor? ☐ Application on Register?
P. Environmental Management Representative <i>For OOHW, make recommendation for approval by ER/AA or Secretary as applicable.</i>	☐ OOHW recommendation of approved / endorsed (<i>delete as appropriate</i>) ☐ OOHW recommendation of approved with conditions (<i>see below</i>) ☐ OOHW rejected EMR recommendation for conditions of approval for OOHW / comments <i>Attach additional letter/comments if required</i>

Q. Environment Representative / Acoustics Advisor <i>For OOHW with high risk factors, make recommendation for approval by Secretary</i>	☐ OOHW approved / endorsed (<i>delete as appropriate</i>) ☐ OOHW approved with conditions (<i>see below</i>) ☐ OOHW rejected
R. Approval to conduct OOHW <i>For OOHW with low and medium risk factors, Approval may be granted by the ER/AA;</i> <i>For OOHW with high risk factors approval by Secretary is required.</i>	Assessment of Risk Factors: ☐ Low ☐ Medium ☐ High (refer to out-of-hour work protocol for example of risk factors) Approved by (strike out as applicable): ER with AA Secretary Signature _____ Date _____

Appendix A: Justification of Out-of-Hours Work

Danny.Khal

Subject: FW: [#35/25218/001] Sydney Water Connections

From: RESTREPO, MARYURY <MARYURY.RESTREPO@sydneywater.com.au>

Sent: Tuesday, 20 August 2019 8:28 AM

To: 'Bill Berridge' <Bill.Berridge@rari.com.au>

Cc: NGUYEN, JASON <JASON.NGUYEN@sydneywater.com.au>; Danny.Khal <Danny.Khal@fordcivil.com.au>

Subject: RE: [#35/25218/001] Sydney Water Connections

Dear all,

It is an operational requirement of Sydney Water that all works conducted on our assets, including potable water, wastewater, recycled water and stormwater assets, be conducted in such a way that minimizes customer impact and risks to public health and safety, both as a result of cessation of supply/service and disruption due to construction activities.

In the case of works on potable water assets of sizes greater than DN250, the scope of works required is assessed on an individual basis. This assessment will determine the aforementioned customer impact and any planning restrictions required for its mitigation, and also to ensure that, where practicable, supply is not cut during times of peak demand and for periods of longer than 5 hours.

Specifically for CN169169PW, in order to minimize system risks, this has been restricted to night works (during the low-demand period) due to the following:

- Over 700 properties will be affected, including Westmead Hospital
- The scope of the works requires a minimum 8 hour outage

Thanks and regards

Maryury Restrepo

Program Coordinator, Operational Services

Customer Delivery

Sydney Water, Main Building Level 1, William Holmes Street, Potts Hill NSW 2143

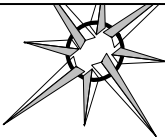
Mob 0437 157 586

Ph 02 9644 0687

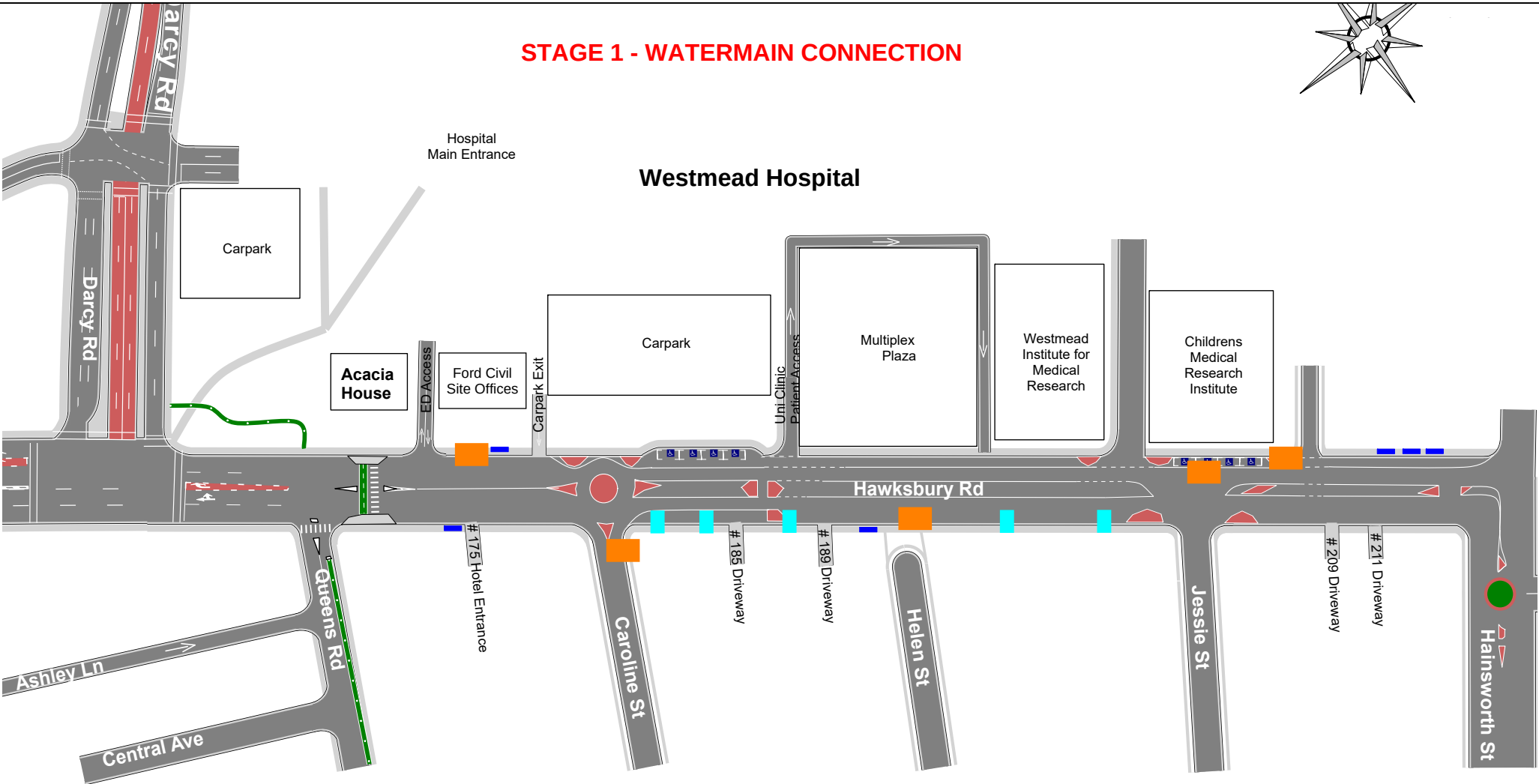
maryury.restrepo@sydneywater.com.au

Appendix B: Construction Staging

STAGE 1 - WATERMAIN CONNECTION



Westmead Hospital

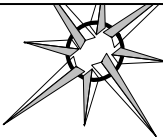


LEGEND

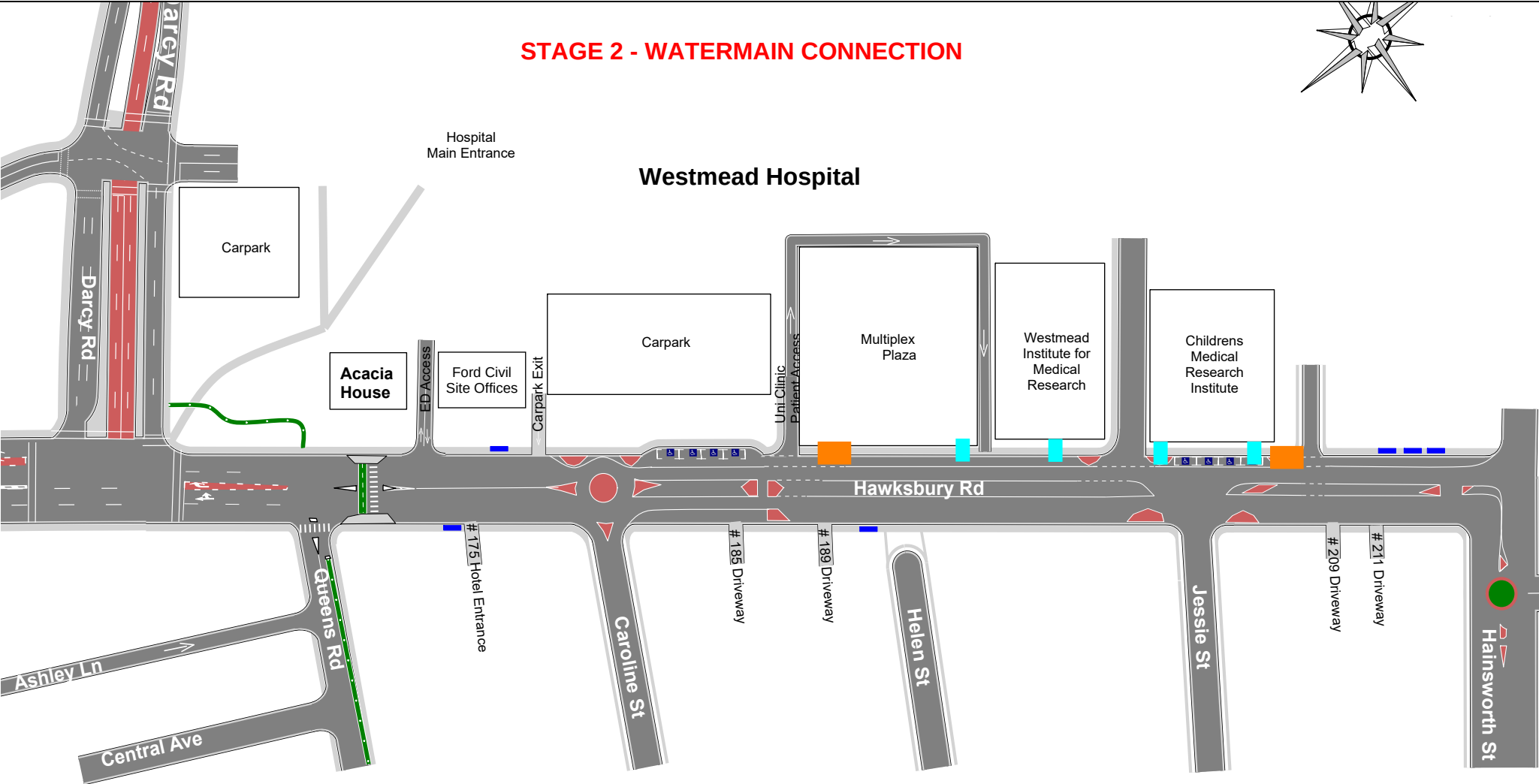
Orange square Main Connection Points

Cyan square Minor Connection Points

STAGE 2 - WATERMAIN CONNECTION



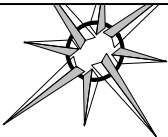
Westmead Hospital



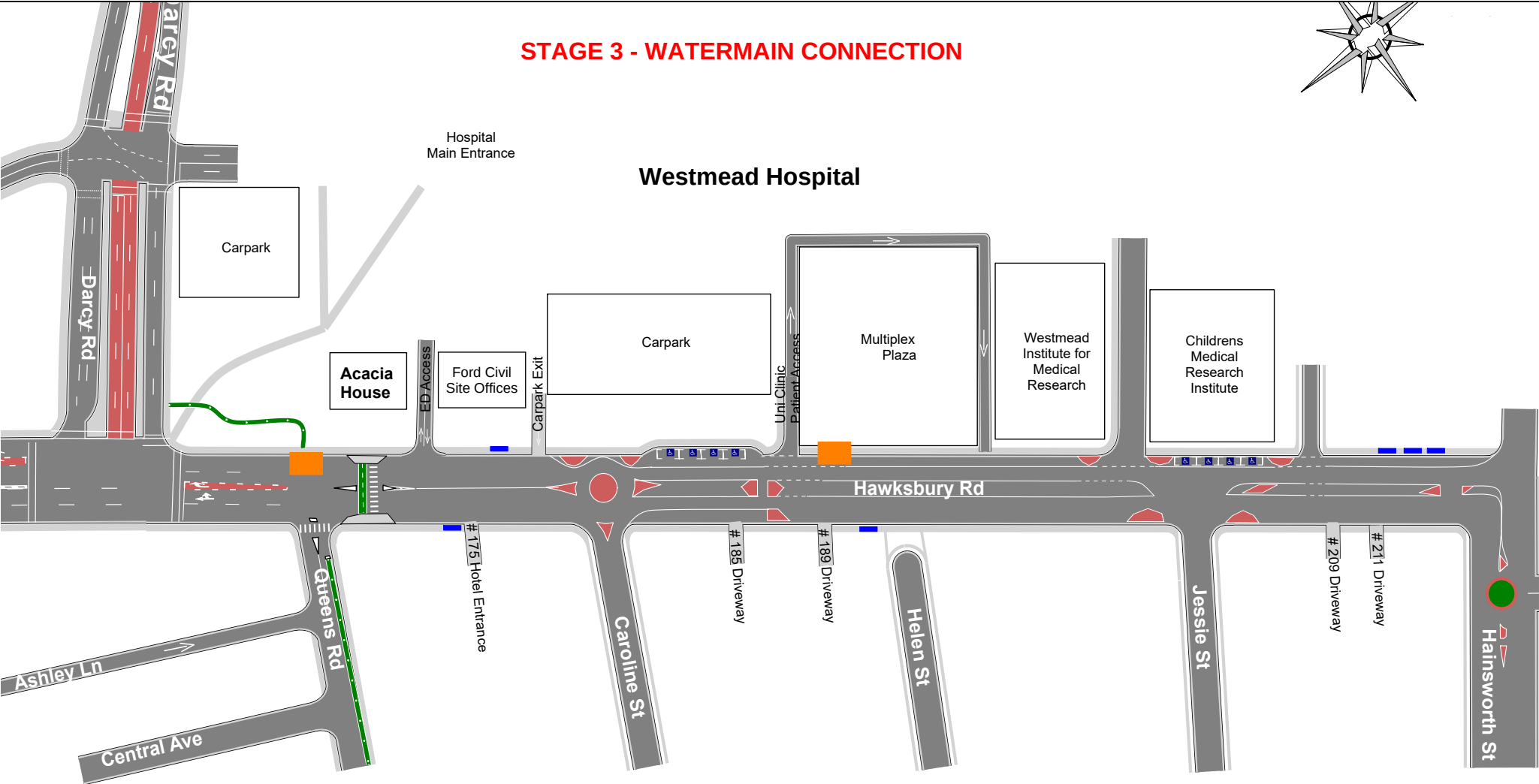
LEGEND

- Orange square: Main Connection Points
- Cyan square: Minor Connection Points

STAGE 3 - WATERMAIN CONNECTION



Westmead Hospital



LEGEND

- Orange square: Main Connection Points
- Cyan square: Minor Connection Points

Appendix C: Community Consultation



Phone: 9597 4122

Fax No: 9597 4966

FORD CIVIL CONTRACTING PTY. LIMITED

ABN 24 002 542 814

9 HATTERSLEY STREET, ARNCLIFFE 2205

BOX 26, P.O. ARNCLIFFE, 2205

Executive Summary

Hawkesbury Road between Darcy Road and Jessie Street, Westmead, is being widened in preparation for the construction and operation of Parramatta Light Rail.

Ford Civil has been engaged to widen Hawkesbury Road and has conducted an out-of-hours work consultation for work to be conducted in late September and October. In September this work will involve night work (approx. 15 nights) to relocate utilities under the road at the corner of Darcy Road and Hawkesbury Road and weekend work (two weekends) at the pedestrian crossing near the corner of Hawkesbury Road and Queens Road.

Out-of-hours (night) work is also planned in October to install a new water main between Queens Road and Jessie Street in October 2019. This work will involve some disruption to water supply and Sydney Water will also communicate directly with residents about service interruptions and times for this work to be completed.

Construction activities will include:

- excavation work
- removal of spoil
- relocation of utilities
- live connection of new water main
- reinstating the road and footpath surfaces for safe access

Out-of-hours work is preferred to complete these works because it will limit disruption to:

- local traffic
- access to the emergency departments at Westmead Hospital and the Children's Hospital at Westmead
- water supply to local residents
- bus services

The Department of Planning's E39 Condition of Approval requires that the community be provided with two months' notice of medium-high risk out-of-hours work. The E135 condition requires us to minimise service disruption to customers and advise the community before any planned disruption to services.

Ford Civil has complied with E39 and E135 requirements by:

- **Informing** – we delivered notifications to 1,715 letterboxes on 8 July 2019 (September utility relocations at Darcy and Queens Roads) and 15 August 2019 (October water main installation) providing the community with two months' notice of work hours scheduled and impacts in the area
- **Consulting** – we door knocked 449 properties in the adjacent community on 14 August 2019 to discuss work hours and preferences, potential impacts including to services, gain feedback and capture stakeholder preferences. We door knocked an additional 50 residents located in Mons Road given we will be storing spoil in a compound on Mons

Road during water main works in October. We captured 45 responses to stakeholder interviews

- **Involving** – where there was no answer or access to properties, we distributed leave behind flyers at residential and commercial properties inviting people to seek further information and have their concerns considered.

Out of 10 businesses surveyed, eight indicated that they would prefer **night work** and two were indifferent - stating that it would not make any difference to their businesses.

Of the 35 residents surveyed 20 expressed no preference for day or night work, 12 preferred night work and three preferred day work. Both businesses and residents commented that scheduling our work to minimise disruption in access to the emergency departments at Westmead and the Children's Hospital was an important consideration to them.

The project has received no comments from residents expressing concerns or preferred work hours in response to leave behind flyers or notifications distributed on 8 July 2019 and 15 August 2019.

Key points raised by businesses and residents included:

- Work hours
- Business operations
- Traffic
- Impacts on access – particularly to hospitals
- Parking

Following consultation and a review of stakeholder comments, it is evident that out-of-hours work to relocate utilities and install a new water main on Hawkesbury Road will align with stakeholder preferences and minimise impacts on local traffic, residents' water supply, and access to hospitals.

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1. Introduction

1.1. Background

Parramatta Light Rail is one of the NSW Government's latest major infrastructure projects being delivered to serve a growing Sydney. Light rail will create new communities, connect great places and help both locals and visitors move around and explore what Western Sydney has to offer.

Work to widen Hawkesbury Road to allow for the construction and operation of Parramatta Light Rail started in Westmead in July and will be completed June 2020. Ford Civil has been contracted to complete this project.

1.2. Westmead community

Westmead is one of the most important health precincts in Australia and is on the doorstep of Parramatta which is rapidly growing to become Sydney's second CBD. The area contains three hospitals, several nationally significant research and education facilities, a range of health care providers, other local businesses and residential properties.

Area	Commercial properties	Residential properties	Educational institution
Westmead Precinct	4 commercial buildings with medical rooms, office suites, cafes and restaurants	449 residences along Hawkesbury Road and adjacent streets (Hainsworth, Jessie, Caroline, Helen, Queens and Ashley) 50 residents on Mons Road	Western Sydney University – Westmead Precinct

Most businesses in the area trade Monday to Friday until approximately 5pm, with only a few trading on the weekend and outside business hours e.g. the Westmead Tavern.

Local residential property is mainly medium-high density apartments and townhouses. The local community is highly culturally diverse with a vibrant and growing Indian community choosing to reside in the area.

1.3. Our proposal

Our proposal involves using night work (approx. 15 nights) to relocate utilities under the road at the corner of Darcy Road and Hawkesbury Road and weekend work (over two weekends) at the pedestrian crossing near the corner of Hawkesbury Road and Queens Road.

Out-of-hours (night) work is also planned to install a new water main between Queens Road and Jessie Street in October 2019. This work will involve some disruption to some residents' water supply.

Out-of-hours work is preferred to relocate these utilities in order to limit disruption to:

- the emergency departments at Westmead Hospital and the Children's Hospital at Westmead
- water supply to local residents
- local traffic
- bus services

2. Consultation approach

Our approach to consulting with the community about proposed out-of-hours work included:

- distribution of 2-month advance notifications for out-of-hours work proposed in September and October
- a door knock of local residents and businesses
- a face to face survey about preferences for work hours with local residents and businesses
- distribution of a leave behind flyer outlining the work and encouraging stakeholders to share their views

These consultation mechanisms will be further supported by 7-day notifications to be distributed to residents and businesses before any medium to high impact out-of-hours work commences. This second notification will detail:

- work to be carried out
- work hours
- how this work will affect stakeholders
- contact details so they may speak with the project team about work hour preferences

2.1. 2-month advanced notifications

The local community was notified two months in advance of proposed medium to high risk out-of-hours work through letterbox drops to 1,715 residents on:

- 8 July 2019 – highlighting September out-of-hours work to relocate utilities at Darcy and Queens Roads
- 15 August 2019 – highlighting October out-of-hours work to install a new water main on Hawkesbury Road

2.2. Door knock and face to face surveys

Each residential and commercial property identified as an affected stakeholder was door knocked by the project's Communications Manager on Wednesday 14 August. In total 499 properties were door knocked to:

- Notify the community and local businesses of upcoming work and potential impacts
- Answer their questions about the project and proposed work
- Discuss their preferences for workdays and times

While residents on Mons Road are not heavily impacted by the proposed October OOHW to install a new water main on Hawkesbury Road, we will be storing a small amount of spoil at a site compound on Mons Road during this work. For this reason, while stakeholders in Mons Road did not receive a two-month notification, they were door knocked to ensure they were aware that we would be storing spoil in that location and had an opportunity to contact the project team to have their views considered. They will also receive a copy of the 7-day notification before work gets underway.

It was challenging to carry out face-to-face consultation with residents given the door knock was conducted during work hours and there are a high proportion of secure apartment complexes in the local area.

In an attempt to engage with residents, the Communications Manager scheduled the residential door knock in the afternoon to coincide with school pick up times which meant that parents were able to be surveyed on their way home from school.

In total 35 local residents and 10 businesses were surveyed about their preferences and any other issues they would like to be considered in our programming of work.

2.3. We knocked flyer

Where residents were not home or unable to be reached, a flyer was left that outlined the work and requested the stakeholder contact the project team to discuss their preferences. The project's website, 1800 number and email were provided to ensure they were aware of the available communication channels and mechanisms for providing input.

Given Westmead has a highly culturally diverse population, the notification left after door knocking contained information for stakeholders to access the translation information service if required.

To date we have had no responses in relation to the *We Knocked but No One was Home* flyer or 2-month letterbox drop notifications. We are working on the assumption that residents who have not responded to the flyer or letterbox drop:

- Feel like they are not impacted
- Accept or support that out-of-hours work is required
- Will let us know if they are feeling impacted once work is underway.

In the latter case, we will review work methodology and mitigation measures as required.

Table 1 – Summary

Notification – 2 months advance notice	Delivered to residents and businesses on 8 July and 15 August two months prior to proposed medium/ high impact out-of-hours work to relocate utilities under the road at Darcy Road in September and install a new water main along Hawkesbury Road in October (Appendix A)
We knocked flyer	Delivered to residents and businesses who were not available during the door knock (Appendix B)

Survey	• Capturing community preferences for work hours in line with E39 conditions (Appendix C)
7-days out notification	• A second notification will be sent to residents no less than 7 days ahead of the scheduled out-of-hours work in September and October • This second notification will detail work to be carried out, work hours, how this work will affect stakeholders and contact details so they may speak with the project team about work hour preferences

3. Consultation findings

On 14 August 2019, we met with 45 stakeholders in Westmead.

Total Consulted	45
Residents	35
Businesses	10

Out of 10 businesses:

- 8 preferred night work
- 2 had no preference or felt there would be no impact to their business

Out of 35 residents:

- 20 had no preference or were indifferent about hours of work
- 12 preferred night work
- 3 preferred day work

Key issues raised by businesses and residents included significant support for the project with many expressing the view that it will deliver major benefits to the local community when it is completed. Many residents expressed a willingness to put up with some short-term disruption in order to secure better public transport for the local area.

They also raised work hours and impact on hospitals and business operations, impacts on access (particularly deliveries) and parking particularly for patients visiting the area for medical appointments.

3.1. How we have taken stakeholders' feedback into account

Following a review of stakeholder comments, we have recommended night works to align with stakeholder preferences and minimise impacts on the community, hospital emergency departments and traffic.

The Communications Manager meets fortnightly with representatives from the Westmead Hospital, the Children's Hospital at Westmead, Westmead Medical Research Institute and Children's Medical Research Institute. This group of stakeholders would prefer weekend and

night work to minimise disruption to their employees, ED departments and operations which are typically busier during business hours and weekdays.

Cameron Westman the General Manager of Hotel 175 (Corner of Queens and Hawkesbury Road) has requested that we avoid, where possible, night work at the Queens Road pedestrian crossing. Work on the crossing has been planned for weekend day work to accommodate this request and minimise impact on hotel guests.

Representatives from the Western Sydney University – Westmead Precinct prefer night work and activities to be undertaken during university holidays when fewer student and staff are on campus. The University's contact Amanda Whibley is regularly communicated with about PLR works via phone (0418 438 399) and email: a.whibley@westernsydney.edu.au

The below table details how stakeholders' feedback during our consultation process has been taken into consideration during the planning of the out of hours work program.

Area	Feedback	Proposal
Westmead	All businesses and the majority of residents surveyed were happy for the work to be carried out out-of-hours To date, there have been no other responses to our request for stakeholders to contact us with their preferences for work hours.	Where possible we will conduct noisy work during the day. We will also: • provide respite by not working in any one location for more than four nights in a row • using noise mats around equipment • monitoring and reviewing noise levels • using non-tonal reversing beepers on machinery • turning off equipment and vehicles when not in use • directing noise away from residents and businesses where it is possible to do so Traffic management will be in place to safely maneuver construction machine to and from the site and ensure the safety of the pedestrians and traffic. We will also continue to review our work program if residents contact the project team before or during work. Their comments and requests will be taken into consideration wherever possible.

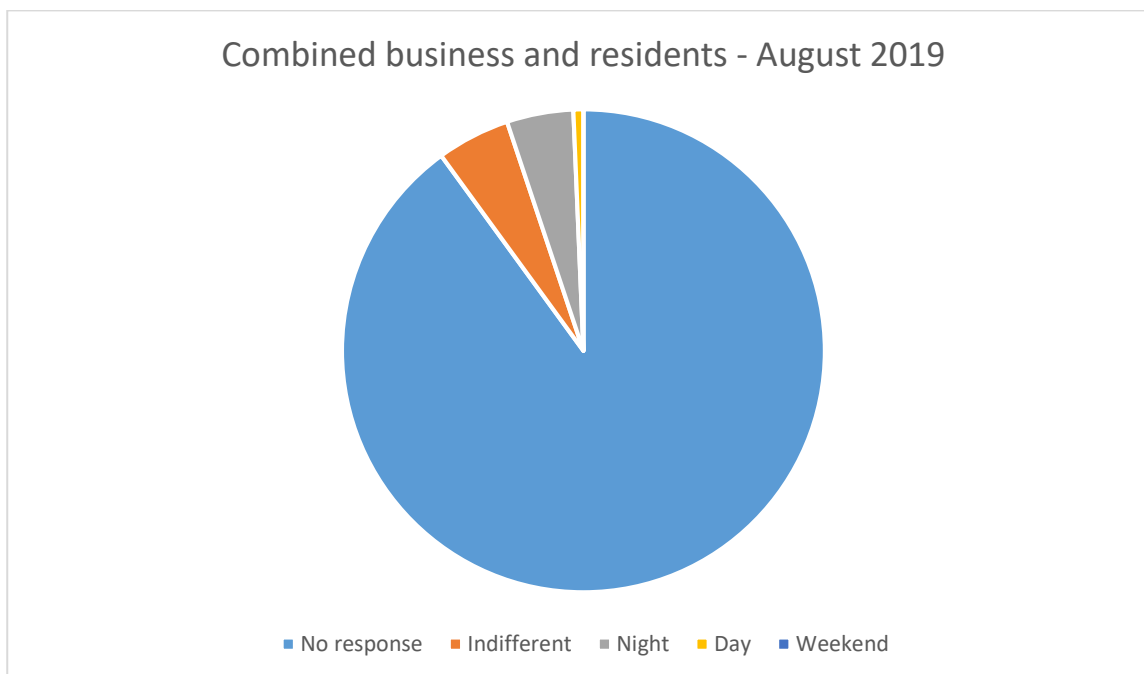
3.2. Results

Construction hours preferences

Total Consulted	Day	Night	Weekend	Indifferent	No Response
Residents	3	12		20	314
Businesses		8		2	90

We understand stakeholders may contact us when work starts if they feel the impact of the work is greater than expected. In these instances, we will give consideration to all feedback and review our work program and activities as required.

A breakdown of construction hour preferences is provided below.



3.3. Mitigation measures for non-response stakeholders

To mitigate impacts on stakeholders who did not respond to door knocks and letterbox drops, we will undertake the following measures:

- ensuring noisiest work like rock breaking and concrete cutting is completed during the day
- monitoring and reviewing noise levels
- using non-tonal reversing beepers on machinery
- turning off equipment when not in use
- directing noise emissions away from residential properties, where possible
- using sound curtains to shield road sawing and rock breaking works.

4. Recommendations

Following a review of stakeholder feedback, Ford Civil recommends that the government accepts the local community's preference for out-of-hours work in Westmead.

5. Next steps

Ford Civil will share this information with TfNSW and work together on how best to keep the community updated on project information and construction timeframes.

6. Appendices

6.1. Appendix A – Notifications – 8 July 2019 and 15 August 2019

Parramatta Light Rail

Westmead Precinct

Hawkesbury Road Widening: August – October 2019

COMMUNITY UPDATE

The \$2.4 billion Parramatta Light Rail Stage 1 will connect Westmead to Carlingford via the Parramatta CBD and Camellia, transporting around 28,000 people every day to key destinations, new communities and essential services. It is expected to open in 2023.

Hawkesbury Road, between Darcy Road and Jessie Street, Westmead, is being widened in preparation for the construction and operation of Parramatta Light Rail. **Ford Civil** has been engaged to carry out this work.

Hours of work

The widening of Hawkesbury Road will involve day and night work and is due to be completed in mid-late 2020. Standard construction hours are **7am to 7pm Monday to Friday**, and **8am to 6pm on Saturday**.

At times, some out-of-hours work will be required from **7pm to 6am and on weekends** to minimise disruption to the local community and maintain access to Westmead Hospital. You will be notified in advance before any out-of-hours works commences and about the duration of the works.

When we are required to work at night, we will not work in any one location for more than four nights in a 7-day period. We will also regularly consult with the community about your preferences for out-of-hours work and we welcome your feedback during construction and as we plan our work.

Upcoming work

August

From mid-August, you will start to notice changes along Hawkesbury Road as works gets underway.

In the early stages, you'll see parking between Darcy Road and Jessie Street being removed, construction barriers installed, median strips and barriers removed, trees being trimmed or removed and local footpaths being upgraded.

September

In September, we will be working over two weekends and some nights to relocate utilities under the road. Night work will occur over around 15 nights and take place at the corner of Hawkesbury Road and Darcy Road. Weekend work will occur during the day and take place at the corner of Hawkesbury Road and Queens Road. We will provide more details before work commences.

October

In mid-late October, we will be relocating existing water services and installing a new water main along Hawkesbury Road, between Queens Road and Jessie Street. This work will include saw-cutting the roadway, excavation and trenching, as well as temporary disruption to the water supply of some properties. Sydney Water will also provide affected customers with more information about any disruptions to water supply.

 Translating and Interpreting Services If you require the services of an interpreter, please contact the Translating and Interpreting Service (TIS National) on 131 450 and ask them to telephone Parramatta Light Rail on 1800 139 389.	Traditional Chinese 如果您需要一位口譯員，請撥打131 450 到華語與口譯服務Translating and Interpreting Service (TIS National)，要求他們撥打Parramatta輕軌 (Parramatta Light Rail) 的電話1800 139 389	Hindi यदि आपको व्याख्यान की आवश्यकता है तो कृपया अनुवाद व व्याख्यान सेवा (TIS National) को 131 450 पर फोन करें और उनसे कहें कि वे पारमट्टा लाइट रेल (Parramatta Light Rail) से टेलीफोन नंबर 1800 139 389 पर फोन करें।
Arabic إذا كنت بحاجة إلى مترجم ، فيرجى الاتصال بخدمة الترجمة والترجمة الفورية (TIS National) على الرقم 131 450 واعطهم منهم الاتصال بالمشكك الحدينية الخليفة بباراماتا (Parramatta Light Rail) على الرقم 1800 139 389	Simplified Chinese 如果您需要一位口譯員，請撥打131 450 到華語與口譯服務Translating and Interpreting Service (TIS National)，要求他們撥打Parramatta輕軌 (Parramatta Light Rail) 的電話1800 139 389	Korean “통역사가 필요할 경우, 전화번호 131 450의 번역 및 통역 서비스 (TIS 내셔널)에 전화한 다음 1800 139 389로 파라마타 라이트 레일 (Parramatta Light Rail)에 전화해 달라고 요청하십시오.”

For information about the Parramatta Light Rail project, visit parramattalightrail.nsw.gov.au
Email: parramattalightrail@transport.nsw.gov.au | Call: 1800 139 389 (24 hours)

Page 1 of 2

Light trucks will also be used to move a small amount of spoil, or crushed rock, to a site compound at the end of Mons Road where it will be temporarily stored. See map below for main work areas denoted in blue.

To minimise disruption to residents and businesses, this work will be carried out at night between 7pm and 6am. We anticipate that it will take between four to eight nights to complete this work and we will provide more information to residents and businesses before this work starts.

What equipment will be used?

Equipment will include (but not be limited to) road saws, jackhammers, small plate compactors, power tools, excavators, vacuum trucks and light trucks.

Traffic and pedestrian access

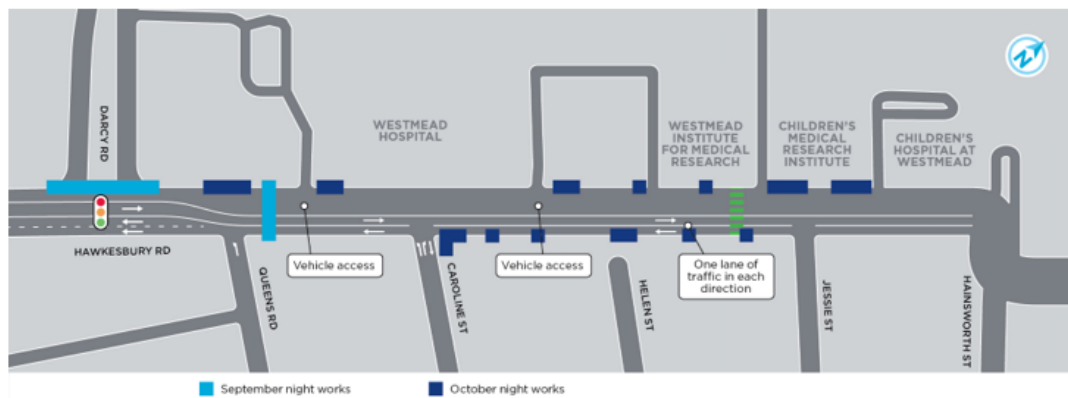
Temporary pedestrian and traffic control will be in place as required to ensure traffic, pedestrians and the public can move around the work zones safely. Access to businesses will be maintained during operating hours and access to driveways will be maintained at all times. Please follow the direction of traffic controllers and signs and proceed carefully.

How will the work affect you?

There will be some noise and vibration associated with this work and work areas will also be lit to ensure safe working conditions. We acknowledge that our work may be disruptive and we apologise for the inconvenience.

We will make every effort to minimise disruption caused by noise and vibration by:

- completing the majority of excavation work during the day
- providing respite periods if undertaking any highly noise intensive activities
- using sound mats around our sites and equipment where appropriate
- monitoring and reviewing noise levels
- consulting directly with affected residents and businesses
- turning off equipment and vehicles when not in use
- using non-tonal reversing beepers on machinery
- directing noise emissions away from businesses and residential properties, where possible



Contact Us

To find out more about the project, or if you would like to meet with our team to discuss your preference for work hours, please call our 24/7 community information line on 1800 139 389 or visit the Parramatta Light Rail website www.parramattalightrail.nsw.gov.au.

Thank you for your understanding during this important work. We will continue to keep you regularly updated as the project progresses.



Westmead Precinct

Hawkesbury Road Widening: July - September 2019

NIGHT WORKS – UPDATE

8 July 2019

Stage 1 of the \$2.4 billion Parramatta Light Rail will connect Westmead to Carlingford via the Parramatta CBD and Camellia, transporting around 28,000 people every day to key destinations, new communities and essential services. It is expected to open in 2023.

Hawkesbury Road, between Darcy Road and Jessie Street, Westmead, is being widened in preparation for the construction and operation of Parramatta Light Rail, in association with the Westmead Redevelopment project.

The contractor Ford Civil has been engaged to carry out this work.

Upcoming Works

The widening of Hawkesbury Road between Darcy Road and Jessie Street, Westmead, will involve both day and night works and is expected to be completed in mid-2020. From July, work will include:

- the establishment of site compounds
- the relocation of utilities
- modifications to the existing traffic network
- permanent removal of some parking and relocation of accessible parking spaces
- removal of the roundabout at the corner of Caroline Street and Hawkesbury Road, as well as the removal of median strips and median kerbs
- trimming or removal of some trees - for more on tree removal and our tree planting initiatives, visit our online fact sheet: trees (parramattalightrail.nsw.gov.au/trees).



Translating and Interpreting Services

If you require the services of an interpreter, please contact the Translating and Interpreting Service (TIS National) on 131 450 and ask them to telephone Parramatta Light Rail on 1800 139 389.

Arabic

إذا كنت بحاجة إلى مترجم - فمرجى الاتصال بخدمة الترجمة والتفسير الفورية (TIS National) على الرقم 131 450 واطلب منهم الاتصال بالسلطة الجديدة الخفيفة بباراماتا (Parramatta Light Rail) على الرقم 1800 139 389

Traditional Chinese

如果您需要一位口譯員，請撥打131 450 到筆譯與口譯服務 (Translating and Interpreting Service (TIS National)，要求他們撥打Parramatta輕軌 (Parramatta Light Rail) 的電話1800 139 389

Simplified Chinese

如果您需要一位口譯員，請撥打131 450 到筆譯與口譯服務 (Translating and Interpreting Service (TIS National)，要求他們撥打Parramatta輕軌 (Parramatta Light Rail) 的電話1800 139 389

Hindi

यदि आपको टुपारफर की आवश्यकता है तो कृपया अनुवाद व टुपारफर सेवा (TIS National) को 131 450 पर फोन करें और उन्हें बतें कि वह पैरामाटा लाइट रेल (Parramatta Light Rail) से टेलीफोन कर 1800 139 389 पर फोन करें।

Korean

"통역사가 필요할 경우, 전화번호 131 450의 번역 및 통역 서비스 (TIS 내셔널)에 전화한 다음 1800 139 389로 파라마타 라이트 레일 (Parramatta Light Rail)에 전화해 달라고 요청하십시오."

Hours of Work

Standard construction hours will be **7am to 7pm Monday to Friday**, and **8am to 6pm on Saturday**.

Out-of-hours work

To minimise disruptions to bus services and emergency department access to Westmead Hospital, night works consisting of excavation, trenching and installation of services, will be carried out between **8pm and 7am** from **mid to late August** at the following locations:

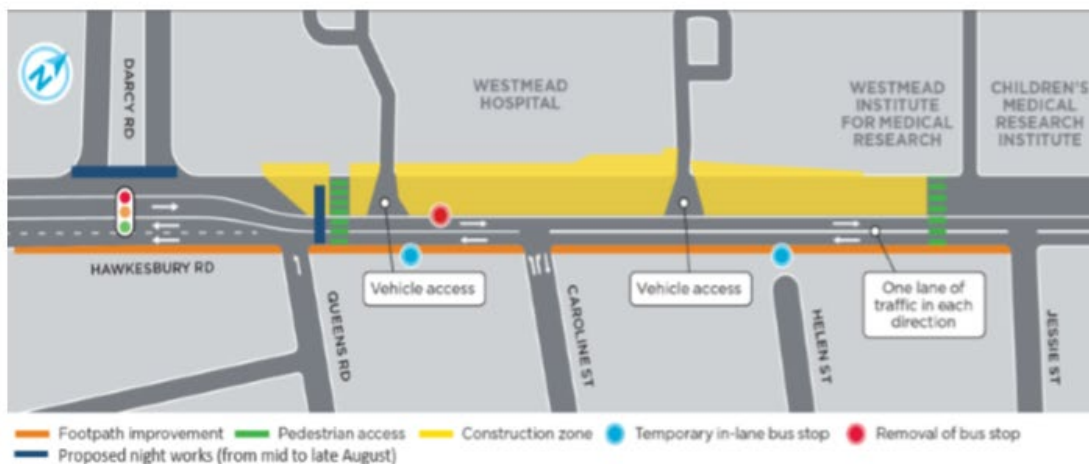
- Corner of Darcy Road and Hawkesbury Road
- Corner of Queens Road and Hawkesbury Road.

We will take about **15 days** to complete these out-of-hours works and you will be notified in detail closer to the start of work. See map for the work area denoted in **navy blue** below.

This work will generate varying levels of vibration and noise including high impact activities including saw-cutting the roadway. Night work areas will be lit to ensure safe working conditions.

When we are required to work out-of-hours, we will not work in any one location for more than four nights in a 7-day period, or will provide no less than three nights of respite between construction works, without approval from the Department of Planning, Industry and Environment.

We will be commencing community consultation via doorknocks within the next few weeks for these works and we welcome feedback during construction as we plan our work.



Map showing the works and upcoming changes to traffic conditions.

What equipment will be used?

Plant and equipment will include, but is not limited to, road saws, jackhammers, plate compactors, power tools, excavators, vacuum trucks, piling rigs, cranes and light trucks.

How will the work affect you?

There will be some noise and vibration associated with this work. We acknowledge that our work may be disruptive and we apologise for the inconvenience. We will make every effort to minimise noise and vibration by:

- providing respite periods if undertaking any high-level noise activities
- consulting directly with affected residents and businesses
- turning off equipment and vehicles when not in use
- monitoring and reviewing noise levels
- using non-tonal reversing beepers on machinery
- directing noise emissions away from businesses and residential properties, where possible.

Traffic, cycling and pedestrian management

One lane of traffic will remain open in each direction and traffic control will be in place to enable pedestrians and vehicles to move safely around work areas and ensure access to driveways is maintained.

There will be some changes to bus stops, for which signage will be in place. Please refer to map below.

Bike-riding routes will remain in place as before.

Please follow signage and directions from traffic controllers and proceed carefully.

Removal of parking

You will have received a previous notification advising that street parking on Hawkesbury Road, between Darcy Road and Jessie Street, is to be permanently removed as a result of these works. All accessible parking spaces, along with some two-hour parking spaces, will be relocated to adjacent streets. Wayfinding signage will be installed to direct users.



Trees

A project of the scale of the Parramatta Light Rail inevitably results in the loss of trees. Some trees along Hawkesbury Road will be removed by a qualified arborist.

To offset the removal of any trees across the light rail alignment, at least 3500 new native and non-native trees will be planted over four years by the Parramatta Light Rail program.

Other construction work

Multiple contractors have been engaged to ensure the successful delivery of the Parramatta Light Rail and are working together to coordinate activities and minimise the impacts of construction on the community.

Please be aware that Parramatta Light Rail **infrastructure works contractors CPB Contractors Downer Joint Venture** will also be in the Westmead Precinct throughout July to September. They will be carrying out site investigations, including surveying, potholing and slot trenching in the following areas:

- Hawkesbury Road and surrounding site streets
- Hainsworth Street
- Cumberland Hospital (day work only).

Most site investigations will be carried out during standard construction hours, weather permitting. Some night work will be carried out from 6pm to 7am to minimise the impacts on traffic. Traffic and pedestrian controls will include temporary lane closures, the use of temporary traffic signals and the removal of parking.

More information

To find out more about the project, or if you would like to meet with our team to discuss your preference for work hours, please call our 24/7 community information line on 1800 139 389, email us at parramattalightrail@transport.nsw.gov.au or visit the Parramatta Light Rail website at parramattalightrail.nsw.gov.au.



6.2. Appendix B – We knocked but nobody was home flyer

Parramatta Light Rail



We knocked but nobody was home...

Dear Resident

Hawkesbury Road, between Darcy Road and Jessie Street is being widened in preparation for Parramatta Light Rail. In late September we will start relocating utilities under the road at the corner of Hawkesbury Rd and Darcy Street and at the pedestrian crossing near the corner of Hawkesbury Road. In October we will start installing a new water main along Hawkesbury Road between Queens Road and Jessie Street.

In addition to day work, some work will be carried out at night and will involve:

- digging holes in the road and footpath with road saws
- excavation and removal of spoil
- trenching and relocating utilities
- reinstating the road surface and footpath for safe access

You will receive more information before work starts. Please call the community information line on 1800 139 389 if you would like to discuss your preferences for work hours with one of our team.

To learn more about the Parramatta Light Rail project, please call our community information line on 1800 139 389, email us at parramattalightrail@transport.nsw.gov.au or visit www.parramattalightrail.nsw.gov.au.

 Translating and Interpreting Services If you require the services of an interpreter, please contact the Translating and Interpreting Service (TIS National) on 131 450 and ask them to telephone Parramatta Light Rail on 1800 139 389.	Traditional Chinese 如果您需要一位口譯員，請撥打131 450 到筆譯與口譯服務Translating and Interpreting Service (TIS National)，要求他們撥打Parramatta輕軌 (Parramatta Light Rail) 的電話1800 139 389	Hindi यदि आपको दुभाषि की आवश्यकता है तो कृपया अनुवाद व दुभाषि सेवा (TIS National) को 131 450 पर फोन करें और उनसे कहें कि वह पैरामाटा लाइट रेल (Parramatta Light Rail) से टेलीफोन नम्बर 1800 139 389 पर फोन मिला दे
Arabic إذا كنت بحاجة إلى مترجم ، فيرجى الاتصال بخدمة الترجمة والترجمة الفورية (TIS National) على الرقم 131 450 واطلب منهم الاتصال بالسكك الحديدية الخفيفة بباراماتا (Parramatta Light Rail) على الرقم 1800 139 389	Simplified Chinese 如果您需要一位口譯員，請撥打131 450 到筆譯與口譯服務Translating and Interpreting Service (TIS National)，要求他們撥打Parramatta輕軌 (Parramatta Light Rail) 的電話1800 139 389	Korean “통역사가 필요할 경우, 전화번호 131 450의 번역 및 통역 서비스 (TIS 내셔널)에 전화한 다음 1800 139 389로 파라마타 라이트 레일 (Parramatta Light Rail)에 전화해 달라고 요청하십시오.”

6.3. Appendix C – Survey

E39 Consultation Survey

The below questions have been used to capture stakeholder preferences regarding work hour preferences.

Documenting work hour preferences regarding out-of-hours work is a requirement under Condition E39 of the Contract and must be carried out for any out-of-hours work under a Minor Works Approval or Construction and Environmental Management Plan (CEMP) approvals.

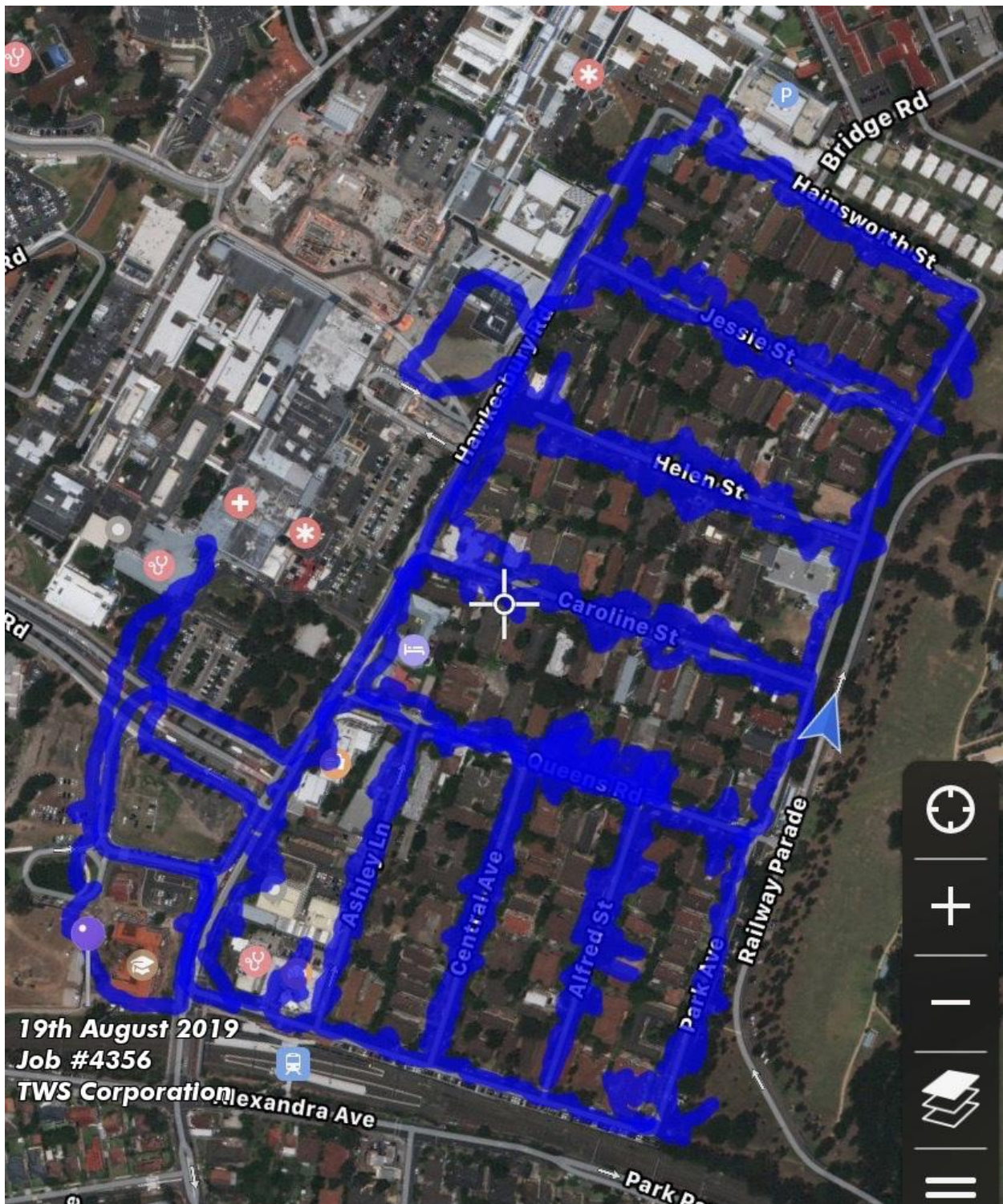
Out of hours work	
1. Regarding time of work, what would you prefer?	☐ Day work ☐ Night work ☐ Either
2. If we need to work at night, do you have a preference of nights and time of work?	☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday ☐ Sunday ☐ Any night Times: _____
3. Is there anything we need to consider while working at night (e.g.; special deliveries, staff onsite after hours etc.)? If yes, please provide details.	Yes /No Details: _____

6.4. Appendix D – Distributions

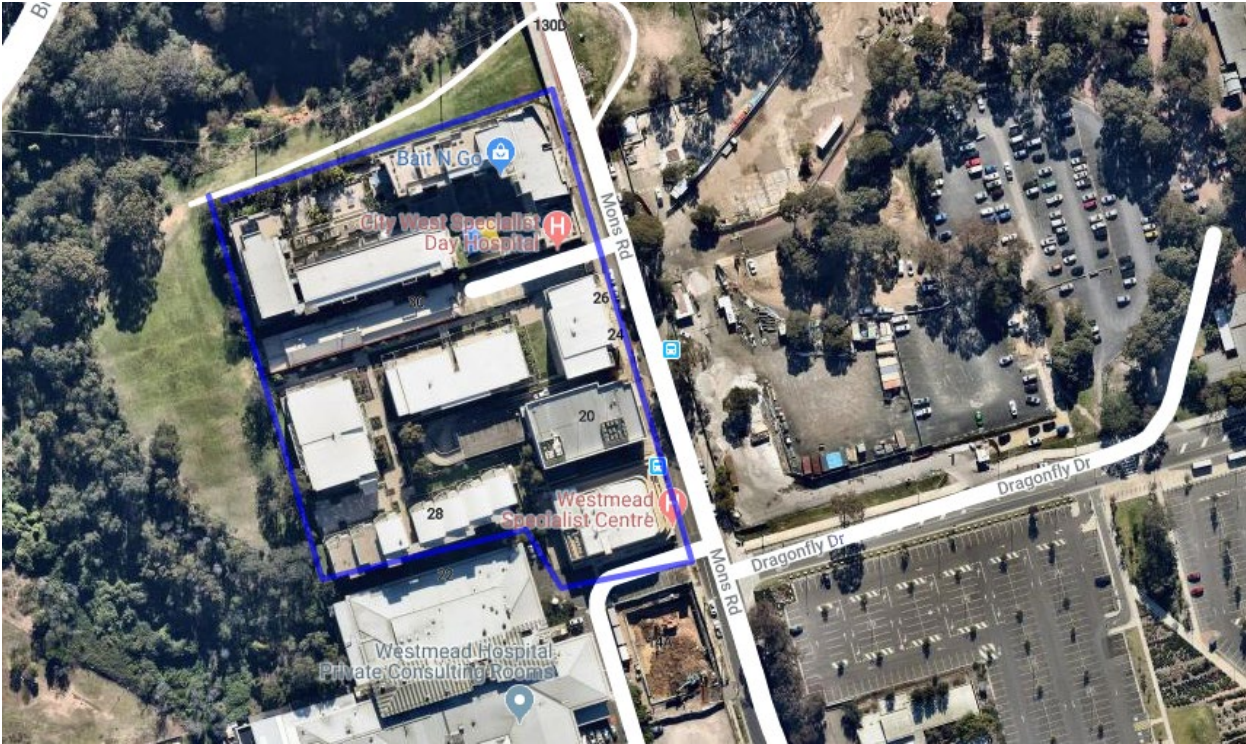
6.5. Extent of door knock area (red) and letterbox distribution (GPS Tracked)







Additional properties door knocked on Mons Road in relation to use of compound for storage during October OOHW



6.6. Appendix E - Properties door knocked

Location: Westmead	
Name	Address
Ray White Westmead	Shop 3, 163-171 Hawkesbury Road, Westmead
Kongfucious	163-171 Hawkesbury Road, Westmead
Chennai Trading & Supermarket	161A Hawkesbury Road, Westmead
Goodfellas Espresso House	Suite 6/151-155 Hawkesbury Road, Westmead
Westmead GP	161 Hawkesbury Road, Westmead
Chennai Trading & Supermarket	161A Hawkesbury Road, Westmead
Westmead Tavern	24-26 Railway Parade, Westmead
Westmead Pediatrics	Suite E, Level 1/27 Railway Parade, Westmead
Ashley Centre	Suite 13, 1A Ashley Lane, Westmead
175 One Hotel and Apartments	175 Hawkesbury Road, Westmead
	27 Railway Parade, Westmead
	185-187 Hawkesbury Road, Westmead
	24-26 Railway Parade, Westmead
	30 Hainsworth Street, Westmead
	28 Hainsworth Street, Westmead
	26 Hainsworth Street, Westmead
	18 Hainsworth Street, Westmead
	211 Hawkesbury Road, Westmead
	209 Hawkesbury Road, Westmead
	199 Hawkesbury Road, Westmead
	27 Jessie Street, Westmead
	23 Jessie Street, Westmead
	21 Jessie Street, Westmead
	22-24 Jessie Street, Westmead
	20 Jessie Street, Westmead
	18-20 Jessie Street, Westmead
	38 Jessie Street, Westmead
	30 Jessie Street, Westmead
	32 Jessie Street, Westmead
	195 Hawkesbury Road, Westmead
	22 Helen Street, Westmead
	24 Helen Street, Westmead
	26 Helen Street, Westmead
	29 Helen Street, Westmead
	27 Helen Street, Westmead

	25 Helen Street, Westmead
	23 Helen Street, Westmead (6 apartments)
	31 Helen Street, Westmead
	27 Railway Parade, Westmead
	21-23 Railway Parade, Westmead
	22-26 Queens Road, Westmead
	31 Queens Road, Westmead
	33 Queens Road, Westmead
	30-35 Queens Road, Westmead
	36 Queens Road, Westmead
	179 Hawkesbury Road, Westmead
	28 Caroline Street, Westmead
	23 Caroline Street, Westmead
	20-22 Mons Road, Westmead
	24 Mons Road, Westmead
	26 Mons Road, Westmead
	30 Mons Road, Westmead

6.7. Appendix E – Specific notification – Westmead (draft for October night works)



Swan Htet (AU) <swan.htet@pwc.com>

Submitted for approval - Construction notification: October Watermain OOHW

Rebecca Raap <rebecca.raap@struber.com.au>

Wed, Oct 2, 2019 at 7:43 PM

To: Masieray Sesay <Masieray.Sesay@transport.nsw.gov.au>

Cc: Ivan Tcherkashnev <ivan.tcherkashnev@pwc.com>, Swan Htet <swan.htet@pwc.com>

Hi Maz,

Please find attached the next OOHW notification for approval.

I'm hoping it is OK to submit with dates pending as we're waiting for Sydney Water and DPIE approval so would like to get this approved so it's ready to go on time. I can resubmit the updated version for uploading to the website once confirmed.

Please let me know if that's OK.

Many thanks, Rebecca

Rebecca Raap / Senior Consultant**STRUBER** //// / TASKFORCE to COMMUNICATE, ENGAGE, MARKET & CREATE**M** +61 439 788 446 **T** 1300 319 166**E** rebecca.raap@struber.com.au **W** struber.com.au

If you have received this email in error please notify the system manager. This message contains confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this e-mail. Please notify the sender immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. If you are not the intended recipient you are notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited. [Read more](#)

Think before you ink.

**201910xx - 7 day Notification - Watermain OOHW.docx**

1527K

Construction Work

Westmead – October 2019

[insert day] October 2019 - COMMUNITY NOTIFICATION

The \$2.4 billion Parramatta Light Rail will connect Westmead to Carlingford via the Parramatta CBD and Camellia, transporting around 28,000 people every day to key destinations, new communities and essential services. It is expected to open in 2023.

Hawkesbury Road, between Darcy Road and Jessie Street, Westmead is being widened in preparation for the construction and operation of Parramatta Light Rail, in association with the Westmead Redevelopment project. **Ford Civil** has been engaged to complete this work.

Upcoming Work: Hawkesbury Road between Queens Road and Jessie Street

Between **[insert dates]** in October 2019, we will be relocating existing water services and installing a new watermain along Hawkesbury Road. This work will take place between Queens Road and Jessie Street on the residential side of Hawkesbury Road. Work will include saw-cutting the roadway, excavation and trenching, and the temporary disruption of water supply to some properties. Light trucks will be used to move a small amount of crushed rock to a temporary site compound at the end of Mons Road.

Sydney Water will advise affected customers about any disruptions to their water supply.

When will the work take place?

Standard construction hours will be **7.00 am to 7.00 pm Monday to Friday and 8.00am to 6.00pm on Saturday**.

Out-of-hours work

In order to minimise disruption to water services for residents some of this work will also occur outside of the standard hours between **7.00pm and 7.00am** on the following nights:

- Between Jessie and Helen Streets **[insert day and date]**
- Between Helen and Caroline Streets **[insert day and date]**
- Between Caroline Street and Queens Road **[insert day and date]**.

Traffic and pedestrian access

Temporary pedestrian and traffic control will be in place as required to ensure traffic, pedestrians and the public can move safely around the work zones.



Translating and Interpreting Services

If you require the services of an interpreter, please contact the Translating and Interpreting Service (TIS National) on 131 450 and ask them to telephone Parramatta Light Rail on 1800 139 389.

Arabic

إذا كنت بحاجة إلى مترجم، فيرجى الاتصال بخدمة الترجمة والترجمة الفورية (TIS National) على الرقم 131 450 واطلب منهم الاتصال بالسكك الحديدية الخفيفة بباراماتا (Parramatta Light Rail) على الرقم 1800 139 389

Traditional Chinese

如果您需要一位口譯員，請撥打131 450 到筆譯與口譯服務Translating and Interpreting Service (TIS National)，要求他們撥打Parramatta輕軌 (Parramatta Light Rail) 的電話1800 139 389

Simplified Chinese

如果您需要一位口譯員，請撥打131 450 到筆譯與口譯服務Translating and Interpreting Service (TIS National)，要求他們撥打Parramatta輕軌 (Parramatta Light Rail) 的電話1800 139 389

Hindi

यदि आपको दुभाषी की आवश्यकता है तो कृपया अनुवाद व दुभाषिया सेवा (TIS National) को 131 450 पर फोन करें और उनसे कहें कि वह पैरामाटा लाइट रेल (Parramatta Light Rail) से टेलिफोन नम्बर 1800 139 389 पर फोन मिला दें

Korean

“통역사가 필요할 경우, 전화번호 131 450의 번역 및 통역 서비스 (TIS 내셔널)에 전화한 다음 1800 139 389로 파라마타 라이트 레일 (Parramatta Light Rail)에 전화해 달라고 요청하십시오.”

Access to businesses will be maintained during operating hours, and access to driveways will be maintained at all times. Please follow the direction of traffic controllers and signs and proceed carefully.

What equipment will be used?

Equipment will include, but is not limited to, road saws, jack hammers, small plate compactors, excavators, rollers, vacuum trucks, light vehicles and power tools.

How will the work affect you?

There may be some noise and vibration associated with this work. We understand our work will be disruptive and we apologise for the inconvenience.

We will make every effort to minimise noise and vibration impacts by:

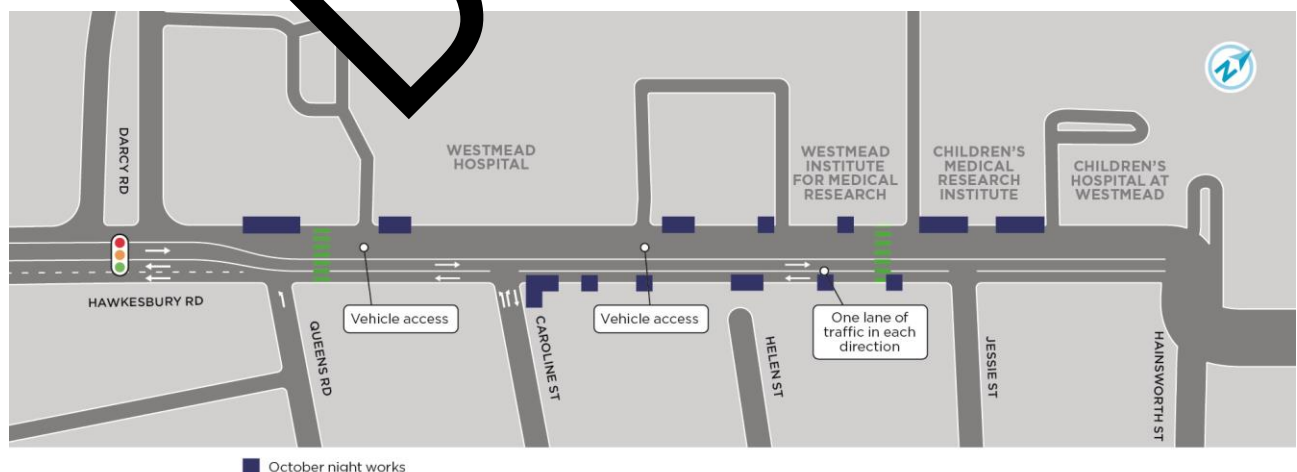
- where possible, completing the noisiest work earlier rather than in the evening
- **visiting residents to provide advance notification when the noisiest work is scheduled**
- consulting with directly affected residents and businesses
- providing respite by not working in any one location for more than four nights in a row
- using noise mats around equipment
- monitoring and reviewing noise levels
- using non-tonal reversing beepers on machinery
- turning off equipment and vehicles when not in use
- directing noise away from residents and businesses where it is possible to do so.

Contact us

To find out more about the project, or to discuss your preferences for work hours, please call our 24/7 community information line on 1800 139 389 or visit the Parramatta Light Rail website www.parramattalightrail.nsw.gov.au

Thank you for your understanding during this important work. We will continue to keep you informed and updated.

Location of work



6.8. Appendix F: Consultation with Researchers (Ongoing fortnightly meetings)

17/09/19

Mark Moulton,
Contractor's Authorized Person
Ford Civil Contracting Pty Ltd
9 Hattersley St, Arncliffe NSW 2205

Dear Mark,

This letter confirms that the undersigned Westmead campus stakeholders authorise Ford Civil Contracting (FCC) to request utilities information and impact of utilities cutovers on their behalf. FCC is undertaking the Hawkesbury Road Widening (HRW) works as part of the Parramatta Light Rail project. In order for Ford Civil to investigate the full extent of any temporary service interruptions, agreement from the building user is required. To date Ford Civil has been unable to get information without this agreement.

FCC will contact the below utility providers to advise on potential service impacts relating to the job/case numbers shown in Table 1 below.

Table 1: Services Job Number or Case Number Associated with HRW works

Utility Provider	Job Number / Case Number
Sydney Water	Potable Water 169169
	Wastewater 169170
Telstra	SI 202263/21
Optus	P1053986
Uecomm	UERTS-237A
AARNET	CIVILS-515 PLR Westmead Stage 1 CIVILS-515 PLR Westmead Stage 2
AAPT/TPG	FOAR - 838
Endeavour Energy	ARP3750
Jemena	GAW Capex BAB-COU-000006
Vocus	RW00346



Health
Infrastructure

Matt Sydenham – Director, Capital Works & Asset Management, Western Sydney Local Health District

Signature

A handwritten signature in black ink, consisting of a large loop and a long horizontal stroke.

Date

18/9/19

Dave Hutchison – Facilities Manager, Westmead Institute of Medical Research

Signature

A handwritten signature in blue ink, featuring a stylized 'D' and 'H'.

Date 17.09.2019

Roberto Spada – Facility Engineer, Children's Medical Research Institute

Signature

A handwritten signature in black ink, with a stylized 'R' and 'S'.

Date

18/9/19.

MARY THOMAS - CORPORATE SERVICES MANAGER ~~SEN~~ CHW

A handwritten signature in black ink, with a stylized 'M' and 'T'.

18/9/19.

Minutes – Research Institutes’ Technical Working Group Meeting #89

Date: 22 August 2019 **Start:** 10:30 am **End:** 11:00 am

Venue: Westmead Institute for Medical Research

Name	Init	Role	Org	Attend
Committee				
John Dakin	JD	Chief Operating Officer	WIMR	Yes
Mark Shannon	MS	Research Manager	WIMR	-
Rebecca Rielly	RR	Research Operations Manager	KR	-
Roberto Spada	RS	Facility Engineer	CMRI	Yes
Ross Matthews	RM	Research and Education Network	WSLHD	Yes
Terry Amis	TA	Assoc Director, Ludwig Engel Ctr for Resp Research	WIMR	Yes
Tim Mason	TM	Senior Project Director	HI	-
Nick Weeks (Chair)	NWe	Project Manager	PwC	Yes
Wayne Hawthorne	WH	Biological Services Facility & Human Apps Lab	WIMR	-
Other Attendees				
Andrew Johnston	AJ	IT Systems Manager	WIMR	-
Andrew Krueing	AK	Facilities Coordinator	WIMR	-
Anthony Toomeh	AT	Project Engineer	MPX	-
Danny Khal	DK	Senior Project Engineer	Ford Civil	Yes
Darren Hudson	DHud	Construction Director	PwC	-
Dave Hutchison	DHch	Facilities Manager	WIMR	Yes
Einion Thomas	ET	Project Manager	CMRI	-
Emma Devoss	ED	PLR Comms	Struber	-
Ivan Tcherkashnev	IT	Project Manager	PwC	-
Jackson Lord	JL	Services Engineer Co-ordinator	Ford Civil	-
James Wright	JW	Project Director	PwC	-
Jane Curran	JCu	Project Manager	MPX	-
Kirstin Shepherd	KS	Project Coordinator	WSLHD	-
Laurence Cantrill	LC	Research Development Office	KR	Yes
Matthew Kan	MK	Project Manager	PwC	Yes
Mayuresh Korgaonkar	MK	Dry Laboratory Research	WIMR	-
Mitch Pelling	MP	Project Engineer	MPX	Yes
Pierre Taouk	PT	Site Manager	FDC	Yes
Tom McGregor	TMc	Project Manager	PwC	-
Sarah Freeman	SF	Network Safety Manager	SCHN	-
Swan Htet	SH	Project Manager	PwC	-
Hossein Bidgoli	HB	Associate Project Director	HI	Yes
Other Distribution				
Brian Jackson	BJ	Director Finance & Corporate Services	SCHN	
Cate Smith	CS	Director of Research Operations	KRI	
Mitchell Gretch	MGr	Site Engineer	MPX	
Tony Gulliver	TG	Executive Director, Redevelopment & Infrastructure	WSLHD	

Item	Description	Action	Due
1.0	Apologies and introductions		
1.1	Attendance as per the first page of this document.	Note	
2.0	Previous meeting minutes acceptance & Action Log		
2.1	Minutes – the previous meeting minutes were accepted.	Note	
2.2.1	Action Log – Action items from the previous meeting were reviewed and updated accordingly.	Note	
3.0	Multiplex Update		
3.1	MP presented the MPX look ahead noting upcoming works related to the KRI Lane ramp, demolition of the raised WIMR Linkway and construction of the final stage of the permanent Linkway alignment.	Note	
4.0	HRW update		
4.1	DK provided a general update of HRW works including the following: - FCC provided an update on upcoming out-of-hours works - September out of hours work at Darcy Rd and Queens Rd for Telstra works. - October out of hours work for live Sydney water main connections. - FCC to identify utilities and services potentially affected by construction. Ongoing consultation with relevant owners to be commenced to minimise any disruptions to service. FCC to advise impact of works once planned disruption of service is known.	Note	
5.0	Generator Install update		
5.1	FDC/HI provided an update for the upcoming works related to the installation of the CHW Generator at the bottom of KRI Lane. Further coordination sessions are to be scheduled to ensure minimal impact to hospital stakeholders.	Note	
6.0	Comms update		
6.1	Nil outside of what was presented.	Note.	
7.0	Other Business		
7.1	DHch noted outstanding items requiring rectification following handover of WIMR pedestrian link on 19 th August as per email to NW. NW to coordinate with MPX.	NW	ASAP
7.2	DHch noted concerns with current fire break glass within secure area of WIMR pedestrian link and queried whether an alternative option was available. NW to confirm.	NW	ASAP
7.3	DHch asked for confirmation from ARUP that BSF Acoustic Monitor can be removed.	NW	ASAP
7.4	DHch queried whether a secondary dry fire sensor can be installed in L1 Shared Access egress path. NW to coordinate with MPX/DHch.	NW	ASAP
8.0	Next meeting		
8.1	Next meeting, 5 September 2019, 10:30am	Note	

Action Log

Meeting: Research Institutes TWG

Date: 22 August 2019

ITEM	SUBJECT	ACTION	RESP	DUE
Meeting 89 – 23 August 2019				
4.1.1	HRW Service Disruptions	IT/SH to advise TWG group of extent of any expected services disruptions during upcoming works.	IT/SH	Ongoing
4.1.2	Main Connection Site Works	Sydney water mains connection night works scheduled to commence between late October and Late November. IT/SH to provide detailed program when available.	IT/SH	Ongoing
4.1.3	Vibration Roller Testing	TWG group to be advised of results of Vibration Roller Testing scheduled to occur 22/08/19.	FCC	ASAP
5.1	KRI Lane works coordination	NW to schedule coordination session with FDC/MPX/FCC to coordinate upcoming DN's within KRI Lane and surrounds.	NW	ASAP
7.1	WIMR Pedestrian Link outstanding items	DHch noted outstanding items requiring rectification following handover of WIMR pedestrian link on 19 th August as per email to NW. NW to coordinate with MPX.	NW	ASAP
7.2	WIMR Pedestrian Link Fire Break Glass	DHch noted concerns with current fire break glass within secure area of WIMR pedestrian link and queried whether an alternative option was available. NW to confirm.	NW	ASAP
7.3	BSF Monitor	DHch asked for confirmation from ARUP that BSF Acoustic Monitor can be removed.	NW	ASAP
7.4	Shared access dry fire sensor	DHch queried whether a secondary dry fire sensor can be installed in L1 Shared Access egress path. NW to coordinate with MPX/DHch.	NW	ASAP
Meeting 88 – 8 August 2019				
3.1.2	Forecourt Noisy Works	MPX to provide forecast of upcoming noisy works within the forecourt.	MPX	Ongoing
Meeting 85 – 27 June 2019				
6.2	Storm Water Pit Debris	AK noted that the Storm Water pit outside WIMR's façade within the 'void space' next to the Loading Dock and Gas Bottle Storage, still had formwork timber within which needed to be removed. MPX are to remove the formwork and clear the pit. 22/08 update: final works occurring in the area within next 4 weeks. Will be addressed in final clean.	MPX	ASAP
Meeting 80 – 18 Apr 2019				
4.1	Contractor walkthrough	IT to arrange a contractor walk-through of Research Institutes for Ford prior to the 22 nd . 16/05 update: Sub-contractors to be given walk through of WIMR/CMRI progressively. 22/08 update: IT to organise walkthrough offline. Scheduled to occur within coming week.	IT	Ongoing

Meeting 78 – 21 Mar 2019				
6.6	Damage	Southern Façade (adjacent WIMR BSF) was recently damaged by machinery ‘bumping’ façade – Ben De-Bono advised that the wall will be patched and painted. Patching to be done once work completed.	MPX	Ongoing
Meeting 76 – 21 Feb 2019				
6.3	L1/L2 WIMR/CASB interface	DHch queried interface design for the shared access at interface of WIMR/CASB/Innovation Centre. Query raised in relation to maintenance/management of services/access. PwC to prepare documents to enable discussion with TWG. 27/06 update: Documentation is yet to be finalised & will be provided when available. 22/08 update: Documentation still outstanding. DH/TM/NWe to discuss maintenance strategy offline.	NWe/TMc	TBC

Agenda – Research Institutes’ Technical Working Group Meeting #90

Date: 5 September 2019 **Start:** 10:30 am

Venue: Westmead Institute for Medical Research

Name	Init	Role	Org
John Dakin	JD	Chief Operating Officer	WIMR
Mark Shannon	MS	Research Manager	WIMR
Rebecca Rielly	RR	Research Operations Manager	KR
Roberto Spada	RS	Facility Engineer	CMRI
Ross Matthews	RM	Research and Education Network	WSLHD
Terry Amis	TA	Assoc Director, Ludwig Engel Ctr for Resp Research	WIMR
Tim Mason	TM	Senior Project Director	HI
Tom McGregor (Chair)	TMc	Project Manager	PwC
Wayne Hawthorne	WH	Biological Services Facility & Human Apps Lab	WIMR
Andrew Johnston	AJ	IT Systems Manager	WIMR
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Anthony Toomeh	AT	Project Engineer	MPX
Danny Khal	DK	Senior Project Engineer	Ford Civil
Darren Hudson	DHud	Construction Director	PwC
Dave Hutchison	DHch	Facilities Manager	WIMR
Einion Thomas	ET	Project Manager	CMRI
Elaine Lirhung Choung	ELC	Communications Officer	KR
Ivan Tcherkashnev	IT	Project Manager	PwC
Jackson Lord	JL	Services Engineer Co-ordinator	Ford Civil
James Wright	JW	Project Director	PwC
Jane Curran	JCu	Project Manager	MPX
Kirstin Shepherd	KS	Project Coordinator	WSLHD
Laurence Cantrill	LC	Research Development Office	KR
Matthew Kan	MK	Project Manager	PwC
Mayuresh Korgaonkar	MK	Dry Laboratory Research	WIMR
Mitch Pelling	MP	Project Engineer	MPX
Naheed Wozeer	NWo	Site Engineer	MPX
Nick Weeks	NWe	Project Manager	PwC
Sarah Freeman	SF	Network Safety Manager	SCHN
Swan Htet	SH	Project Manager	PwC
Vito Pasqua	VP	Senior Site Manager	MPX

Item	Description	Action
1.0	Apologies and introductions	Chair
2.0	Previous meeting minutes acceptance & Action Log	Chair
3.0	Multiplex Update - CASB/Innovation Centre/Plaza - Linkway	MPX
4.0	Hawkesbury Road Widening Update	Ford Civil
5.0	Communications Update	Chair
6.0	Other Business	All
7.0	Next meeting – 19 September 2019, 10:30am	Note

Action Log

Meeting: Research Institutes TWG

Date: 5 September 2019

ITEM	SUBJECT	ACTION	RESP	DUE
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Meeting 78 – 21 Mar 2019				
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Appendix D: Noise & Vibration Impact Assessment

Appendix A

Extent of noise impacts for the Watermain OOHV works

Ford Civil Contracting
Hawkesbury Road Widening
Watermain Works – Noise and
Vibration Impact Statement

AC14

Rev1 | 28 October 2019

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Arup Pty Ltd ABN 18 000 966 165

Arup
Level 5
151 Clarence Street
Sydney NSW 2000
Australia
www.arup.com

ARUP

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Appendix A

Extent of noise impacts for the Watermain OOHW works

1 Introduction

Ford Civil Contracting Pty Ltd (FCC) have been engaged by Health Infrastructure on behalf of Transport for NSW to perform the Hawkesbury Rd Widening Scope of Works. As part of these works there will be works involving the connection of watermain along Hawkesbury Road between Queens Road and Hainsworth Street (Watermain works). The watermain will be installed during standard hours and outside standard hours. Works conducted during standard hours will be managed in accordance with the CNVMP. This report is to assess OOHW work only and will be appended to the OOHW protocol form to be submitted for approval.

Potential noise and vibration impacts from Watermain works have been assessed in accordance with relevant Project Approval Conditions and associated requirements for the Hawkesbury Road Widening PLR project. Predictions are for the noisiest and most vibration intensive construction activities likely to occur for the proposed works. The predictions assume activities are located at the closest point of the works zone to the nearest sensitive receivers. Extent of the noise impacts has also been assessed in accordance with the Construction Noise and Vibration Strategy (CNVS) and is included in this report in Appendix A.

Anticipated plant and equipment used during each of the scenarios is provided, together with the associated sound power levels (SWLs) which have been sourced from:

- AS2436: Guide to noise and vibration control on construction, demolition and maintenance sites
- BS 5228-1 -2009 Code of Practice for noise and vibration control on construction and open sites; and
- TfNSW Construction Noise Vibration Strategy 2018 Appendix C - Maximum noise levels for plant and equipment
- Parramatta Light Rail Stage 1 OOHW protocol PLR-TFSNW-CBD-PE-FRM-000002

Sound power data provided includes an estimated time correction of the plant and equipment use in 15 minutes. A 5 dB penalty has also been included to the sound power levels of equipment identified as particularly annoying to nearby residents in accordance with the ICNG such as use of a demo saw and excavator hammer.

2 Location of works

Proposed Watermain OOHW works are to be conducted along Hawkesbury Road between Queens Road and Hainsworth Street.

Proposed location of works is shown in Figure 1, Figure 2 and Figure 3 below.

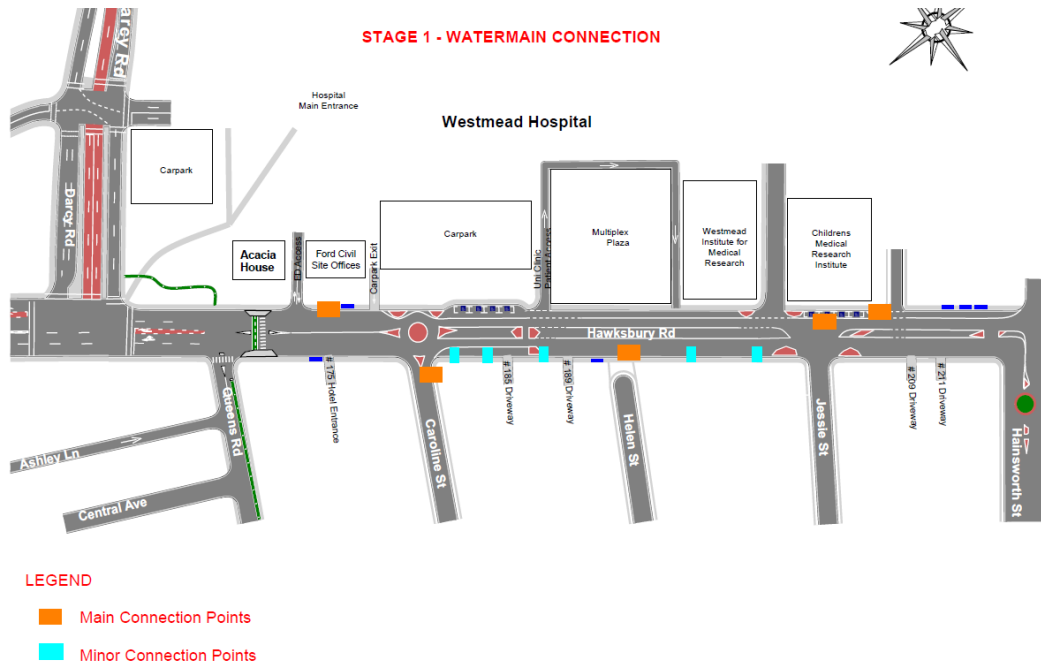


Figure 1: Proposed location of Watermain Works – Stage 1

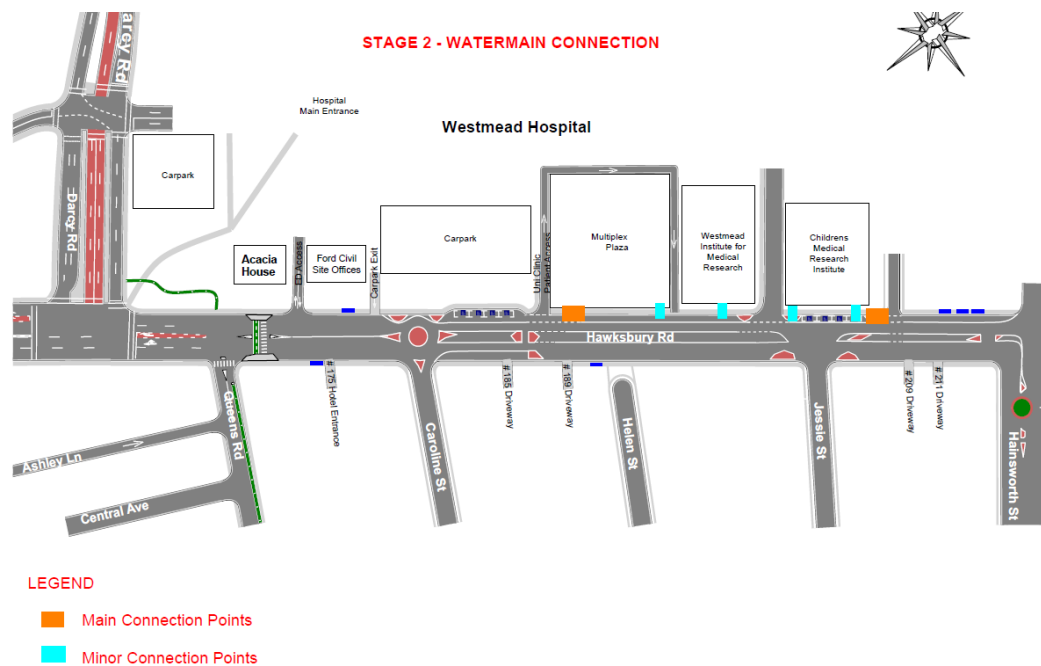


Figure 2: Proposed location of Watermain Works – Stage 2

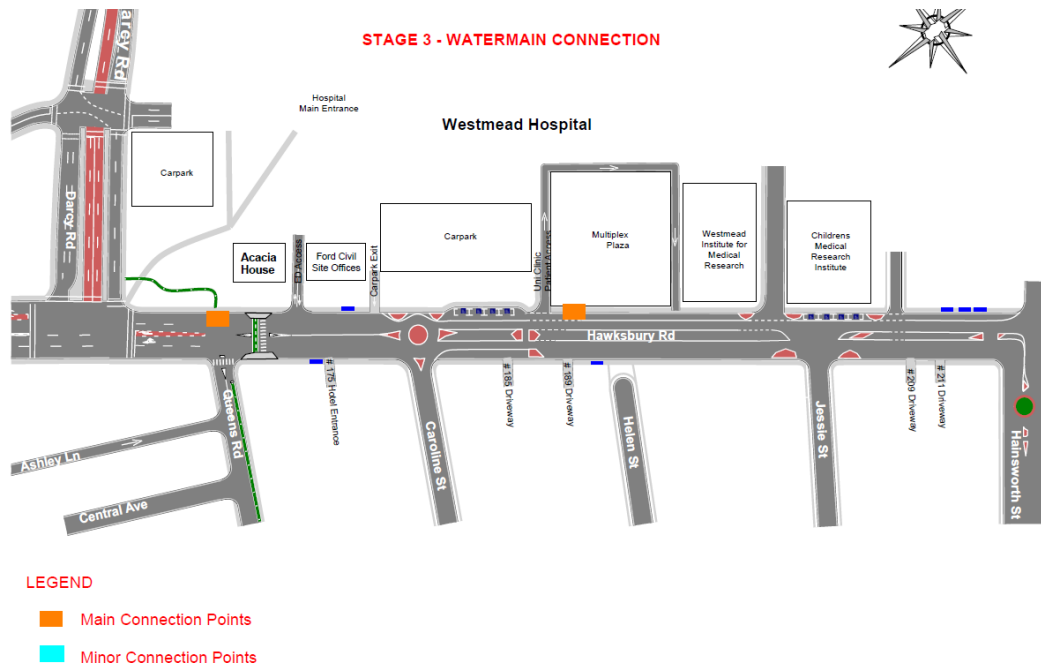


Figure 3: Proposed location of Watermain Works – Stage 3

3 OOHW application summary

3.1 CoA work period definitions

The CoA set out the following working hours, defined in CoA E21, E22 and E25 and summarised in Table 1. This application seeks approval for works in OOHW Period 1 (Evening) and OOHW Period 2 (Night).

Table 1: CoA Construction Hours

Period	Days and hours	
Standard hours	Day	Monday to Friday – 7:00 am to 7:00 pm Saturdays – 8:00 am to 6:00 pm
Standard hours Highly Noise Intensive Works ¹	Day	Monday to Friday – 8:00 am to 6:00 pm Saturdays – 8:00 am to 1:00 pm
OOHW Period 1	Day	Sundays and public holidays – 8:00 am to 6:00 pm Saturday – 7:00 am to 8:00 am
	Evening	Monday to Friday – 7:00 pm to 10:00 pm Saturday - 6:00 pm to 10:00 pm
OOHW Period 2	Evening	Sunday and public holidays - 6:00 pm to 10:00 pm
	Night	Monday to Saturday – 10:00 pm to 7:00 am Saturday to Sunday – 10:00 pm to 8:00 am
Note1: Defined in the Instrument of Approval as “Rock breaking, rock hammering, sheet piling, pile driving and any similar activity”		

3.2 OOHW application summary

This assessment is for the following proposed OOHW. Note that the connection dates are dependent on Sydney Water approval and availability to undertake the works. The length of the connection (number of nights) will also be governed by the flow management approved by Sydney Water. Pending approval from Sydney Water, anticipated works are to be conducted as follow:

Stage 1:

- Evening works to be conducted over three non-consecutive evenings (from 7 pm to 10 pm) within a week window commencing 21st October 2019 (indicative)
- Night-time works to be conducted over three non-consecutive nights (from 10 pm to 7 am) within a week window commencing 21st October 2019 (indicative)

Stage 2:

- Evening works to be conducted over one or two evenings (from 7 pm to 10 pm) within a week window commencing 28th October 2019 (indicative)
- Night-time works to be conducted over one or two nights (from 10 pm to 7 am) within a week window commencing 28th October 2019 (indicative)

Stage 3:

- Evening works to be conducted over one or two evenings (from 7 pm to 10 pm) within a week window commencing 13th January 2020 (indicative)
- Night-time works to be conducted over one or two nights (from 10 pm to 7 am) within a week window commencing 13th January 2020 (indicative)

The Contractor has advised that the scope of works for each stage can be completed within two consecutive nights in the worst instance. Irrespective of this, approval for an additional four days of contingency is sought in case of latent site conditions and unforeseen events.

In the case that contingency is required, the works can be scheduled with Sydney Water to meet the following:

- that highly noise intensive works are only carried out for no more than two consecutive nights, followed by a period of no noisy works and if require, the Contractor will come back at a later time.
- that the works are carried out for only four nights in a seven day period.

Highly noise intensive works are proposed to be conducted during evening and night-time works for Stage 1, Stage 2 and Stage 3 in accordance with the construction methodology described in Section 4.1.

Works at each connection point for HNIW during OOHW will be undertaken during a period of approximately 3 hours for each night (including reinstatement of asphalt). Nonetheless, these activities will be prioritized during OOH Period 1 to minimize extended use during OOH Period 2 as much as possible. This will minimize the amount of highly noise intensive works during OOH Period 2.

3.3 Justification

The connection point areas of work for the Watermain works (Stage 1, Stage 2 and Stage 3) are situated along Hawkesbury Road between Queens Road and Hainsworth Street.

To commission the new watermain, the existing watermain must be shut down to form the new connection. Sydney Water requires these works occur when the water usage by residents and businesses is low and residents are asleep.

The Watermain connection is anticipated to be staged over three separate connections (Stage 1, Stage 2 and Stage 3) due to flow management requirements by Sydney Water. At any time during the connection, one of the watermains must be live to maintain supply to stakeholders as required.

4 Description of works

The proposed methodology for the Watermain works is outlined below.

4.1 Proposed methodology

Watermain works will be conducted during standard construction hours and outside construction hours. The relevant methodology for this assessment, used during OOHW, is described below:

Construction Methodology (during OOHW):

1. Set up temporary traffic control as per approved TCP's
2. Sydney Water present to isolate the watermain as required.
3. Saw-cut the existing watermain at the connection point using a hand held demo saw. There may be concrete thrust blocks present over the existing watermain which will need to be jack hammered using a 5T excavator hammer (rock breaker).
4. Installation on the new watermain section and connection into the existing. This will involve cutting pipe and potentially welding.
5. Installation of concrete thrust blocks as required by Sydney Water.
6. Backfill with stabilised sand – does not require heavy compaction and vibration. Use of a small plate compactor ~ 40-60 kg.
7. Re-instate road or footpath with asphalt. Use of asphalt truck and 2t roller.
8. Remove plant from site and re-open road.

Note that saw cutting of pavement, removal of pavement, potholing and excavation to watermain will be conducted during standard construction hours.

It is anticipated that up to two crews will be operating concurrently at two locations. The majority of the highly noise intensive works will be scheduled during the evening and early hours of the night as much as possible depending on Sydney Water. This is to minimize potential for sleep disturbance. It is anticipated that up to 3 hours of highly noise intensive works will be conducted at any one connection point area of work.

Outside standard hours works (Refer to Table 1)

Works conducted outside standard hours are as follows (dates to be confirmed pending approval from Sydney Water):

Note that the 9pm used below is based on Sydney Water's feedback regarding live isolation only occurring during low usage hours. The OOHW application however, captures a 7pm to 7am time period in the case that Sydney Water allows isolation works to be earlier than 9pm.

Stage 1:

- Evening works to be conducted over three evenings (from 9 pm to 10 pm) within a week window commencing 21st October 2019 (indicative)

- Night-time works to be conducted over three nights (from 10 pm to 6 am) during a week window commencing 21st October 2019 (indicative)

Stage 2:

- Evening works to be conducted over one or two evenings (from 9 pm to 10 pm) during week days commencing 28th October 2019 (indicative)
- Night-time works to be conducted over one or two nights (from 10 pm to 6 am) during week days commencing 28th October 2019 (indicative)

Stage 3:

- Evening works to be conducted over one or two evenings (from 9 pm to 10pm) during week days commencing 13th January 2020 (indicative)
- Night-time works to be conducted over one or two nights (from 10 pm to 6 am) during week days commencing 13th January 2020 (indicative)

Those works include the use of highly noise intensive equipment as per methodology described above.

Contingency

Approval for an additional four days of contingency is also sought in case of latent site conditions and unforeseen events.

In the case that contingency is required, the works can be scheduled with Sydney Water to meet the following:

- that highly noise intensive works are only carried out for no more than two consecutive nights, followed by a period of no noisy works and if required, the Contractor will come back at a later time.
- that the works are carried out for only four nights in a seven day period.

4.1.1 Use of site Compounds

The compounds and their use are described in Table 2.

Table 2 Site compounds and their use

Sites	Description
Hawkesbury Road compound (CP4)	The Hawkesbury Road compound (CP4) consists of site offices, staff welfare facilities and a shed for tool storage. Ford Civil will only use their existing CP4 compound for daily pre-starts and to use welfare amenities (lunch rooms and toilets). The offices and welfare facilities will be operational during both standard hours and out of hours as required. This will be managed through the OOWH Protocol Form (E28). There will be no construction material deliveries at the CP4.

Sites	Description
Mons Road Compound	The compound at Mons Road will be used for delivery of materials and plant during standard hours and will also be used as a temporary stockpile location during the Watermain works OOHW.

4.2 Receptor locations

The proposed Watermain works are located along Hawkesbury Road from Queens Road to Hainsworth Street and nearest sensitive receivers to the works are mostly residential to the east of Hawkesbury Road and mostly hospitals to the west of Hawkesbury Road. Closest residential receivers to the construction site is located approximately 15 m away. Closest hospital receivers to the construction site is located approximately 5 m away.

Closest receivers from the Mons Road compound are residential high-rise apartments on the opposite side of Mons Road (32-34 Mons Road) located approximately 25 m from the Mons Road compound.

5 Noise Assessment

5.1 Watermain Works

Works conducted during standard hours will be managed in accordance with the CNVMP. This assessment is for OOHV work as described in Section 3. OOHV works are assessed in accordance with Consent conditions and OOHV protocol.

Table 3 presents a noise assessment of the proposed Watermain works upon the nearest most potentially affected sensitive receivers.

Table 3 outlines assessment for the primary works activities and assessment impact against criteria established in accordance with the *NSW Interim Construction Noise Guideline* (ICNG) and based on noise monitoring results presented in the EIS and in accordance with CoAs.

Appendix A shows the predicted maximum extent of noise impacts in accordance with CNVIS. The modelling does not account for shielding provided by the first row of receivers (intervening buildings) to the receivers located behind. The extent of the impact is therefore, conservative. In practice, this extent will be less.

Table 3: Construction Noise Assessment – Watermain OOHW Works

Scenario Description ³	Anticipated plant and equipment required	Max LAeq Sound Power Level of equipment	% of use in 15 minutes	LAeq (15min) Sound Power Level - dBA	Receiver - Distance receiver to site (closest receiver to site)	Predicted LAeq(15minute) - dBA	Criteria LAeq(15minute)				Respite periods required?
							Noise Affected during OOHW period 1 (Evening) ² - dBA	Noise Affected during OOHW period 2 (Night-time) ² - dBA	Highly noise affected - dBA	Trigger for respite period during OOHW Period 2	
Sucker truck	Daymaker	98	100	109	Residential (Hawkesbury Rd) 15m-278m	78-52	53	52	75	65	Yes
	Sucker truck	109	100		Hospital 5m-435m	87-48	65	65	75	N/A	
Jack hammering of concrete thrust blocks	Daymaker	98	100	121	Residential (Hawkesbury Rd) 15m-278m	89-64	53	52	75	65	Yes
	5-8T excavator hammer (Rock Breaker) ⁴	122 (127 ¹)	25		Hospital 5m-435m	99-60	65	65	75	N/A	
	Power tools (grinder) ¹	105 (110 ¹)	25								
Saw cutting of existing watermain	Daymaker	98	100	121	Residential (Hawkesbury Rd) 15m-278m	89-64	53	52	75	65	Yes
	Saw cutting 5-8t excavator	118 (123 ¹) 115	50 50		Hospital 5m-435m	99-60	65	65	75	N/A	
Installation of new watermain (Pipe cutting + Welding)	Daymaker	98	100	118	Residential (Hawkesbury Rd) 15m-278m	87-61	53	52	75	65	Yes
	5-8T excavator Saw cutting Welder	115 118 (123 ¹) 110	50 25 25		Hospital 5m-435m	96-58	65	65	75	N/A	
Installation of concrete thrust blocks	Daymaker	98	100	109	Residential (Hawkesbury Rd) 15m-278m	78-52	53	52	75	65	Yes
	Concrete truck	109	100		Hospital 5m-435m	87-48	65	65	75	N/A	
Compaction	Daymaker	98	100	107	Residential (Hawkesbury Rd) 15m-278m	75-50	53	52	75	65	Yes
	40-60kg compactor	106	100		Hospital 5m-435m	85-46	65	65	75	N/A	
Reinstatement of trench (1)	Daymaker	98	100	107	Residential (Hawkesbury Rd) 15m-278m	75-50	53	52	75	65	Yes
	Asphalt truck	106	100		Hospital 5m-435m	85-46	65	65	75	N/A	
Reinstatement of trench (2)	Daymaker	98	100	109	Residential (Hawkesbury Rd) 15m-278m	78-52	53	52	75	65	Yes
	2t roller	107 ¹ (112)	50		Hospital 5m-435m	87-48	65	65	75	N/A	

Note 1: Includes a 5 dB penalty

Note 2: As per Table 1

Note 3: All scenarios in table maybe conducted during OOHW Period 1 and OOHW Period 2 – 7pm to 7am due to potential to conduct some of the works during Standard Construction Hours

Note 4: A handheld Jackhammer might be used for detailed hammering of concrete instead of a excavator hammer. The use of a handheld jackhammer is approximately 8dBA quieter – for the same duration to do the works as the Rock Breaker.

Type of respite periods are defined in CoA E27, E36 and E37 and are summarised below in Table 4. OOHW to be conducted in accordance with the OOHW protocol.

Table 4: Respite periods

Equipment Type/works	Trigger level	Time period	Respite definition	CoA
Highly noise intensive works (defined as Rock breaking, rock hammering, sheet piling, pile driving and any similar activity)	When exceed NML	Standard Hours	Works to be undertaken in continuous blocks not exceeding three (3) hours each with a minimum respite from those activities and works of not less than one (1) hour between each block.	E27
Any construction activity (noise sources other than listed above)	When exceed the Highly Noise Affected Level of 75 dBA LAeq(15minute)	Standard Hours	Not defined	E36
Any construction activity (other noise sources listed above)	When exceed 65 dBA LAeq(15minute) at the façade of the building of a residential receiver	OOHW Period 2	The proponent must only work 4 nights in any 7 day period. The 4 nights worked must be informed by community consultation (E39)	E37

Extent of predicted noise impacts have been assessed based on Table 3 for the activities to be conducted during OOHW period 1 (evening) and OOHW period 2 (night-time) with reference to Table 9 of the Construction Noise and Vibration Strategy (CNVS). Extent of noise impacts for the Watermain OOHW Works for the worst case scenario (saw cutting of existing watermain and jack hammering of concrete thrust blocks) for Stage 1, Stage 2 and Stage 3 are shown in Appendix A. Appendix A should be read in conjunction with the “Additional Management Measures” in Figure 4.

As described in Section 3, there will be up to two crews working concurrently. Cumulative impacts due to works being undertaken concurrently has not been included. While Figure 1, Figure 2 and Figure 3 shows each connection point area where works need to be conducted it is unknown what connection point areas of work will be conducted concurrently.

While predictions are based on worst-case nearest distances, the influence of cumulative works has the potential to increase predicted noise levels by up to 3 dBA if works are conducted in connection point areas located next to each other. However, this will not alter the mitigation and management responses for the Watermain OOHW Works as those works already trigger all mitigation and management measures feasible and reasonable (as per Table 9-1 of the CNVMP and CNVS) and also because the assessment is already conservative.

Relevant extract from the CNVS is given in Figure 4.

Figure 4 Extract from the CNVS – Receiver perception and management measures based on exceedances of MNLs.

Construction hours	Receiver perception	dB(A) above RBL*	dB(A) above ANML	Additional management measures
Standard Hours Monday-Friday (7am-6pm) Saturday (8am-1pm)	Noticeable	5 to 10	0	-
	Clearly Audible	> 10 to 20	< 10	-
	Moderately intrusive	> 20 to 30	> 10 to 20	PN, V
	Highly intrusive	> 30	> 20	PN, V
	75dBA or greater	N/A	N/A	PN, V, SN
OOHW Period 1 Monday-Friday 6pm-10pm Saturday (7am-8am, 1pm-10pm) Sunday/PH (8am-6pm)	Noticeable	5 to 10	< 5	-
	Clearly Audible	> 10 to 20	5 to 15	PN
	Moderately intrusive	> 20 to 30	> 15 to 25	PN, V, SN, RO
	Highly intrusive	> 30	> 25	PN, V, SN, RO, RP#, DR#
OOHW Period 2 Monday-Saturday (12am-7am, 10pm-12am) Sunday/PH (12am-8am, 6pm-12am)	Noticeable	0 to 10	< 5	PN
	Clearly Audible	> 10 to 20	5 to 15	PN, V
	Moderately intrusive	> 20 to 30	> 15 to 25	PN, V, SN, RP, DR
	Highly intrusive	> 30	> 25	PN, V, SN, AA, RP, DR

Notes: PN = Project notification
V = Verification monitoring
RP = Respite Period
AA = Alternative accommodation
SN = Specific notification, individual briefings, or phone call
DR = Duration Reduction
RO = Project specific respite offer

Note that:

- Table 3 does not include any attenuation due to noise mats.
- the noise impacts in Appendix A have been established based on NCA 4 NMLs. No shielding has been accounted for in this assessment to receivers located behind first row of receivers directly facing the works and therefore the extend of impact in Appendix A is conservative. In practice, it is likely that the extend of the noise impacts will be less.
- standard hours in CoA prevail to standard hours defined in CNVS.

In accordance with the assessment conducted above and the OOHW protocol, the proposed OOHW to be conducted during OOHW period 1 and OOHW period 2 are considered to be high risk of impacts due to highly noise intensive works to be conducted during the night-time. Mitigation and management measures described in Table 9-1 of the CNVMP have already been put in place and minimised potential impact by site planning and methodology of construction. In addition, mitigation measures in Section 8 will be put in place.

5.2 Site Compounds

5.2.1 Hawkesbury Rd

Noise emissions from the Hawkesbury Rd compound area to be utilised during the Watermain OOHV works would be limited to people conversing if located in the external areas or a car arriving to drop off staff, for which recommendations regarding behaviour of staff are outlined in the summary of mitigation measures in Table 9-1 of CNVMP (refer to Work Practices section in particular). This compound activity will not be different to that occurring on a daily basis on Hawkesbury Road (non-construction vehicle movements and conversations between people). Accordingly, conditions regarding noise screening in the form of solid barriers around the area is not considered to be warranted for the compound use specifically. During OOHV, staff should be made aware of appropriate behaviour to be followed such as no swearing or unnecessary shouting or use of stereos.

5.2.2 Mons Road

Mons road compound will be used as a stockpile during the Watermain OOHV works. An excavator will be used to load pipes and other materials onto trucks to take to construction sites. Activities at the Mons Road compound will be intermittent.

Table 3 presents a noise assessment of the proposed use of the Mons Road during Watermain OOHV works upon the nearest most potentially affected sensitive receivers.

Table 5: Construction Noise Assessment – Mons Road – Watermain OOHW works

Scenario Description ³	Anticipated plant and equipment required	Max LAeq Sound Power Level of equipment	% of use in 15 minutes	LAeq (15minutes) Sound Power Level - dBA	Receiver - Distance receiver to site (closest receiver to site)	Predicted LAeq(15minute) - dBA	Criteria LAeq(15minute)				Respite periods required?
							Noise Affected during OOHW period 1 (Evening) ² - dBA	Noise Affected during OOHW period 2 (Night-time) ² - dBA	Highly noise affected - dBA	Trigger for respite period during OOHW Period 2	
Stockpile	5-8T excavator 2-4t tipper	115 103	15 25	107	32-34 Mons Rd (Residential)	61-71	53	52	75	65	N/A

Note that respite periods are not considered due to the intermittent use of the Mons Road Compound.

Mitigation and management measures described in Table 9-1 of the CNVMP shall be implemented such as:

- Plan traffic flow, parking and loading/unloading areas to minimise reversing movements and idling traffic within the site.
- Vehicles, shall not queue idling in front of residential apartments to await entry into the compound
- A project notification to all receivers along Mons Road and facing Mons Road shall be issued.
- Stockpiling of material will be carried out near the work areas on Hawkesbury Road to minimize trips to the Mons Road compound when possible

6 Construction traffic

Construction traffic generated from Watermain OOHW Works is anticipated to be low and NSW EPA Road Noise Policy criteria will not be exceeded.

Construction traffic volumes generated from Watermain OOHW Works is anticipated to be low between the Hawkesbury Road Works and compound and noise levels from construction traffic vehicles are not expected to exceed the RNP criteria.

7 Vibration Assessment

7.1 Sensitive laboratories and medical spaces

Figure 5 defines the Hawksbury Road Widening Works construction area into four zones relating to their distance from sensitive spaces and the sensitivity of those spaces. These zones are defined as:

- **Zone A:** 0-25 m from facilities with highly sensitive microscopy lab (VC-C /VC-B)
- **Zone B:** 25-50 m from facilities with highly sensitive microscopy lab (VC-C /VC-B)
- **Zone C:** 50-80 m from facilities with highly sensitive microscopy lab (VC-C /VC-B)
- **Zone D:** >80 m from facilities with highly sensitive microscopy lab (VC-C /VC-B) and >50 m from facilities with criterion of AS2670.2 Curve 1 and above such as the Biological Science Facility Laboratories and sensitive equipment within Westmead Adult Hospital.

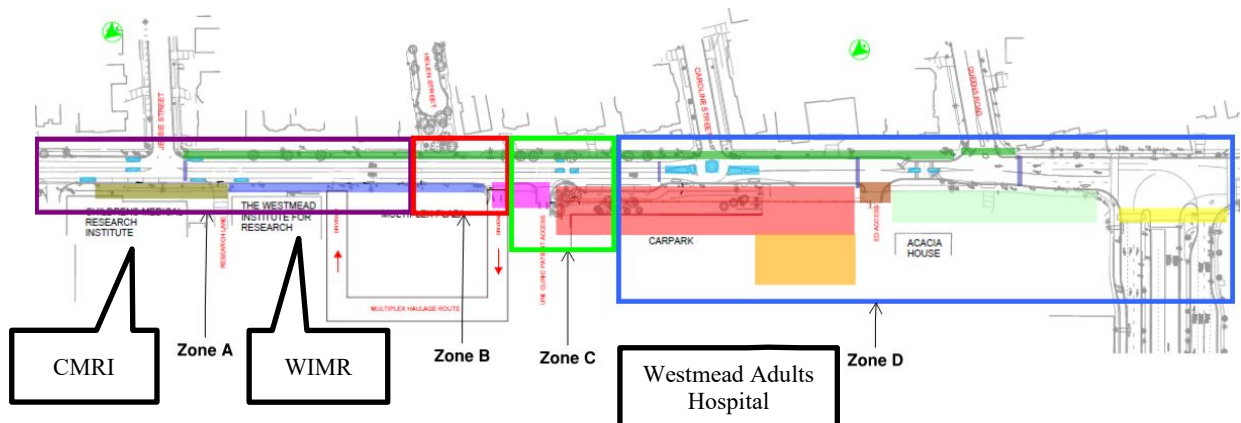


Figure 5: Construction activity zones proposed to manage vibration impact on sensitive medical and laboratory spaces

Watermain Works are proposed to be conducted in Zone A, Zone B, Zone C and Zone D.

Table 6 presents the potential risks of construction activity exceeding vibration criteria for sensitive laboratory and medical spaces when undertaken in the proposed construction activity zones defined above.

Table 6: Watermain Works - Vibration Equipment Assessment – Zones and potential risks

Equipment	Zone A	Zone B	Zone C	Zone D
Jumping jack & Plate compactor	H	H	H	H
Excavator hammer (5-8t)	H	H	M	L
Non vibratory: chain saw, stump grinder, non-destructive excavator	L	L	L	L

The following measures are already put in place or are considered for all works undertaken for the Hawkesbury Road works to mitigate vibration impacts.

Table 7: Methodology to Reduce Vibration

Activity	Vibration management
Planning	- FCC established a clear management process and communication pathway to allow swift action to be taken to resolve any vibration issues within surrounding buildings. - Noise and vibration monitors are in place within the Hospitals and will send SMS notifications to FCC, PWC and affected stakeholders if criteria are exceeded. Work will stop and be re-evaluated if exceeded. This same monitoring was in place for CASB works during the demolition of the car park next to WIMR and construction of the CASB building and for minor works. Works have been successfully completed. - The construction team undertook noise and vibration walk-throughs with hospital and research stakeholders and is aware of the sensitive nature of the surrounding facilities, the monitoring in place and actions should the monitors be triggered - Toolbox talks will focus on the sensitive vibration locations and work practices to reduce vibration - FCC will comply with best practice by using lower vibration equipment - in general smaller equipment, non-vibratory equipment results in lower vibration or equipment that operates higher frequency will result in lower vibrations
Excavation	- Lower vibration techniques such as ripping rather than a hammer will be used to loosen the material - Best practice will be employed by the excavator operator and prevent banging the ground with the excavator bucket, dropping panels or material etc.
Ground Compaction	- Small compactors which will be used for lower vibration or higher frequency vibratory compaction - Stabilised sand will be used to reduce compaction
Concrete pavement reinstatement	The concrete pavement will be reinstated to a safe standard.

7.2 Other sensitive receivers

Extract of the recommended minimum working distances for typical vibration intensive plant as defined in the *Construction Noise and Vibration Guideline* (CNVG) is shown in Table 8 including the relevant equipment for the Watermain OOHV works.

Table 8: Watermain OOHV works - Vibration Equipment Assessment - recommended minimum working distances for vibration intensive plant

Plant Item	Minimum Working Distance	
	Cosmetic Damage (BS 7385)	Human Response (NSW EPA Vibration Guideline)
Small Hydraulic Hammer (300 kg - 5 to 12t excavator)	2 m	7 m
Vibratory roller 2t	6 m	20 m
Jackhammer (hand held)	1 m (nominal)	2 m
Heavy Site Traffic	2 m	2 m
Jumping Jack and plate compactor	5 m	55 m

Mitigation and management measures in Table 9-1 of the CNVMP are and will be implemented and potential impact are minimised by site planning and methodology of construction.

Based on the table above, cosmetic damage criteria would have the potential to be exceeded when works are located within 5 to 6 m of a building; which would trigger the need for vibration monitoring.

Based on indicative locations of the connection points in Figure 1, Figure 2 and Figure 3, and discussions with FCC, works were identified as being conducted no less than 15 m away from any residential buildings and potentially within 5 m of CMRI and WMIR.

Based on Table above, while CMRI and WMIR buildings are potentially located within 5 m of a connection point area of work, vibration monitoring is not recommended as vibration monitors are already installed within the CMRI and WMIR buildings with more sensitive triggers in place. Compliance with the criteria for the vibration monitors within CMRI and WMIR will result in compliance of the cosmetic damage criteria.

Based on Table above, all residences are located further away from the minimum working distance and therefore vibration monitoring is not considered to be warranted.

Human comfort criterion is predicted to be exceeded during those works when the 2t roller and when the plate compactor are in use. Impacts are predicted onto receivers located within the 55 m zone from a connection point area of work. Vibration is likely to be noticed more during OOHV Period 2 (night-time) and has the potential to contribute to sleep disturbance.

Active communication with potentially affected receivers will be put in place as per Appendix C Community Consultation and Section 8.

Vibration intensive work is not proposed within the Mons Road compound and therefore no vibration monitoring is considered to be warranted for the buildings in Mons Road.

8 Discussion and recommendations

Nearest residential receivers and nearest non-residential receivers adjacent to the Watermain OOHW works will fall into the noise affected category and the highly noise affected category during both the OOHW Period 1 and the OOHW Period 2.

Vibration generating equipment is proposed to be used for those works.

Noise impacts are predicted to exceed the NMLs and vibration generating equipment is proposed to be used during evening and night-time (OOHW Period 1 and OOHW Period 2). While construction impacts from the Watermain Works in accordance with the Consent conditions and OOHW protocol are considered to be **high risk** of impacts, all mitigations measures as described in Table 9-1 of the CNVMP as well as mitigation measures below will be put in place:

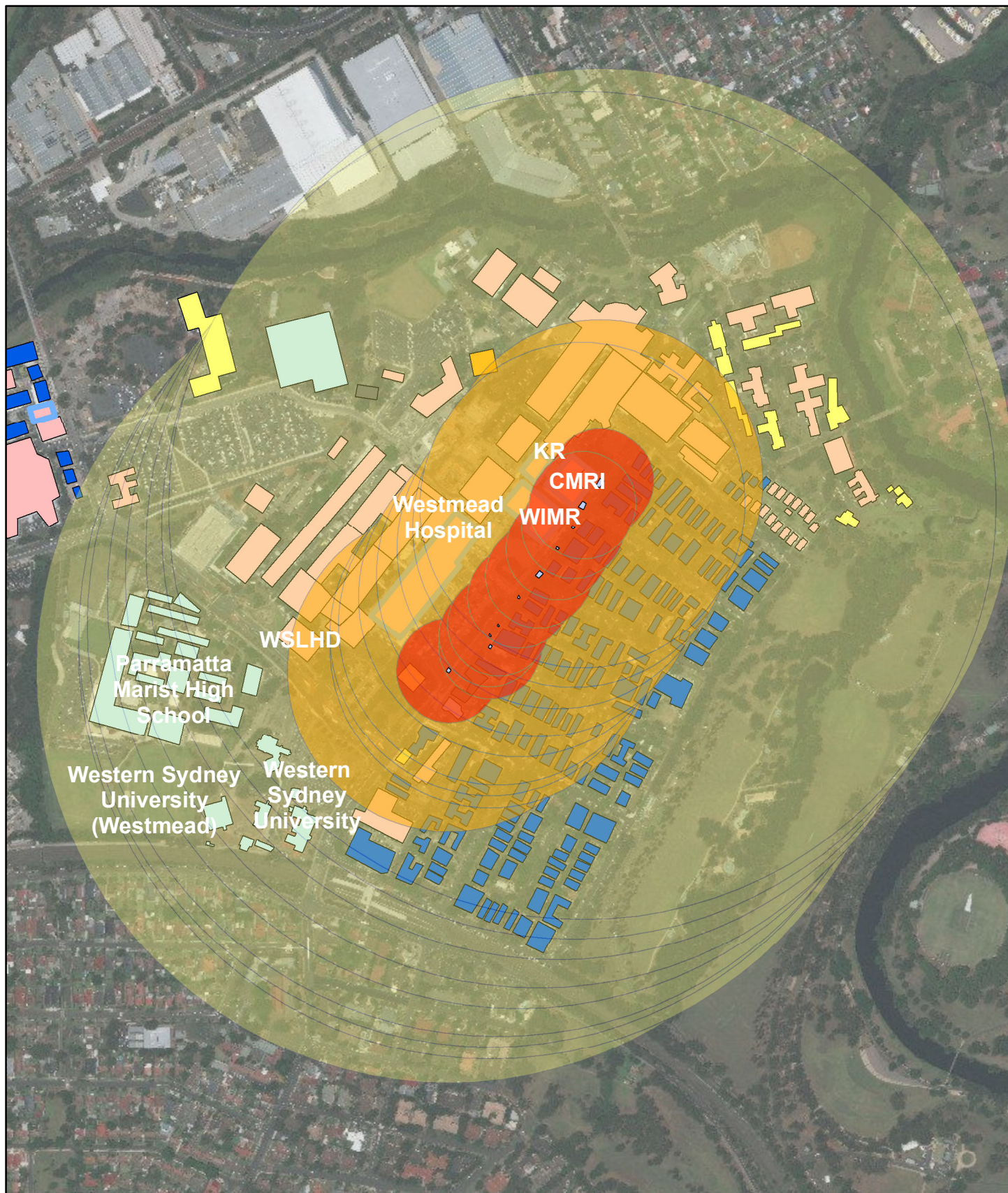
- Methodology has been established to complete as much as possible of construction activities during standard hours where possible to minimise work conducted during OOHW (for example but not limited to; use temporary trench plates during OOHW and undertake full reinstatement activities during standard hours) while highly noise intensive work that need to be conducted outside standard hours will be scheduled during the evening and early hours of the night as much as possible to minimise noise and vibration impacts and sleep disturbance.
- For proposed evening/night-time works: the proponent must only work 4 nights in any 7 day period – This has already been scheduled and maximum evening/night-time works proposed are 3 evenings/nights during one week.
- While Appendix A and Figure 4 shows that closest receivers within the highly intrusive zone during night-time works would trigger offer of alternative accommodation, alternative accommodation is not recommended because of the short duration of the works (3 non-consecutive evening/nights within a week window, then up to 2 evenings/nights within the following week, then up to 2 evening/nights 2 months later)
 - While alternative accommodation is not considered to be warranted, the project management team will closely monitor feedback from community during the first night of works and provide alternative accommodation if required.
 - The Contractor will coordinate with Sydney Water to ensure highly noise intensive works are not conducted for more than two consecutive nights and that if contingency is required, works will be conducted in a way to come back a few nights afterwards.
- Respite periods in the form of 1 hour break to be implemented in between continuous blocks of works of 3 hours during evening/night-time works:
 - this will already be implemented due to the construction method which alternate between activities (Jackhammering of concrete thrust blocks, saw cutting of existing watermain, installation of new watermain, installation of concrete thrust blocks, compaction, reinstatement of trench).

- Furthermore, highly noise intensive work will be scheduled during the evening and early hours of the night as much as possible depending on permissible hours from Sydney Water. It is anticipated that up to 3 hours of highly noise intensive works will be conducted at any one connection point area of work.
- Because 2 crews will be operating concurrently, respite periods will be coordinated
- works will be coordinated to minimise impact at any one receiver in terms of duration of work where practicable (Refer to Appendix A).
It is anticipated that up to 3 hours of highly noise intensive works will be conducted at any one connection point area of work throughout the night with the majority of those works conducted during evening/early hours of the night.
- Installation of noise mats on the fencing barriers around connection point areas of work will be implemented to all connection point areas of work
- Noise and vibration monitoring equipment is installed and operational at identified sensitive locations (in the WMIR building, the CMRI building and the Westmead Adults Hospital). The noise and vibration equipment is capable of sending immediate exceedance alerts to relevant site staff via email/SMS or visual/audible warning and a protocol is in place to stop work and assess if noise and vibration criteria are exceeded - equipment usage, mitigation and management measures are then reviewed. Monthly monitoring data is also issued to TfNSW to further circulate with relevant personnel.
- Methods to reduce or deal with vibration impacts are put in place (refer to Table 7 and Table 9-1 of the CNVMP) such as use of low vibration generating techniques such as use of small excavator hammer and low vibration equipment for compaction
- Best behavioural practice will be implemented such as:
 - No swearing or unnecessary shouting or loud stereos/radios onsite.
 - No dropping of materials from height, throwing of metal items and slamming of doors
 - Regularly train workers and contractors (such as at toolbox talks) to use equipment in ways to minimise noise.
 - Consideration shall be given to driver behaviours
- No construction-based activity is to occur in the Hawkesbury Road site compound
- Stockpiling of material will be carried out near the work areas on Hawkesbury Road to minimize trips to the Mons Road compound when possible
- Plant and equipment used intermittently is to be throttled down or shut down when not in use.
- Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used onsite and for any out-of-hours work.

- Plan traffic flow, parking and loading/unloading areas to minimise reversing movements and idling traffic within the site.
- Vehicles, shall not queue idling in front of residential apartments to await entry into the Mons Rd compound.
- Directing noise away from residents and businesses where it is possible to do so.
- Active community consultation will be conducted with nearby sensitive receivers as described in Appendix C Community Consultation.
- A project notification to all receivers located within the highly intrusive, moderately intrusive and clearly audible zones shall be issued.
- The project notifications can be supplemented with door knocking to the receivers directly facing the works.
- Methodology to reduce vibration is in place as per Table 7

Appendix A

Extent of noise impacts for the Watermain OOHV works



Legend

Buildings

- Residential
- Commercial
- Place of Worship
- Medical
- Educational
- Hotels
- Childcare Centre
- Tribunal

OOHW Period 2 (Night) Saw cutting activities

- Watermain Stage 1
- Highly intrusive (>25 dBA above NML as per CNVS)
- Moderately intrusive (>15 to 25 dBA as per CNVS)
- Clearly audible (>5 to 15 dBA as per CNVS)

Sensitive Equipment Locations

- KR Kids Research Institute
- CMRI Children's Medical Research Institute
- WIMR Westmead Institute of Medical Research



Client

Job Title

Hawkesbury Road Widening

Figure Title

Watermain Works

Metres

0 25 50 75 100

D1	20/08/2019	CN	CT	BC
Issue	Date	By	Chkd	Appd

ARUP

Level 5, 151 Clarence Street
PO Box 76 Millers Point
Sydney, NSW 2000
Tel +61 (2)9320 9320 Fax +61 (2)9320 9321
www.arup.com

Scale at A4

1:8,000

Figure Status

Draft 1

Coordinate System

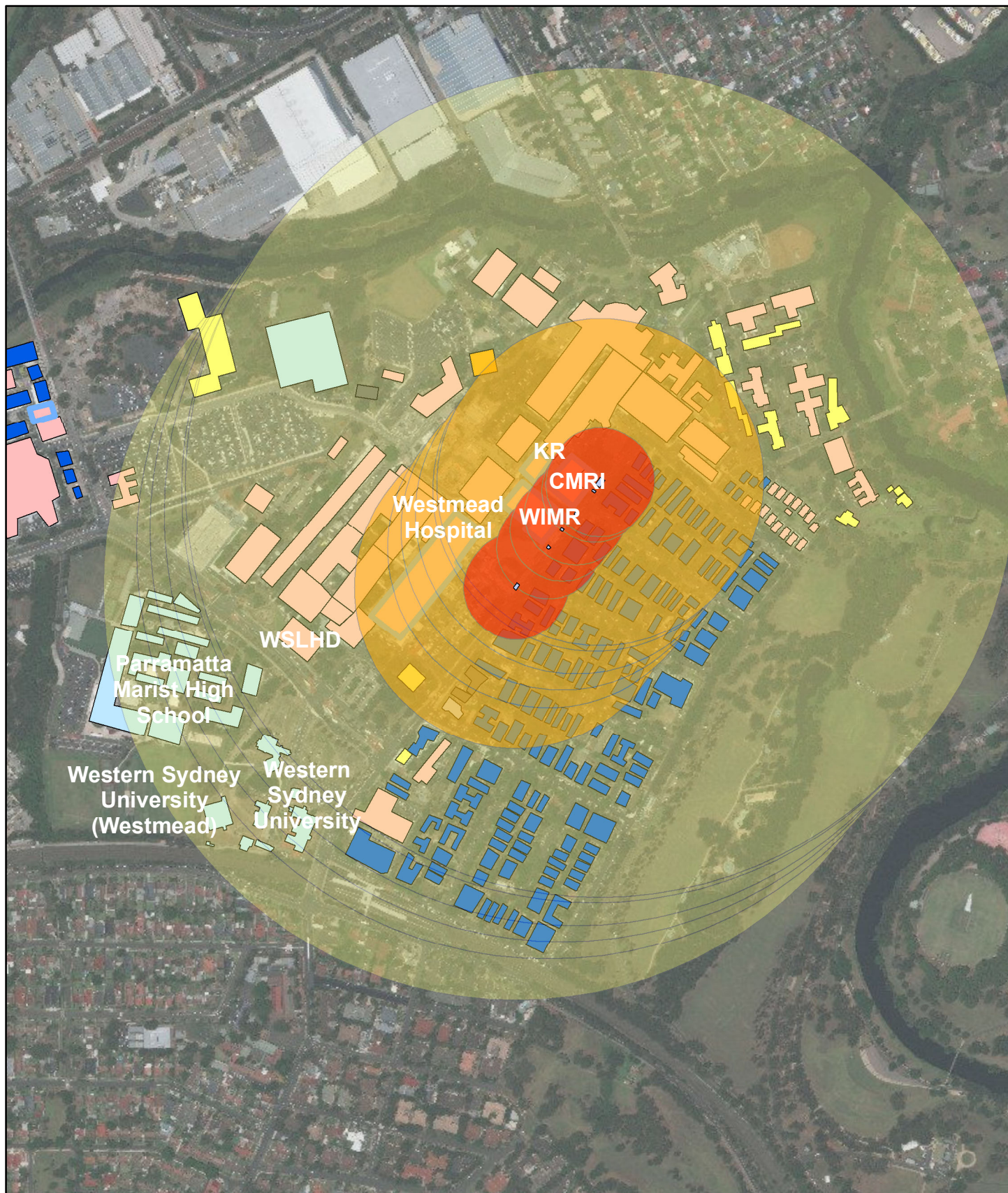
GDA 1994 MGA Zone 56

Job No

236482-00

Figure No

TBC



Legend

Buildings

- Residential
- Commercial
- Place of Worship
- Medical
- Educational
- Hotels
- Childcare Centre
- Tribunal

OOHW Period 2 (Night) Saw cutting activities

- Watermain Stage 2
- Highly intrusive (>25 dBA above NML as per CNVS)
- Moderately intrusive (>15 to 25 dBA as per CNVS)
- Clearly audible (>5 to 15 dBA as per CNVS)

Sensitive Equipment Locations

- KR Kids Research Institute
- CMRI Children's Medical Research Institute
- WIMR Westmead Institute of Medical Research

Client

Job Title

Hawkesbury Road Widening

Figure Title

Watermain Works

Metres

0 25 50 75 100

D1	20/08/2019	CN	CT	BC
Issue	Date	By	Chkd	Appd

ARUP

Level 5, 151 Clarence Street
PO Box 76 Millers Point
Sydney, NSW 2000
Tel +61 (2)9320 9320 Fax +61 (2)9320 9321
www.arup.com

Scale at A4	Figure Status
1:8,000	Draft 1
Coordinate System	
GDA 1994 MGA Zone 56	
Job No	Figure No
236482-00	TBC



Legend

Buildings

- Residential
- Commercial
- Place of Worship
- Medical
- Educational
- Hotels
- Childcare Centre
- Tribunal

OOHW Period 2 (Night) Saw cutting activities

- Watermain Stage 3
- Highly intrusive (>25 dBA above NML as per CNVS)
- Moderately intrusive (>15 to 25 dBA as per CNVS)
- Clearly audible (>5 to 15 dBA as per CNVS)

Sensitive Equipment Locations

- KR Kids Research Institute
- CMRI Children's Medical Research Institute
- WIMR Westmead Institute of Medical Research

Client

Job Title

Hawkesbury Road Widening

Figure Title

Watermain Works

Metres

0 25 50 75 100

D1	20/08/2019	CN	CT	BC
Issue	Date	By	Chkd	Appd

ARUP

Level 5, 151 Clarence Street
PO Box 76 Millers Point
Sydney, NSW 2000
Tel +61 (2)9320 9320 Fax +61 (2)9320 9321
www.arup.com

Scale at A4	Figure Status
1:8,000	Draft 1
Coordinate System	
GDA 1994 MGA Zone 56	
Job No	Figure No
236482-00	TBC

Appendix E: CoA Addressed

Planning Condition	Description	How Addressed
E8	The Proponent must maintain access to all properties during construction and operation, unless otherwise agreed by the relevant property owner or occupier, and reinstate any access physically affected by the CSSI to at least an equivalent standard at no cost to the property owner, unless otherwise agreed with the property owner. The Proponent must provide copies of plans to the Secretary on request.	Addressed in PLR-HAC-HRW-PE-PLN-000002 – Revision 2 : Traffic, Transport and Access Management Sub-Plan
E9	Access plans must be prepared and implemented for individual properties and accesses that will be impacted by construction and operation of the CSSI. The access plans must be developed in consultation with affected parties (property owner and/or occupier, as relevant) and the Proponent must make reasonable endeavours to obtain agreement from the relevant affected parties, and evidence of consultation demonstrating this must be provided to the Secretary on request. The access plans must establish: (a) road and access closures and provision of alternative routes; (b) provision for pedestrian and cyclist access; (c) special event strategies; (d) provision of servicing and delivery requirements for loading zones and waste disposal; (e) access periods or alternative access arrangements for businesses, landowners or tenants affected by the CSSI; (f) strategies to maintain emergency and incident response access at all times; (g) potential future access strategies for the Westmead Hospital and Westmead Railway Station; and (h) Access to taxi ranks and loading zones.	- Ford Civil to determine individual properties impacted by Sydney Water Main works. - HRW Communications Manager to do doorknock and letterbox drop to notify affected parties.

E12	Safe pedestrian and cyclist access must be maintained around work sites during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, an alternate equivalent route which complies with the relevant standards must be provided and signposted.	Addressed in PLR-HAC-HRW-PE-PLN-000010 Revision 2 – Pedestrian and Cyclist Network and Facilities Strategy.
E15	The Proponent must maintain emergency vehicle access, in consultation with emergency services and NSW Health, to Westmead Hospital (along Hawkesbury Road) and between the two parts of the Cumberland Hospital site as long as patients continue to be located at each facility at all times throughout the life of the CSSI. Measures must be outlined in the relevant access plan required under Condition E9.	Addressed in PLR-HAC-HRW-PE-PLN-000002 – Revision 2 : Traffic, Transport and Access Management Sub-Plan
E16	During works, the Proponent must ensure all practicable measures are implemented to maintain pedestrian and vehicular access to, and parking near, businesses and affected properties.	Addressed in PLR-HAC-HRW-PE-PLN-000002 – Revision 2 : Traffic, Transport and Access Management Sub-Plan
E17	Alternative pedestrian and vehicular access, and servicing arrangements must be developed in consultation with affected businesses and implemented before the disruption. Adequate wayfinding to businesses must be provided before, and for the duration of, any disruption in consultation with the Relevant Council(s) and/or road authority and as outlined in the Business Activation Plan required by Condition E110. The Proponent must make reasonable endeavours to obtain agreement from the relevant affected parties, and evidence of consultation demonstrating this must be provided to the Secretary on request. If access is not deemed to be adequate by the affected business and a dispute ensues, procedures and mechanisms must be followed in accordance with Condition B2.	Addressed in PLR-HAC-HRW-PE-PLN-000002 – Revision 2 : Traffic, Transport and Access Management Sub-Plan

E111	Before undertaking any works and during maintenance or construction activities, erosion and sediment controls must be implemented and maintained to prevent water pollution consistent with LandCom's Managing Urban Stormwater series (The Blue Book).	• Addressed in PLR-HAC-HRW-PE-PLN-000006 (Revision 2) : Construction Compound Management Sub Plan • Addressed in PLR-HAC-HRW-PE-PLN-000004: Revision 2 : Soil and Water Management Sub Plan
E127	Waste generated during construction and operation must be managed in accordance with the following priorities: (a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; (b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and (c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.	• Addressed in PLR-HAC-HRW-PE-PLN-000001 (Revision 3) : Construction Environmental Management Plan
E135	The Proponent must identify utilities, services and other infrastructure and property potentially affected by construction to determine requirements for access to, diversion, protection, and/or support. Consultation with the relevant owner and/or provider of services that are likely to be affected by the CSSI must be undertaken to make suitable arrangements for access to, diversion, protection, and/or support of the affected infrastructure as required. The Proponent must ensure that any disruption to any service is minimised and shall be responsible for advising impact to service recipients before any planned disruption of service. The cost of any such arrangements must be borne by the Proponent, unless otherwise agreed with the utility/service provider.	• Community consultation doorknock conducted on 15.08.19 notifying public of Sydney Water Main night works. • Community to be notified of works at least 7 days prior to commencement of works as well as door knocked. • Sydney Water to notify residents of service disruptions. • Hospital stakeholders to be managed through ongoing fortnightly meetings.



Our ref: SSI 8285

Louise Sureda
Director – Planning, Environment and Sustainability
Transport for NSW
130 George Street
Parramatta, NSW, 2150
BY EMAIL ONLY: louise.sureda@transport.nsw.gov.au

Dear Louise

Approval of high risk Out of Hours Works activities (SSI 8285)

I refer to your submission received on 20 September 2019 requesting approval of the high-risk activities included in the TfNSW Out of Hours Works Application ref PLR-HRW-OOHW-03 (OOHW application) on Hawkesbury Road in Westmead, in accordance with condition E28(c)(ii) of SSI 8285. I also acknowledge your response to the Department's review comments and requests for additional information.

The Department has reviewed the request to undertake watermain connection works for a total of 10 shifts between the date of this approval and 13 January 2020.

As delegate of the Planning Secretary and pursuant to condition E28(c)(ii) I approve the high-risk activities detailed in the OOHW application subject to them being undertaken in accordance with the following conditions:

1. for a maximum of 10 nights between the date of this approval and 13 January 2020
2. between 10pm and 7am, for no more than four nights in any seven-day period
3. only in continuous blocks not exceeding three (3) hours each with a minimum respite from those activities of not less than one (1) hour between each block
4. implementation of the ongoing consultation plan and mitigation measures documented in the OOHW application
5. any complaints received being managed in compliance with the project's conditions of approval and Community Consultation Strategy

Please provide the Department with the dates for the works once they are confirmed with Sydney Water.

I note your commitment to closely monitor community feedback during the first night of works and provide alternative accommodation if required.

Please ensure that you make the OOHW application and this approval publicly available on the project website.

If you have any questions, please contact Amy Porter at amy.porter@planning.nsw.gov.au.

Yours sincerely,

Erica van den Honert

Director

Infrastructure Assessments, Infrastructure Management

As delegate of the Planning Secretary

Copied to: megan.haberley@transport.nsw.gov.au, beau.weyers@ane.com.au; gillian.lehn@aquas.com.au



Property and Infrastructure Specialists

General Correspondence

Reference No.: PLRP-APP-APP-CORR-000148**Project Title:** Parramatta Light Rail - Program Wide/Minor Works**Date:** 16 December 2019, 07:47**To:** Beau Weyers, APP Corporation
Megan Haberley, Transport for NSW**Cc:** Judy Chan, APP Corporation
David Opperman, APP Corporation
Scott Johnston, APP Corporation
Andrew Bennet, APP Corporation
Mary Sakr, Health Administration Corporation
Swan Htet, Health Administration Corporation
Quinton Jubb, Transport for NSW
Andrew Milne, Transport for NSW**From:** Annabelle Tungol, APP Corporation**Subject:** RE: For ER and AA Review: Request for Extension to PLR-HAC-HRW-OOHW-03

Hi Megan,

With the AA endorsement and after reviewing the submitted documents and evidence on reason of extension, I am endorsing the extension of OOHW noting no changes on impacts and on number of nights (10 nights) works as per the Secretary's approval letter. As mentioned by the AA, please ensure that community notifications are completed prior to the nominated extension dates.

Regards,
Annabelle Tungol
Environmental Representative
mobile 0438 850 943

Design Pkg:**Discipline:****Contract / Program:** Hawkesbury Road Widening**Location:**

----- Original Message -----



Property and Infrastructure Specialists

General Correspondence

Reference No.: PLRP-APP-TFNSW-CORR-000430**Project Title:** Parramatta Light Rail - Program Wide/Minor Works**Date:** 10 December 2019, 17:37

To: Megan Haberley, Transport for NSW
Annabelle Tungol, APP Corporation

Cc: Judy Chan, APP Corporation
David Opperman, APP Corporation
Scott Johnston, APP Corporation
Andrew Bennet, APP Corporation
Quinton Jubb, Transport for NSW
Mary Sakr, Health Administration Corporation
Swan Htet, Health Administration Corporation
Andrew Milne, Transport for NSW

From: Beau Weyers, APP Corporation

Subject: RE: For ER and AA Review: Request for Extension to PLR-HAC-HRW-OOHW-03

Hi Megan,

Provided this work is proposed as an extension to the existing dates only (no change to proposed methodology or relative number of nights work per week), the proposed extension has no additional impacts for consideration from an Acoustic perspective.

If any changes to the way the work is proposed to be carried out, it is noted that the updated OOHW Protocol (ver 8.8) should be followed in preparing an updated application.

Based on my review of the documents presented, it appears purely an extension to the potential dates for construction are considered, and the only consideration would be to ensure Community Notification occurs within 7 days of the proposed activities.

As such please consider this correspondence as AA Endorsement to submit to DoPE for the additional dates.

To clarify, I did not identify an updated OOHW Protocol attached. Is it intended to present the existing documentation with a letter of request for additional dates to DoPE?

Regards,
Beau Weyers: PLR AA

Design Pkg:

Contract / Program: Hawkesbury Road Widening

Discipline:

Location:

----- Original Message -----

Document Transmittal



Project Number:	PLRP	Transmittal No:	PLRP-TFNSW-TX-001503
Project Title:	Parramatta Light Rail - Program Wide/Minor Works		
Date:	09 December 2019 08:00 AM		
Subject:	For ER and AA Review: Request for Extension to PLR-HAC-HRW-OOHW-03		
Reason for Issue:	Issued For Review		

Message:

Dear Annabelle and Beau,

I am writing to request your review and endorsement of an enquiry regarding OOHW Application - PLR-HAC-HRW-OOHW-03 (Sydney Water Connections on Hawkesbury Road). Due to complications in the first scheduled works an additional shift is required, however Sydney Water's availability occurs outside of the approved period of PLR-HAC-HRW-OOHW-03 (to 29 February 2020).

This Transmittal includes:

1. Transmittal - Final version of PLR-HAC-HRW-OOHW-03
2. Attachment - PLR-HAC-HRW-OOHW-03 Approval Letter from Secretary's Delegate
3. Attachment - Sydney Water design drawings marking cancellation issues
4. Attachment - Correspondence from Hawkesbury Road Widening Team requesting extension.

Could you please review the approved application and information provided from the Hawkesbury Road Widening Team and provide your written endorsement of this extension, if suitable? Please include any further recommendations for PLR-HAC-HRW-OOHW-03 in this letter. Thank you.

Sincerely,
Megan.

Megan Haberley
Senior Manager, Environment
Planning & Environment
Parramatta Light Rail
Transport for NSW

M 0488 442 284
Level 10, 130 George Street Parramatta NSW 2150

Your Response is required by 16 December 2019

Transmitted to:

Company	Name
APP Corporation	Annabelle Tungol
APP Corporation	Beau Weyers

Transmitted cc:

Company	Name
APP Corporation	Judy Chan
APP Corporation	David Opperman
APP Corporation	Scott Johnston
APP Corporation	Andrew Bennet
Transport for NSW	Quinton Jubb
Health Administration Corporation	Mary Sakr
Health Administration Corporation	Swan Htet
Transport for NSW	Andrew Milne

[Click here to download all Transmittal files.](#)

Click on Document Nos to download them individually.

From: Swan Htet
To: [Megan Haberley](#)
Subject: PWCAU-GCOR-038067: Sydney Water Live Connection (18/11/19) - Cancellation and Next Steps
ACNXREF<9GuEcGdxyEmnACIIMhoY4>
Date: Wednesday, 27 November 2019 9:11:17 AM

Dear Megan,

You have received a new **General Correspondence: PWCAU-GCOR-038067**

Project: Westmead
Type: General Correspondence
Mail Number: PWCAU-GCOR-038067
To: Quinton Jubb, TfNSW
Megan Haberley, Transport for NSW
Cc: Mr Danny Khal, FORD CIVIL CONTRACTING PTY LIMITED
Mary Sakr, PwC
Mr Ivan Tcherkashnev, PwC
From: S Htet, PwC
Sent: 27/11/2019 9:11:10 AM AEDT (GMT +11:00)
Attribute 1: HRW (Ford Civil)
Attribute 2: Civil
Status: N/A
Subject: Sydney Water Live Connection (18/11/19) - Cancellation and Next Steps

Hi Megan,

Further to the below correspondence, I wish to inform you in more detail regarding the cancelled Sydney Water "High Risk" OOHW and the ensuing consequences as a result for planning purposes.

On 18/11/19, Ford Civil had planned on isolating the DN150mm water main (W/M) and connecting to the new w/m through their DPIE approved OOHW application. The Sydney Water Hydra Plans (DBYD - attached document pg 1) clearly shows the side streets (Jessie, Helen and Caroline St) connecting to the DN150mm W/M.

Furthermore the Sydney Water stamped design drawings (attached document pg 3) shows the DN150mm W/M connecting to the side streets and the existing side street branch lines connecting to the existing DN150mm W/M. On the night of the shift, Sydney Water also provided approval to commence the construction works ("Form M"- pg 2 of attached).

Ford Civil commenced works for the Sydney Water live connections. Contrary to the above official documentation, it was immediately discovered that the branch lines were fed from the DN250mm W/M rather than the DN150mm W/M. This means that the whole scope of Works for Stage 1 W/M live connections were required to be ceased on the night.

As a result of the above which were circumstances outside of our control, the revised W/M cut overs are of the following:

- DN150mm W/M 8pm 5/12/19 to 1am 6/12/19 (Within approved DPIE timeframe)
- DN250mm W/M 8pm 17/12/19 to 1am 18/12/19 (Within approved DPIE timeframe)
- DN250mm W/M 8pm 11/2/20 to 1am 12/2/20 (**Outside of approved DPIE timeframe**)

Given that DPIE has approved our request to undertake water main connection works for a 10 shifts between 6 November 2019 and 13 January 2020. We are required to extend this approved timeframe to the end of February in case of another unforeseen circumstances such as this.

Please let me know what is required from our end. A cover letter detailing the above can be provided. The methodology of the Works will remain the same.

Kind Regards,

Swan Htet

Project Manager | Infrastructure and Urban Renewal | PwC

M: 0415 357 008 T: +61 (02) 8266 2738

swan.htet@pwc.com

From: M Sakr
Sent: 20/11/2019 12:52:42 PM AEDT (GMT +11:00)
To: Tim Mason, Quinton Jubb
Cc: Swan Htet, Ivan Tcherkashnev
Mail Number: PWCAU-GCOR-037886
Subject: Fwd: Sydney Water Connection (18/11/19) - Cancellation

Tim and Quinton,

On Monday 18th November 2019 Ford Civil planned on completing the 150 water main connection. Unfortunately, due to incorrect documentation of the existing design by Sydney Water (including connections to the existing 150 water main) and due to incorrect connections of services to CMRI from the 150 water main, Ford Civil were unable to complete the Works as per the program.

As a result, a redesign is currently underway and a new connection date will need to be advised by Sydney Water. Please note, to date no cut-overs have been completed. The 150 and 250 water main connections are impacted at this stage.

The works are being reviewed by Ford Civil and RAR. Once confirmed, I will advise you on the next steps along with potential time and cost impacts. As per the below, Ford has submitted an initial notice.

If you have any queries or would like to further discuss, please do not hesitate to contact me.

Regards,
Mary Sakr
PwC | Project Manager
Infrastructure and Urban Renewal
Mobile: +61 420 886 877
Email: mary.therese.sakr@pwc.com
PricewaterhouseCoopers
One International Towers Sydney
Watermans Quay, Barangaroo NSW 2000
www.pwc.com.au

From: D Khal
Sent: 19/11/2019 7:22:21 PM AEDT (GMT +11:00)
To: Danny Khal, James Wright
Cc: Adam Khan, Robin Khaushu, Jackson Lord, mark moulton, Bakos Patros, Danielle Simpson, Swan Htet, Darren Hudson, Mary Sakr, Ivan Tcherkashnev
Mail Number: FORD-CONNOTICE-000085
Subject: Re: Sydney Water Connection (18/11/19) - Cancellation

James,

Please see below correspondence re-addressed to yourself (Principals Authorised Person).

Do not hesitate to contact me should you require any further information.

Regards,
Danny

From: D Khal
Sent: 19/11/2019 7:16:36 PM AEDT (GMT +11:00)
To: Tom McGregor
Cc: Adam Khan, Robin Khaushu, Jackson Lord, mark moul, Bakos Patros, Danielle Simpson, Swan Htet, Darren Hudson, Mary Sakr, Ivan Tcherkashnev
Mail Number: FORD-CONNOTICE-000084
Subject: Sydney Water Connection (18/11/19) - Cancellation

Tom,

On behalf of Mark Moul (Contractor's Authorised Person), we wish to provide the following initial notice for a Site Condition encountered yesterday (18/11/19).

The Site Condition is in relation to the Sydney Water DN150mm watermain connection which was scheduled to occur at 9pm 18th November to 2am 19th November.

The shift was abandoned at 10pm 18th November following discovery by Sydney Water representatives that the existing Watermain arrangement did not match the Sydney Water Hydra Drawings and Approved Design. Despite Sydney Water performing a Trial Shutdown for the DN150mm prior to the connection, they were not able to safely isolate the DN150mm watermain due to unforeseen Site Conditions. Therefore, FCC and its Sydney Water accredited subcontractor Jonishan were not able to perform the works.

FCC and Jonishan reinstated the road and all open excavations to make safe following the above.

Resources on site:

- FCC supervision and labour (set-up and closure of traffic barriers)
- Jonishan crew (plumbing connections, incl. subcontractors etc.)
- Plant (lighting towers, excavators, forklift, trucks etc.)
- Traffic Control (closure of lanes and site access)
- Non-destructive digging truck (dewater holes following main disconnection)

FCC advises there will be cost and programme (subject to revised methodology) impact associated with the above. An urgent meeting has been arranged with RAR (designers) 12pm Wednesday 20/11/19 to develop a revised methodology for presentation to Sydney Water.

RAR are currently consulting Sydney Water and will advise of the outcome.

Further details will be provided in the coming days with more elaborate detail.

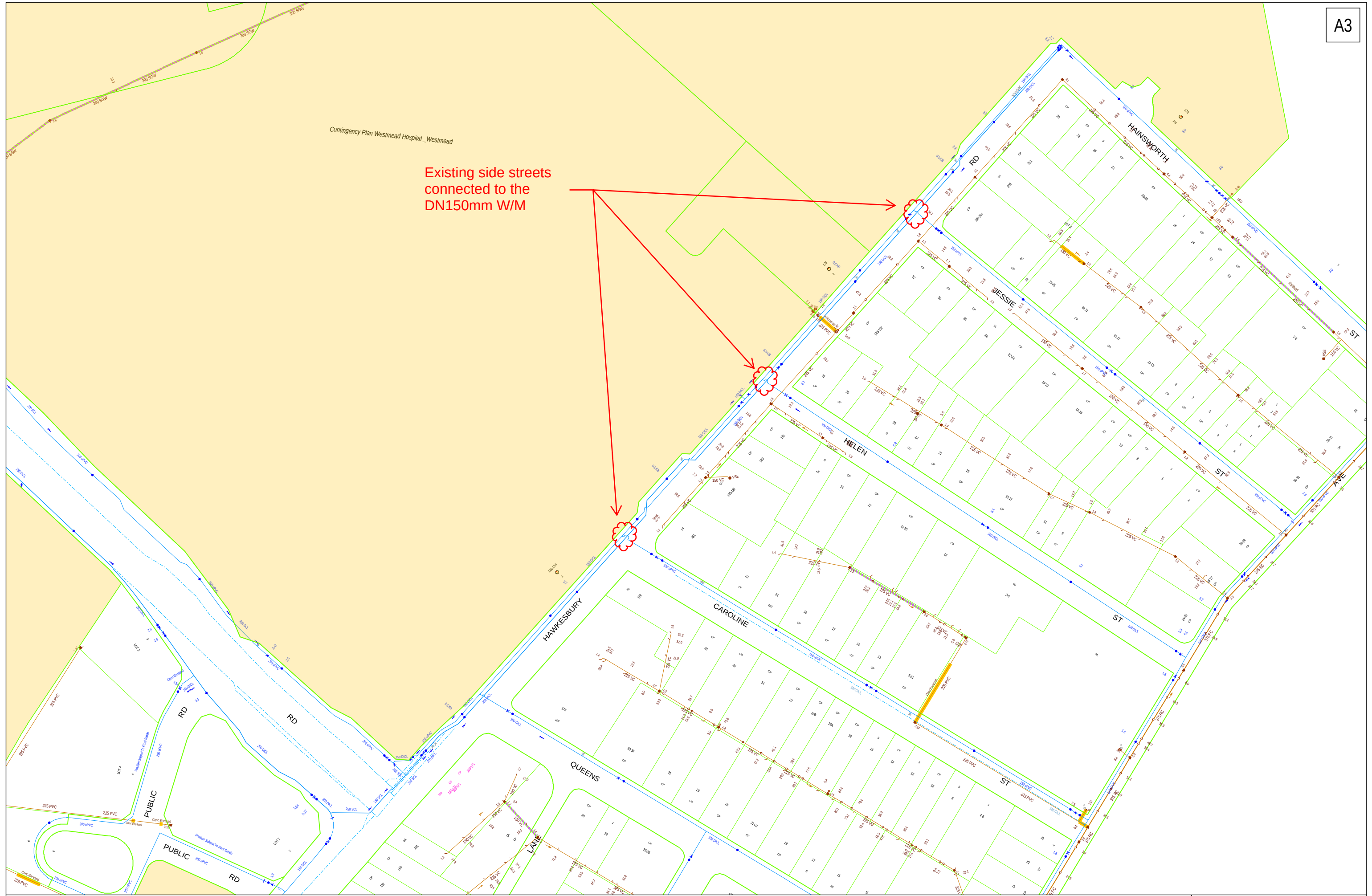
Regards,
Danny

File Attachments ([Zip download all files](#))
[HRW Sydney Water Connection 18-11-19 - Cancellation.pdf](#)
[CORR-PLRP-TFNSW-HAC-CORR-000069-19.11.06 PLR Hawkesbury Road OOHW Application - Approval Letter.pdf](#)

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2019/11/18, 11:58 pm

FORM M - HIDRA & Authority to Work Checklist for Planned Work

Water assets: < 250mm, or 250mm & greater already identified as W3 with low customer and system risks

Project Title / Name & MAXIMO number:

ISOLATION PLANNING

Does project involves confined space entry or excavation with a depth of 1.5 m or greater?

If N, W3: Single Barrier Routine,

If Y, W4: Double Barrier OR W5: Single Barrier with second control other than additional barrier

Y ☐ N ☒

Method of hydraulic flow isolation / flow management (circle relevant):

W3 ☒ W4 ☐ W5 ☐

If W5, select one second control (tick)

Monitor SV to prevent valve from being accidentally operated OR

Lock single valve so it cannot be operated OR

Use a barrier (eg plate) to stop access to single valve so it cannot be operated

☐

☐

☒

Are valves to be operated and method for proving isolation identified on attached plan(s)?

Y ☒ N ☐

1. Plan Approved by Responsible Manager or Delegated Rep :

Date:

ISOLATION IMPLEMENTATION

Hazard	Impact	CONTROLS	CONTROLS HAVE BEEN IMPLEMENTED		
What can harm you?	What can happen?	How it can happen?			
Engulfment of the work site	Drowning of personnel	SVs isolating main are operated during works	• All isolation valves to be operated and tagged by the authorised person	Yes ☒ No ☐	
Engulfment of the work site	Drowning of personnel	Unanchored / unrestrained valves	• All 1st barrier SVs to be greater than 10m from work excavation or double barrier to be implemented	Yes ☒ No ☐	
Engulfment of the work site	Drowning of personnel	Internal leaking of isolation valves	• FIFM completed & successfully proven via: (eg hydrant outside No.36 Kay St)	Yes ☒ No ☐	
Engulfment of the work site	Drowning of personnel	Entrapment in: • a confined space or • an excavation with a depth of 1.5 m or greater	• Double barrier isolation OR • Lock single valve so it cannot be operated OR • Prevent access to the single valve by using a barrier (such as a plate) OR • Monitor SV to prevent valve from being inadvertently operated	Yes ☒ No ☐ N/A ☐	

Work can proceed only if controls for hazards identified as applicable have been implemented. If "No" has been marked for any of the above cease work and refer to Team Leader / Manager. The FIFM incorporates the relevant SVMS.

Work cannot commence this section has been signed

2. FIFM completed as per HYDRA plot & I have personally witnessed the FIFM successfully proven

Responsible Person Implementation

Name (Print)

Signed

Date

Chris Wunnot

CW

18-11-19

3. Controls for hazards identified above as applicable have been applied

Responsible Person Implementation

Chris Wunnot

CW

18-11-19

4. Work Authorised to commence

FIFM coordinator

Bruce Beattie

BB

18/11/19

5. Authority to commence acknowledged

Service Provider

R. MEROB

RM

18/11/19

RECOMMISSIONING

6. Work has been completed to the stage where the asset is now available for recommissioning

Service Provider

R. MEROB

RM

18/11/19

7. Asset is now available for recommissioning

FIFM Plan Coordinator or delegated rep

Bruce Beattie

BB

18/11/19

8. Authority to recommission assets acknowledged

Responsible Person Implementation

Chris Wunnot

CW

18-11-19

9. Recommissioning complete, system returned to normal operation, FIFM Plan Coordinator notified

Responsible Person Implementation

Chris Wunnot

CW

18-11-19

CONNECTION ABANDONED DUE TO HYDRA
INFORMATION BEING INCORRECT.

A1F

AS ADVISED BY NSW HEALTH CONNECTION POINT HAS BEEN DISUSED AND IS NOT TO BE REPLACED

18/11/19 Loading Zone Connection - Area exposed by Crew and reinstated with the plate

PS Crew Standby

18/11/19 Service Connection x 1 - exposed and ready - not completed - plate reinstated, dovetailed and hot mixed

DN250 D.I.C.L. MAIN 1.5m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL REFER NOTES 12 & 35 & SHEET 3

LAY DN250 D.I.C.L. MAIN 1.5m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

OFFSET HYDRANT - REFER DETAIL 'D'

18/11/19 Caroline Connection Works - Matt Crew - install Wang clamp main not isolated 21/11/19 - Flushing bend reinstated and area reinstated (will not be on next DN150 connection)

LAY DN250 D.I.C.L. MAIN 1.5m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

HYDRANT SURFACE FITTING TO BE ADJUSTED TO P.F.S.L. - REFER NOTE 22

LAY DN150 P.V.C. MAIN Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTE 12 - TO BE DISUSED UNDER INFRASTRUCTURE WORKS PACKAGE

DN250x150 TAPER

LAY DN250 D.I.C.L. MAIN 1.5m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL (APPROX. 1.1m-1.2m COVER TO EXISTING SURFACE LEVEL) - REFER NOTES 12 & 35 & SHEET 3

LAY DN150 D.I.C.L. MAIN Min. 1.1m COVER TO FUTURE SURFACE LEVEL BELOW SWD - APPROX. 1.8m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

SO/SO/FL TEE & FL S.V. - WATER SERVICE TO PASS ABOVE SWD - REFER NOTE 17

18/11/19 Jessie Connection Works - Mark Crew - install Wang clamp main not isolated - backfilled and road reinstated

LAY DN250 D.I.C.L. MAIN 1.2m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

CTS and PLS Crew Standby

REFER DIAGRAM 'B' BELOW & DETAIL 'C' FITTINGS NOT SHOWN FOR CLARITY

PS Crew install Temp feed WJMR

LAY DN250 D.I.C.L. MAIN IN REINFORCED CONCRETE ENCASUREMENT BELOW FUTURE SWD AT 1.9m COVER TO EXISTING SURFACE LEVEL - REFER 18/11/19 Emergency Connection Works - Eamon Crew - backfilled and road reinstated

PS Crew Standby

18/11/19 Helen connection works - Ken Crew - flushing bend reinstated and plate replaced and made safe for pedestrians

MAIN IN REINFORCED CONCRETE ENCASUREMENT AT 0.45m COVER TO EXISTING SURFACE LEVEL - REFER DETAIL 'A'

LAY DN250 D.I.C.L. MAIN 1.5m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTE 12 & SHEET 3

LAY DN100 D.I.C.L. MAIN AT 1.2m COVER TO FUTURE SURFACE LEVEL ABOVE FUTURE SWD & BELOW EXISTING SWD - APPROX. 0.8m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

LAY DN250 D.I.C.L. MAIN 1.0m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

DN150x150 TEE

PS Crew Standby

LAY DN150 P.V.C. MAIN 1.8m FROM FUTURE LIP OF KERB Min. 0.8m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3 - TO BE DISUSED UNDER INFRASTRUCTURE WORKS PACKAGE

DN150x150 TEE

LAY DN150 P.V.C. MAIN - REFER NOTE 12

FL/FL/FL TEE & FL S.V. - WATER/FIRE SERVICES TO PASS ABOVE FUTURE SWD - REFER NOTE 17

18/11/19 Jessie Connection Works - Mark Crew - install Wang clamp main not isolated - backfilled and road reinstated

LAY DN250 D.I.C.L. MAIN 1.2m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

CTS and PLS Crew Standby

REFER DIAGRAM 'B' BELOW & DETAIL 'C' FITTINGS NOT SHOWN FOR CLARITY

PS Crew install Temp feed WJMR

LAY DN250 D.I.C.L. MAIN IN REINFORCED CONCRETE ENCASUREMENT BELOW FUTURE SWD AT 1.9m COVER TO EXISTING SURFACE LEVEL - REFER 18/11/19 Emergency Connection Works - Eamon Crew - backfilled and road reinstated

PS Crew Standby

18/11/19 Helen connection works - Ken Crew - flushing bend reinstated and plate replaced and made safe for pedestrians

MAIN IN REINFORCED CONCRETE ENCASUREMENT AT 0.45m COVER TO EXISTING SURFACE LEVEL - REFER DETAIL 'A'

LAY DN250 D.I.C.L. MAIN 1.5m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTE 12 & SHEET 3

LAY DN100 D.I.C.L. MAIN AT 1.2m COVER TO FUTURE SURFACE LEVEL ABOVE FUTURE SWD & BELOW EXISTING SWD - APPROX. 0.8m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

LAY DN250 D.I.C.L. MAIN 1.0m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

DN150x150 TEE

PS Crew Standby

LAY DN150 P.V.C. MAIN 1.8m FROM FUTURE LIP OF KERB Min. 0.8m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3 - TO BE DISUSED UNDER INFRASTRUCTURE WORKS PACKAGE

DN150x150 TEE

LAY DN150 P.V.C. MAIN - REFER NOTE 12

FL/FL/FL TEE & FL S.V. - WATER/FIRE SERVICES TO PASS ABOVE FUTURE SWD - REFER NOTE 17

18/11/19 Jessie Connection Works - Mark Crew - install Wang clamp main not isolated - backfilled and road reinstated

LAY DN250 D.I.C.L. MAIN 1.2m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

CTS and PLS Crew Standby

REFER DIAGRAM 'B' BELOW & DETAIL 'C' FITTINGS NOT SHOWN FOR CLARITY

PS Crew install Temp feed WJMR

LAY DN250 D.I.C.L. MAIN IN REINFORCED CONCRETE ENCASUREMENT BELOW FUTURE SWD AT 1.9m COVER TO EXISTING SURFACE LEVEL - REFER 18/11/19 Emergency Connection Works - Eamon Crew - backfilled and road reinstated

PS Crew Standby

18/11/19 Helen connection works - Ken Crew - flushing bend reinstated and plate replaced and made safe for pedestrians

MAIN IN REINFORCED CONCRETE ENCASUREMENT AT 0.45m COVER TO EXISTING SURFACE LEVEL - REFER DETAIL 'A'

LAY DN250 D.I.C.L. MAIN 1.5m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTE 12 & SHEET 3

LAY DN100 D.I.C.L. MAIN AT 1.2m COVER TO FUTURE SURFACE LEVEL ABOVE FUTURE SWD & BELOW EXISTING SWD - APPROX. 0.8m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

LAY DN250 D.I.C.L. MAIN 1.0m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

DN150x150 TEE

PS Crew Standby

LAY DN150 P.V.C. MAIN 1.8m FROM FUTURE LIP OF KERB Min. 0.8m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3 - TO BE DISUSED UNDER INFRASTRUCTURE WORKS PACKAGE

DN150x150 TEE

LAY DN150 P.V.C. MAIN - REFER NOTE 12

FL/FL/FL TEE & FL S.V. - WATER/FIRE SERVICES TO PASS ABOVE FUTURE SWD - REFER NOTE 17

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LAY DN250 D.I.C.L. MAIN 1.2m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

CTS and PLS Crew Standby

REFER DIAGRAM 'B' BELOW & DETAIL 'C' FITTINGS NOT SHOWN FOR CLARITY

PS Crew install Temp feed WJMR

LAY DN250 D.I.C.L. MAIN IN REINFORCED CONCRETE ENCASUREMENT BELOW FUTURE SWD AT 1.9m COVER TO EXISTING SURFACE LEVEL - REFER 18/11/19 Emergency Connection Works - Eamon Crew - backfilled and road reinstated

PS Crew Standby

18/11/19 Helen connection works - Ken Crew - flushing bend reinstated and plate replaced and made safe for pedestrians

MAIN IN REINFORCED CONCRETE ENCASUREMENT AT 0.45m COVER TO EXISTING SURFACE LEVEL - REFER DETAIL 'A'

LAY DN250 D.I.C.L. MAIN 1.5m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTE 12 & SHEET 3

LAY DN100 D.I.C.L. MAIN AT 1.2m COVER TO FUTURE SURFACE LEVEL ABOVE FUTURE SWD & BELOW EXISTING SWD - APPROX. 0.8m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

LAY DN250 D.I.C.L. MAIN 1.0m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

DN150x150 TEE

PS Crew Standby

LAY DN150 P.V.C. MAIN 1.8m FROM FUTURE LIP OF KERB Min. 0.8m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3 - TO BE DISUSED UNDER INFRASTRUCTURE WORKS PACKAGE

DN150x150 TEE

LAY DN150 P.V.C. MAIN - REFER NOTE 12

FL/FL/FL TEE & FL S.V. - WATER/FIRE SERVICES TO PASS ABOVE FUTURE SWD - REFER NOTE 17

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LAY DN250 D.I.C.L. MAIN 1.2m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

CTS and PLS Crew Standby

REFER DIAGRAM 'B' BELOW & DETAIL 'C' FITTINGS NOT SHOWN FOR CLARITY

PS Crew install Temp feed WJMR

LAY DN250 D.I.C.L. MAIN IN REINFORCED CONCRETE ENCASUREMENT BELOW FUTURE SWD AT 1.9m COVER TO EXISTING SURFACE LEVEL - REFER 18/11/19 Emergency Connection Works - Eamon Crew - backfilled and road reinstated

PS Crew Standby

18/11/19 Helen connection works - Ken Crew - flushing bend reinstated and plate replaced and made safe for pedestrians

MAIN IN REINFORCED CONCRETE ENCASUREMENT AT 0.45m COVER TO EXISTING SURFACE LEVEL - REFER DETAIL 'A'

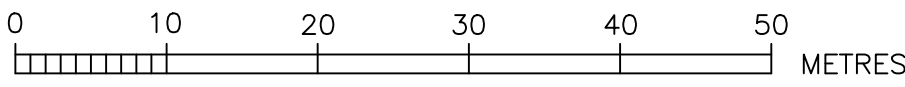
LAY DN250 D.I.C.L. MAIN 1.5m FROM FUTURE LIP OF KERB Min. 1.1m COVER TO EXISTING SURFACE LEVEL - REFER NOTE 12 & SHEET 3

LAY DN100 D.I.C.L. MAIN AT 1.2m COVER TO FUTURE SURFACE LEVEL ABOVE FUTURE SWD & BELOW EXISTING SWD - APPROX. 0.8m COVER TO EXISTING SURFACE LEVEL - REFER NOTES 12 & 35 & SHEET 3

LAY DN250 D.I.C.L. MAIN 1.0m FROM FUTURE LIP OF KERB

APPROVAL DATE

		SYDNEY WATER CORPORATION	
Case No. 169169PW		SHT 2 OF 4 SHTS.	
SYDNEY WATER CORPORATION FOR DETAILS OF SERVICES SEE SHEET 1			



NOTES :-

- 1 WATER SERVICING COORDINATOR: ROSE ATKINS RIMMER (INFRASTRUCTURE) Pty. Ltd.
142 SUNNYHOLT ROAD BLACKTOWN NSW 2148
Ph: (02) 9853 0200
- DESIGN: ROSE ATKINS RIMMER (INFRASTRUCTURE) Pty. Ltd.
142 SUNNYHOLT ROAD BLACKTOWN NSW 2148
Ph: (02) 9853 0200
- FOR: TRANSPORT FOR NSW
C/- AUSTRALIAN UTILITY SOLUTIONS
LEVEL 24, INTERNATIONAL TOWER 3, 300 BARANGAROO AVENUE
SYDNEY NSW 2000
Ph: (02) 9236 6111
- 2 ALL WORKS & MATERIALS ARE TO BE IN ACCORDANCE WITH THE WATER SUPPLY CODE OF AUSTRALIA WSA 03-2011-3.1 (SYDNEY WATER EDITION - 2014) AND SCHEDULE 2 - THE BASIS OF DESIGN MANUAL, AS EXECUTED UNDER THE PARRAMATTA LIGHT RAIL PROJECT STAGE 1: SWC INTERFACE AGREEMENT BETWEEN TRANSPORT FOR NSW AND SYDNEY WATER CORPORATION.
- 3 THE CONSTRUCTOR IS TO DETERMINE THE LOCATION & LEVEL OF EXISTING SERVICES PRIOR TO CONSTRUCTION. A CURRENT SERVICES SEARCH & SITE CHECK OF ALL EXISTING SERVICES WILL BE REQUIRED PRIOR TO COMMENCEMENT OF ANY WORKS. CONSTRUCTOR TO CONFIRM LOCATION & LEVEL OF ALL EXISTING WATER MAINS AT CONNECTION POINTS PRIOR TO CONSTRUCTION.
- 4 OTHER UTILITY AUTHORITY SERVICES SHOWN ARE INDICATIVE ONLY & HAVE BEEN OVERLAID USING D.B.Y.D. & SURVEY INFORMATION SUPPLIED. CHANGES IN THE LOCATION OF THESE MAY OCCUR DUE TO ADJUSTMENTS BY THE RELEVANT AUTHORITY. ALSO REFER NOTES 5 & 34.
- 5 THE CONSTRUCTOR IS TO LIAISE WITH THE HEAD CONTRACTOR RE COORDINATION OF SERVICES ADJUSTMENTS/INSTALLATIONS REQUIRED BY OTHER UTILITY AUTHORITIES. NOMINATED COVER ON PROPOSED SERVICES ARE SPECIFIED AS A GUIDE ONLY & WILL BE SUBJECT TO CHANGE.
- 6 MAINS TO BE LAID WITH MINIMUM 0.8m COVER TO PROPOSED SURFACE AT VARIABLE P.L. EXCEPT WHERE OTHERWISE SHOWN. ALL DEPTHS RELATE TO PROPOSED SURFACE U.N.O.. ALL MAINS TO BE RELATED TO PROPERTY LINE FOR WORK AS CONSTRUCTED PURPOSES. ALL MAINS TO BE PEGGED BY PROJECT SURVEYOR PRIOR TO CONSTRUCTION.
- 7 MAINLAYING WILL GENERALLY PRECEDE FORMATION OF PROPOSED ROADS TO FINISHED SURFACE LEVELS. THE CONSTRUCTOR IS TO LIAISE WITH THE HEAD CONTRACTOR TO OBTAIN FINISHED LEVELS, PROPOSED/FUTURE SERVICE LEVELS & KERB/BOUNDARY REALIGNMENT ASSOCIATED WITH ROADWORKS. THE CONSTRUCTOR IS TO LIAISE WITH THE HEAD CONTRACTOR (INFRASTRUCTURE WORKS) TO OBTAIN FINISHED LEVELS, KERB REALIGNMENT & SWD LEVELS ASSOCIATED WITH FUTURE ROADWORKS. ALSO REFER NOTES 10 & 35.
- 8 i) HORIZONTAL BENDS TO BE ANCHORED IN ACCORDANCE WITH DTC-1110 [A] (REFER NOTE 9).
ii) TAPERS TO BE ANCHORED IN ACCORDANCE WITH DTC-1112 [B].
iii) ALL TEES TO BE ANCHORED IN ACCORDANCE WITH DTC-1113 [B] (REFER NOTE 9).
iv) VERTICAL BENDS (DN150 OR LESS) & HYDRANT BENDS TO BE ANCHORED IN ACCORDANCE WITH DTC-1114 [A] (U.N.O.).
v) STOP VALVES >DN200 TO BE ANCHORED IN ACCORDANCE WITH DTC-1115 [B] U.N.O.
viii) ALL FLANGED PIPEWORK & FITTINGS TO BE INSTALLED IN ACCORDANCE WITH DTC-1145 [A] & 1146 [A].

- 9 ALL WATER MAIN BENDS / TEES WHERE THRUST FORCES WILL BE DIRECTED TOWARDS EXISTING/PROPOSED/FUTURE SERVICES OR EXCAVATIONS (INCLUDING DRAINAGE TRENCHES & SWALES) OR EMBANKMENTS OF WHICH THRUST BLOCKS MAY INTERFERE SHALL BE RESTRAINED IN ACCORDANCE WITH DTC-1111 [B] / DTC-1113 TYPE '2' [B] IT IS THE CONSTRUCTORS RESPONSIBILITY TO LIAISE WITH THE HEAD CONTRACTOR REGARDING THRUST BLOCK LOCATIONS. ALSO REFER NOTES 7 & 10.
- 10 HEAD CONTRACTOR TO COORDINATE FINAL POSITION OF WATER MAIN TO ENSURE NEW WATER MAIN WILL NOT IMPEDE INSTALLATION OF FUTURE SERVICES (INCLUDING STORMWATER), RETAINING WALLS (INCLUDING POSITION & LEVEL OF ROCK NAILS) & NOISEWALLS.
- 11 THE MINIMUM NUMBER OF COMPACTION TESTS REQUIRED TO SATISFY PART 3, SECTION 19.3 OF THE WATER SUPPLY CODE OF AUSTRALIA:
- TRAFFICABLE:
PIPE EMBEDMENT ZONE: NIL TESTS TRENCH FILL ZONE: NIL TESTS (REFER NOTE 12)
- NON-TRAFFICABLE:
PIPE EMBEDMENT ZONE: NIL TESTS TRENCH FILL ZONE: 1 TEST LOCATION (REFER NOTE 12)
- 12 ALL PROPOSED WATER MAINS LAID UNDER ROAD CARRIAGEWAYS ARE TO HAVE 20:1 STABILISED SAND PIPE EMBEDMENT & TRENCH BACKFILL (TO SUB-GRADE LEVEL ONLY) UNLESS NOTED OTHERWISE. ALL PROPOSED WATER MAINS LAID UNDER SHARED USE PATHWAYS, CROSSING OF DRIVEWAYS OR HARD STAND AREAS ARE TO HAVE 20:1 STABILISED SAND PIPE EMBEDMENT ONLY.
- 13 WHERE DEPTH OF COVER EXCEEDS 1.5m TO F.S.L., MAIN SHALL BE EMBEDDED IN 20:1 STABILISED SAND (UP TO MAXIMUM DEPTH OF 2.5m COVER). CONTRACTOR TO NOTIFY W.S.C. IN FOLLOWING CIRCUMSTANCES:
i) SECTIONS OF MAIN NOT DESIGNED AS D.I.C.L., P.E. OR S.C.L PIPE WITH >1.5m COVER.
ii) SECTIONS OF MAIN EXCEEDING 2.5m COVER WHICH ARE NOT DESIGNED AS CONCRETE ENCASED (FOR FURTHER ASSESSMENT).
- 14 ANY BURIED FITTINGS ARE NOT TO BE BACKFILLED UNTIL WORK-AS-CONSTRUCTED DETAILS HAVE BEEN SURVEYED BY THE HEAD CONTRACTOR & APPROVED BY THE WATER SERVICING COORDINATOR. SURVEYED LOCATIONS FOR DETAILED AREAS & S.C.L. MAINS ARE TO BE PROVIDED TO THE WATER SERVICING COORDINATOR BY THE HEAD CONTRACTOR PRIOR TO BACKFILLING.
- 15 ALL CONDITIONS CONTAINED IN THE PROJECT R.E.F./C.E.M.P. TO BE MET.
- 16 PRECAUTIONS MAY BE NECESSARY IN THE VICINITY OF ANY SUB-STATION EARTHING.
- 17 DISCONNECT APPROXIMATELY (ALSO REFER NOTE 18):
449m OF DN250 D.I.C.L. MAIN 1992 ('A'-'B'-'C')
9m OF DN250 D.I.C.L. MAIN 1994 ('C'-'D')
332m OF DN150 C.I.C.L. MAIN 1965 ('E'-'F'-'G'-'H' & 'I'-'J'-'K'-'L')
16m OF DN150 D.I.C.L. MAIN 1998 ('H'-'I')
14m OF DN150 D.I.C.L. MAIN 1994 ('L'-'M')
21m OF DN150 u.P.V.C. MAIN 1993 ('F'-'N')
15m OF DN100 C.I.C.L. MAIN 1978 ('J'-'O')
6m OF DN150 u.P.V.C. MAIN 1993 ('K'-'P')

RECOVER SURFACE FITTINGS & TRANSFER SERVICES AS REQUIRED. SIZE & TYPE OF WATER SERVICE CONNECTIONS ARE TO BE DETERMINED ON-SITE DURING CONSTRUCTION. PROPERTIES THAT HAVE BEEN IDENTIFIED TO REQUIRE RECONNECTIONS ARE DENOTED . NOTE: ALL EXISTING PROPERTY CONNECTIONS MAY NOT HAVE BEEN SHOWN. CONSTRUCTOR TO DETERMINE TOTAL RECONNECTIONS REQUIRED ON SITE. ALSO REFER NOTES 28 & 29. TEMPORARY WATER SERVICE CONNECTIONS MAY BE REQUIRED TO FACILITATE ROADWORKS.

- 18 ALL DISUSED PIPES ARE TO BE GROUT FILLED (LOW STRENGTH - <5MPa) UNLESS OTHERWISE INSTRUCTED BY THE HEAD CONTRACTOR. DISUSED MAINS MAY BE REQUIRED AS SERVICE CONDUITS FOR PROPOSED SERVICE ADJUSTMENTS. TREATMENT OF DISCONNECTED MAINS ARE TO BE RECORDED BY THE CONSTRUCTOR & SHOWN ON WORK AS CONSTRUCTED PLANS.
- 19 DEFLECTIONS MAY BE ACHIEVED BY EASING MAIN AT PIPE JOINTS. PIPE DEFLECTIONS SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATION. ALSO REFER NOTE 37.
- 20 BENDS MAY BE SUBJECT TO CHANGE TO SUIT SITE CONDITIONS AT TIME OF INSTALLATION. CONSTRUCTOR SHALL CONFIRM ANGLES OF ALL BENDS PRIOR TO CONSTRUCTION. REFER NOTES 3, 4, 5, 7 & 9.
- 21 CONSTRUCTOR TO LIAISE WITH HEAD CONTRACTOR TO ENSURE PROPOSED MAIN LOCATION DOES NOT CONFLICT WITH PROPOSED POSTS FOR BUS SHELTERS, LIGHT POLES OR TRAFFIC SIGNALS (INCLUDING FOOTINGS). MAIN CAN BE EASED AS REQUIRED, REFER NOTE 19.
- 22 SURFACE BOXES LOCATED IN FUTURE PAVING ARE TO BE ASPHALTIC/CONCRETE PAVEMENT TYPE BOXES, INCLUDING REPLACEMENT OF EXISTING BOXES WHERE MAIN IS NOT ADJUSTED. ALL SURFACE BOXES TO BE POSITIONED CLEAR OF PRAM RAMPS. CONSTRUCTOR SHALL ENDEAVOR TO POSITION ALL SURFACE BOXES ENTIRELY WITHIN PROPOSED PATHS WHERE APPLICABLE.
- 23 DESIGN CONTROL LINES & CHAINAGES SHOWN THUS:-
- 24 ROAD DESIGN & DRAINAGE TAKEN FROM ENGINEERING MODELS PROVIDED:-
* 80% ROAD ALIGNMENT, ROAD LEVELS & DRAINAGE DESIGN (DATED 19/06/2018)
- 25 EXISTING SERVICES, POLES, ETC BEING DISUSED TO BE RELOCATED PRIOR TO WATER MAIN ADJUSTMENT. POLE HOLDERS MAY BE REQUIRED FOR EXISTING POLES IN VICINITY OF WATER MAIN CONSTRUCTION. CONSTRUCTOR TO LIAISE WITH HEAD CONTRACTOR.
- 26 ALL CARE TO BE TAKEN WHEN USING HEAVY PLANT AND EQUIPMENT IN CLOSE PROXIMITY TO SYDNEY WATER ASSETS TO ENSURE THAT PIPES & FITTINGS ARE NOT DISTURBED OR SUBJECTED TO VIBRATION WHICH COULD CAUSE DETERIORATION & SUBSEQUENT LEAKAGE.
- 27 SHOULD IT BE NECESSARY TO ENTER ANY PRIVATE PROPERTY TO CARRY OUT EXCAVATION ASSOCIATED WITH THE PROJECT, THEN THE RELEVANT PERMISSION TO ENTER IS TO BE OBTAINED FROM ANY AFFECTED LANDOWNERS PRIOR TO COMMENCEMENT OF EXCAVATION.
- 28 TO AVOID THE RISK OF ELECTRIC SHOCK FROM METALLIC WATER SERVICE PIPES DURING THE DISCONNECTION AND RECONNECTION OF WATER SERVICES THE PLUMBER IS TO ADHERE TO AS 3500 (PLUMBING STANDARD) PART 1 SECTION 5.2. ALSO REFER NOTE 29.
- 29 WHERE METALLIC WATER MAIN IS TO BE REPLACED USING PLASTIC PIPES, THE ELECTRICITY SUPPLIER OR A COMPETENT LICENSED ELECTRICIAN SHALL ASSESS AFFECTED PROPERTIES ELECTRICITY SUPPLY FOR DEFECTS & THE LIKELY EFFECT ON EARTHING ADEQUACY. IF A DEFECT IS FOUND, CONSTRUCTOR IS TO MAKE SAFE IN CONSULTATION WITH ELECTRICITY SUPPLIER/ELECTRICIAN. WORKS CAN COMMENCE ONCE THE ELECTRICITY SUPPLIER/ELECTRICIAN DECLARES IN WRITING THAT IT IS SAFE TO PROCEED.



- ENVIRONMENTAL REQUIREMENTS
- 1 THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS IN PLR PROJECT REF AND CEMP.
- 2 SILT-STOP FENCES OR STRAW BALE FILTERS TO BE INSTALLED DOWNSLOPE OF ALL WORKS, PRIOR TO ANY CONSTRUCTION ACTIVITY, EFFECTIVELY MAINTAINED, & TO BE REMOVED ONLY AFTER THE AREA HAS BEEN SATISFACTORILY REVEGETATED.
- 3 THE EXTENT OF CLEARING OF VEGETATION IS TO BE KEPT TO THE ABSOLUTE MINIMUM NECESSARY TO EFFECT THE WORKS.
- 4 AREAS BEYOND WHICH DISTURBANCE WILL NOT BE PERMITTED, SHALL BE SECURED WITH EXCLUSION FENCING AS AGREED TO BY THE SUPERINTENDENT.
- 5 TOPSOIL FROM CONSTRUCTION AREAS IS TO BE STRIPPED & STOCKPILED, PRIOR TO ANY CONSTRUCTION ACTIVITY FOR LATER REUSE IN SITE RESTORATION.
- 6 NATIVE VEGETATION IN BUSHLAND AREAS IS TO BE STRIPPED & STOCKPILED, PRIOR TO ANY CONSTRUCTION ACTIVITY FOR LATER REUSE IN SITE RESTORATION.
- 7 ALL STOCKPILES OF ERODABLE MATERIAL ARE TO BE SURROUNDED BY A BANK OF STRAW BALES STAKED INTO THE GROUND.
- 8 ALL DISTURBED AREAS ARE TO BE RESTORED, STABILISED & RESEDED/REVEGETATED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION ACTIVITIES.
- 9 SILTATION CONTROLS, SITE RESTORATION AND ENVIRONMENTAL REQUIREMENTS TO BE CARRIED OUT TO THE SATISFACTION OF THE SUPERINTENDENT.

EXISTING SERVICES BENEATH PROPOSED ROAD PAVEMENT TO BE RELOCATED BY THE RELEVANT AUTHORITY AND HAVE BEEN SHOWN FOR INFORMATION ONLY.
- REFER NOTES 4, 25 & 34.

CAUTION
EXISTING SERVICES ALLOCATED IN FOOTPATH RESERVE ARE SUBJECT TO VARIABLE PLACEMENT. THE CONTRACTOR IS REQUIRED TO ACQUIRE THE LATEST SEARCH INFORMATION & FIELD CHECK AT THE TIME OF WORKS.

- 30 STEEL MAIN TO COMPLY WITH AS/NZS 1579. CEMENT LINING OF STEEL MAIN TO COMPLY WITH AS 1281. ALL WELDS & CORROSION PROTECTION OF STEEL MAIN TO BE IN ACCORDANCE WITH DTC-1130 [A], DTC-1150 [A] & DTC-1151 [A].
- 31 ALL EXPOSED STEEL SURFACES TO BE PROTECTED WITH DENSO TAPE (OR APPROVED EQUIVALENT). APPLICATION TO BE CARRIED OUT IN ACCORDANCE WITH MANUFACTURE'S SPECIFICATIONS. MINIMUM LAP INTO ENCASEMENT TO BE 200mm.
- 32 CONSTRUCTOR IS TO CHECK ROUNDNESS OF EXISTING & NEW MAINS BY PERFORMING A DIAMETER CHECK ACROSS THREE AXIS OF THE PIPE PRIOR TO CONNECTION.
- 33 IT IS THE RESPONSIBILITY OF THE HEAD CONTRACTOR TO ENSURE PROTECTION OF MAINS DURING CONSTRUCTION, PARTICULARLY IN AREAS WHERE MAINS ARE LAID PRIOR TO EARTHWORKS & OTHER UTILITY ADJUSTMENTS.
- 34 VERTICAL & HORIZONTAL CLEARANCE BETWEEN WATERMAINS & UNDERGROUND SERVICES MUST COMPLY WITH TABLE 5.5 OF THE WATER SUPPLY CODE OF AUSTRALIA WSA 03-2011-3.1 (SYDNEY WATER EDITION - 2014)
- REFER NOTE 4. LOCATIONS AND LEVELS SHOWN ON DESIGN MEET CLEARANCE REQUIREMENTS TO ALL SERVICES EXCEPT WHERE NOTED BELOW:
- ROAD CH80-130 IN FRONT OF PLAZA BUILDING, HORIZONTAL CLEARANCE TO ITS (COMMS) REDUCED FROM 600mm (TABLE 5.5 - WATER SUPPLY CODE) TO 500mm TO ENSURE CLEARANCE TO SWD.
- 35 WORKS ON HAWKESBURY ROAD TO BE CONDUCTED IN 2 STAGES:
HOSPITAL WORKS (STAGE 1) - WATERMAIN ADJUSTMENTS DETAILED ON THIS DESIGN (CN169169) TO BE CONSTRUCTED DURING HOSPITAL WORKS.
INFRASTRUCTURE WORKS (STAGE 2) - FUTURE EXTENSION/ADJUSTMENT OF MAINS DUE TO IMPACT OF INFRASTRUCTURE WORKS (LIGHT RAIL) TO BE CONSTRUCTED UNDER A SEPARATE CASE NUMBER (CN TBC). CONSTRUCTION NOTES ON SHEET 3 OUTLINE LOCATIONS WHERE THE CONSTRUCTOR IS REQUIRED TO LIAISE WITH THE HEAD CONTRACTOR (INFRASTRUCTURE WORKS) TO DETERMINE LEVELS/LOCATIONS OF FUTURE KERBS/SWD. ALSO REFER NOTE 7.
- 36 EXISTING WATER SERVICE IS LIKELY TO BE RELOCATED AND CONNECTED TO EXISTING DN150 MAIN PRIOR TO CONSTRUCTION OF NEW MAIN. CONSTRUCTOR TO CONFIRM LOCATION OF WATER SERVICE PRIOR TO CONNECTION AND LIAISE WITH WSC IF THE LOCATION DIFFERS FROM THE PROPOSED TEE & VALVE LOCATION SHOWN ON THIS DESIGN.
- 37 DUE TO FUTURE PREDICTED SETTLEMENT (APPROX. 30mm), CONSTRUCTOR TO USE 3m PIPE LENGTHS BETWEEN ROAD CH140-310. PIPE DEFLECTIONS BETWEEN CH140-310 SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATION MINUS 0.5'.
- 38 MAINS HAVE BEEN DESIGNED TO COMPLY WITH CLEARANCES SPECIFIED IN TABLE 3-2 OF THE BoDM. GENERALLY, PERMANENT MAINS (MAINS NOT BEING DISUSED AS PART OF THE INFRASTRUCTURE WORKS PACKAGE) ARE LOCATED OUTSIDE OF THE HAZARD ZONE + 1m (HAZARD ZONE DEFINED IN SECTION 3.1 AND APPENDIX D OF THE BoDM). PERMANENT MAINS LOCATED BETWEEN HAZARD ZONE AND HAZARD ZONE + 1m HAVE BEEN DESIGNED AS CONCRETE ENCASED S.C.L. MAINS. TEMPORARY MAINS (MAINS BEING DISUSED AS PART OF THE INFRASTRUCTURE WORKS PACKAGE) WILL BE DISUSED PRIOR TO CONSTRUCTION OF PLR AND HAVE BEEN DESIGNED IN ACCORDANCE WITH TABLE SW 7.6 OF THE WATER SUPPLY CODE OF AUSTRALIA. THE CONSTRUCTOR IS TO LIAISE WITH THE WSC SHOULD CHANGES TO THE DESIGN ALIGNMENT/LEVEL BE REQUIRED TO ENSURE REQUIREMENTS OF THE BoDM ARE MET.

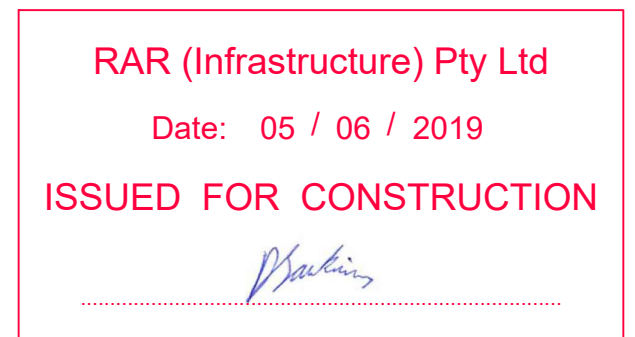
06	MINOR AMENDMENTS DUE TO SWD CHANGE	D.I.S.	06/02/19
05	MINOR AMENDMENTS TO MATCH HEALTH LETTER	D.I.S.	27/12/18
04	BEND DETAIL AT SEWER CROSSING AMENDED	D.I.S.	02/10/18
03	AMENDMENTS AS PER SWC COMMENTS	D.I.S.	20/09/18
02	ISSUE TO SYDNEY WATER	D.I.S.	01/08/18
01	DRAFT FOR DISCUSSION	D.I.S.	20/07/18

No.	REVISION DESCRIPTION	BY	DATE
PLAN TO BE READ IN CONJUNCTION WITH CURRENT SYDNEY WATER STANDARDS SYDNEY WATER CORPORATION			
PRIOR TO COMMENCEMENT OF EXCAVATION FOR PROPOSED AND EXISTING SERVICES CONTACT :- DIAL BEFORE YOU DIG Ph. 1100 ELECTRICITY, ENDEAVOUR ENERGY Ph.131 003 GAS JEMENA Ph.131 909 TELECOMMUNICATIONS, TELSTRA Ph.132 203 Ph. GIVING AT LEAST 48 HOURS NOTICE.			

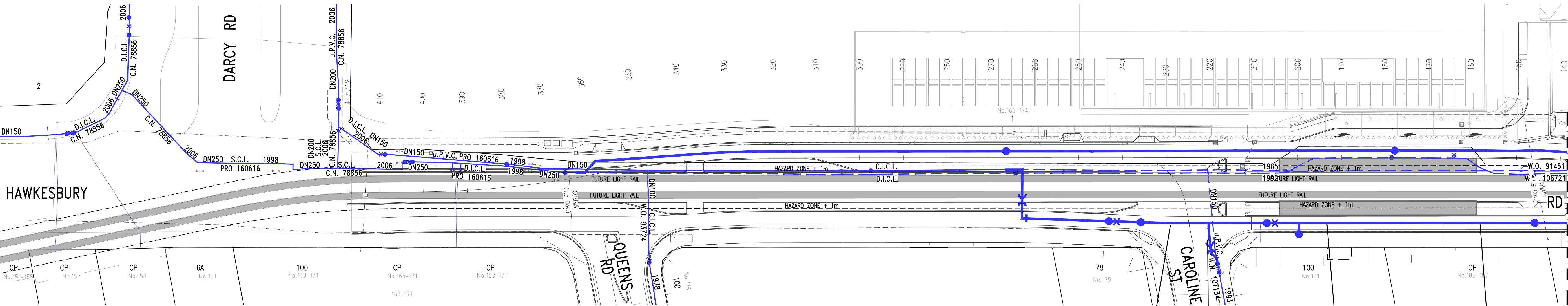
PLAN TO BE READ IN CONJUNCTION WITH CURRENT SYDNEY WATER STANDARDS SYDNEY WATER CORPORATION		UTILITIES						WORK AS CONSTRUCTED CERTIFICATION						PIPE SCHEDULE						AUSTRALIAN HEIGHT DATUM SCALES PLAN 1:500 SECTION { HOR. VERT. CROSS SECTIONS NATURAL LENGTHS, DEPTHS & LEVELS ARE IN METRES.		NO AMENDMENTS ARE TO BE MADE TO THIS PLAN WITHOUT REFERENCE TO SYDNEY WATER. THIS PLAN IS NOT NECESSARILY UP TO DATE OR CORRECT AND SYDNEY WATER ACCEPTS NO RESPONSIBILITY.		SYDNEY WATER CORPORATION	
		TYPE	DATE	REF.	TYPE	DATE	REF.	DEVELOPER						SIZE (DN)	TYPE	CLASS	LENGTH	PIPE JOINING METHOD / NOTES							
PRIOR TO COMMENCEMENT OF EXCAVATION FOR PROPOSED AND EXISTING SERVICES CONTACT :- DIAL BEFORE YOU DIG Ph. 1100 ELECTRICITY, ENDEAVOUR ENERGY Ph.131. 003 GAS, JEMENA Ph.131. 909 TELECOMMUNICATIONS, TELSTRA Ph.132. 203 Ph. GIVING AT LEAST 48 HOURS NOTICE.		SEWER:	16/01/18	HYDRA	TELECOM:	COMMS	16/01/18	TNSW	WATER SERVICE CO-ORDINATOR					250	S.C.L.	SPL	20	273 O.D.	Case No. 169169PW POTABLE WATER MAIN ADJUSTMENT HAWKESBURY ROAD WESTMEAD		PARRAMATTA				
		PROP. SEWER:	18/07/18	RARI	PROP. TEL:	COMMS	10/07/18	RARI	CONSTRUCTOR					250	D.I.C.L.	PN35	690								
		STORMWATER:	16/01/18	TNSW	GAS:	G	16/01/18	TNSW	COMPLETED					250	D.I.C.L.	FL	33.25								
		PROP. STORMWATER:	07/03/18	TNSW	GAS:	-	10/07/18	RARI	DESIGNER					150	D.I.C.L.	PN35	22								
		ELECTRICITY:	16/01/18	TNSW	ITS:	-ITS-	10/07/18	RARI	I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS.					150	P.V.C.	PN16	104								
		PROP. ELEC:		RARI										100	D.I.C.L.	PN35	4								

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POTABLE WATER MAIN ADJUSTMENT
HAWKESBURY ROAD
WESTMEAD
PARRAMATTA



WORK AS CONSTRUCTED CERTIFICATION		 SYDNEY WATER CORPORATION	
DEVELOPER		Case No. 169169PW	SHT 2 OF 4 SHTS.
W.S.C.			
CONSTRUCTOR			
COMPLETED			
W.A.C. PREPARED		SYDNEY WATER CORPORATION FOR DETAILS OF SERVICES SEE SHEET 1	
DESIGNER			
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS			

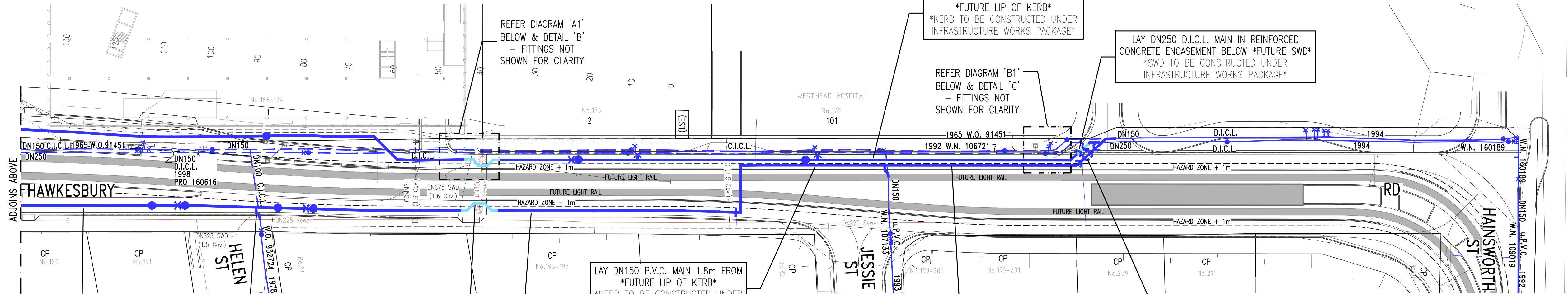


LAY DN250 D.I.C.L. MAIN 1.5m FROM
FUTURE LIP OF KERB Min. 1.1m COVER TO
FUTURE SURFACE LEVEL
*KERB & ROAD LEVELS TO BE CONSTRUCTED
UNDER INFRASTRUCTURE WORKS PACKAGE*

LAY DN250 D.I.C.L. MAIN 1.5m FROM
FUTURE LIP OF KERB
*KERB TO BE CONSTRUCTED UNDER
INFRASTRUCTURE WORKS PACKAGE*

LAY DN150 D.I.C.L. MAIN Min. 1.1m COVER
TO *FUTURE SURFACE LEVEL*
*KERB & ROAD LEVELS TO BE CONSTRUCTED
UNDER INFRASTRUCTURE WORKS PACKAGE*

LAY DN250 D.I.C.L. MAIN 1.5m FROM
FUTURE LIP OF KERB Min. 1.1m COVER
TO *FUTURE SURFACE LEVEL*
*KERB & ROAD LEVELS TO BE CONSTRUCTED
UNDER INFRASTRUCTURE WORKS PACKAGE*



LAY DN250 D.I.C.L. MAIN 1.2m FROM
FUTURE LIP OF KERB
*KERB TO BE CONSTRUCTED UNDER
INFRASTRUCTURE WORKS PACKAGE*

LAY DN250 D.I.C.L. MAIN IN REINFORCED
CONCRETE ENCASEMENT BELOW *FUTURE SWD*
*SWD TO BE CONSTRUCTED UNDER
INFRASTRUCTURE WORKS PACKAGE*

REFER DIAGRAM 'B1'
BELOW & DETAIL 'C'
- FITTINGS NOT
SHOWN FOR CLARITY

LAY DN150 P.V.C. MAIN 1.8m FROM
FUTURE LIP OF KERB
*KERB TO BE CONSTRUCTED UNDER
INFRASTRUCTURE WORKS PACKAGE*

LAY DN150 P.V.C. MAIN 1.8m FROM
FUTURE LIP OF KERB
*KERB TO BE CONSTRUCTED UNDER
INFRASTRUCTURE WORKS PACKAGE*

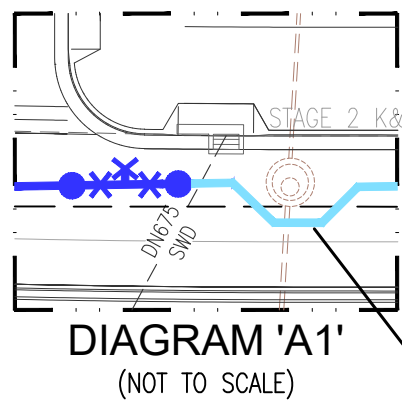
LAY DN150 D.I.C.L. MAIN BELOW *FUTURE SWD*
*SWD TO BE CONSTRUCTED UNDER
INFRASTRUCTURE WORKS PACKAGE*

LAY DN250 D.I.C.L. MAIN 1.5m
FROM *FUTURE LIP OF KERB*
*KERB TO BE CONSTRUCTED UNDER
INFRASTRUCTURE WORKS PACKAGE*

LAY DN100 D.I.C.L. MAIN AT 1.2m
COVER TO *FUTURE SURFACE LEVEL*
ABOVE *FUTURE SWD*
*SWD & ROAD LEVELS TO BE
CONSTRUCTED UNDER
INFRASTRUCTURE WORKS PACKAGE*

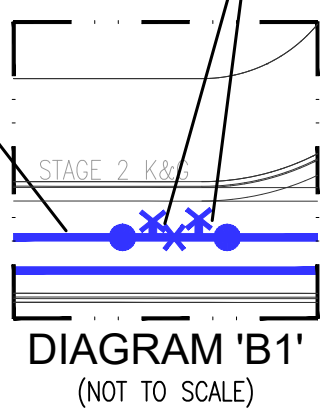
LAY DN250 (273 O.D.) S.C.L. MAIN IN
REINFORCED CONCRETE ENCASEMENT
0.45m OUTSIDE *FUTURE* HAZARD ZONE
*HAZARD ZONE FOR LIGHT RAIL UNDER
INFRASTRUCTURE WORKS PACKAGE*

LAY DN250 D.I.C.L. MAIN 1.0m FROM
FUTURE LIP OF KERB
*KERB TO BE CONSTRUCTED UNDER
INFRASTRUCTURE WORKS PACKAGE*



LAY DN250 (273 O.D.) S.C.L. MAIN IN
REINFORCED CONCRETE ENCASEMENT
0.45m OUTSIDE *FUTURE* HAZARD ZONE
*HAZARD ZONE FOR LIGHT RAIL UNDER
INFRASTRUCTURE WORKS PACKAGE*

- WATER/FIRE SERVICES TO PASS BELOW *FUTURE SWD*
*SWD TO BE CONSTRUCTED UNDER INFRASTRUCTURE
WORKS PACKAGE*



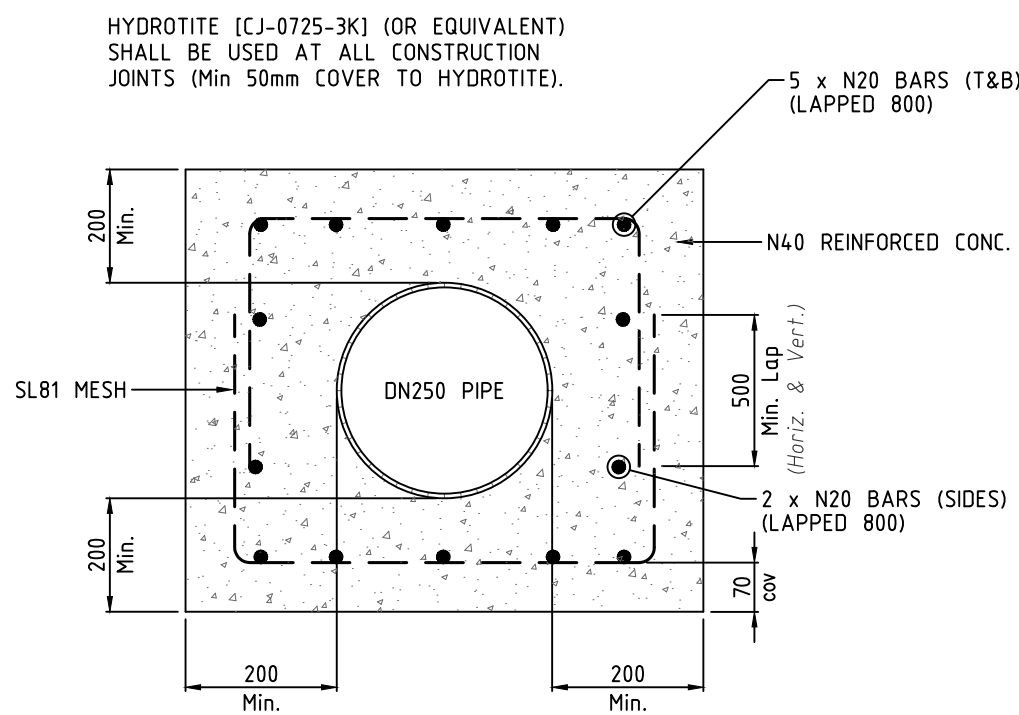
FL/FL/FL TEE & FL S.V.
- WATER/FIRE SERVICES TO PASS BELOW *FUTURE SWD*
*SWD TO BE CONSTRUCTED UNDER INFRASTRUCTURE
WORKS PACKAGE*

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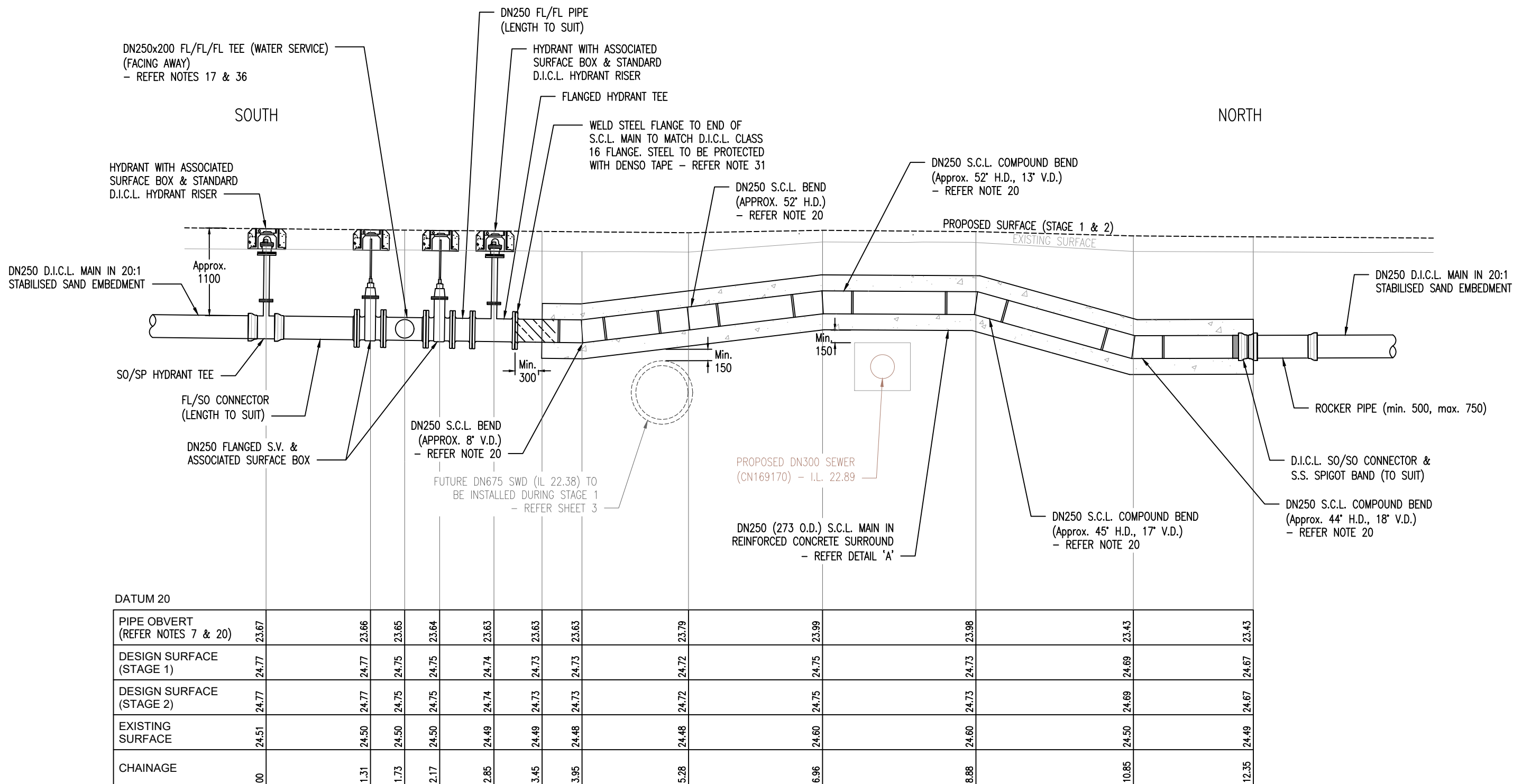
INFRASTRUCTURE WORKS OVERLAY

N.B. PROPOSED ADJUSTMENTS TO BE CONSTRUCTED PRIOR TO INFRASTRUCTURE WORKS
(Scale 1:500)

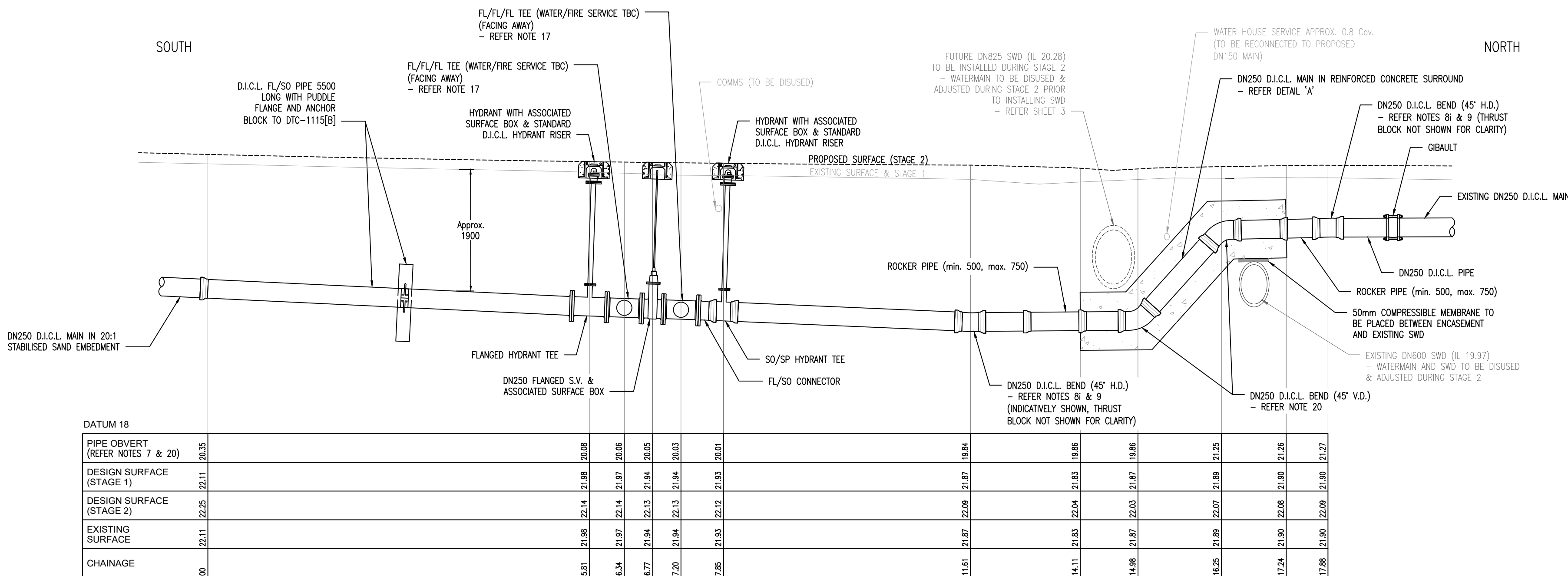
WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION	
DEVELOPER	W.S.C.	Sydney WATER	
CONSTRUCTOR	COMPLETED	Case No. 169169PW SHT 3 OF 4 SHTS.	
DESIGNER	I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS	SYDNEY WATER CORPORATION FOR DETAILS OF SERVICES SEE SHEET 1	



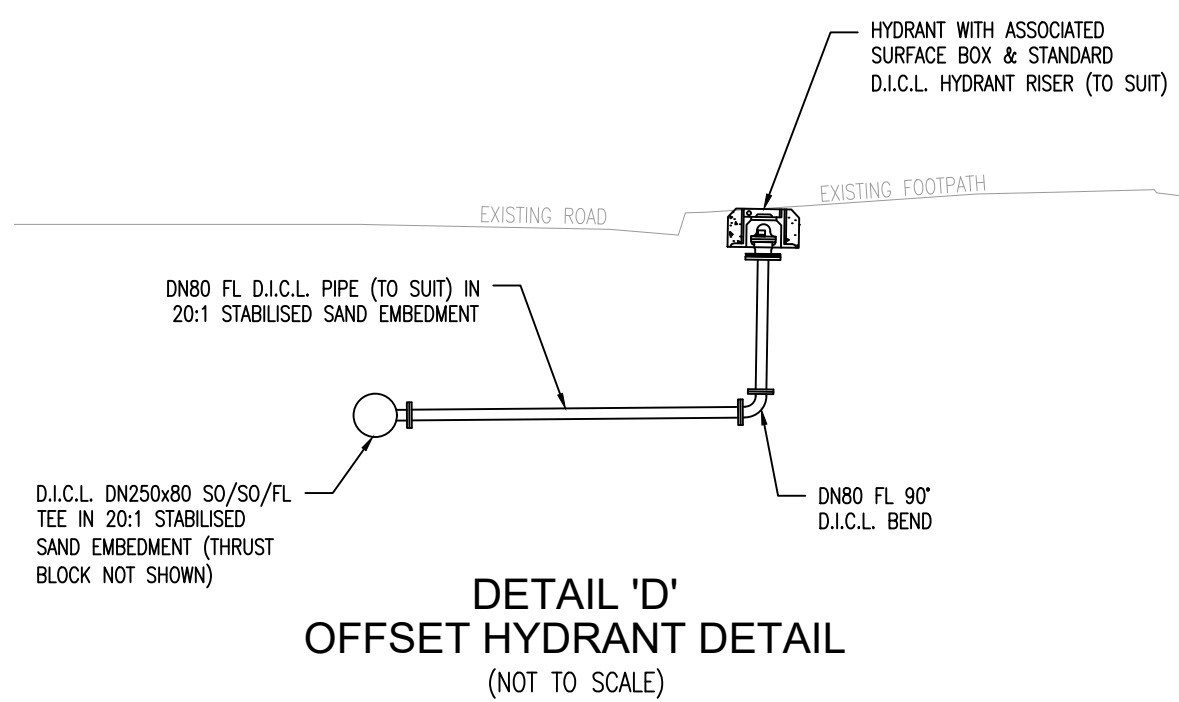
DETAIL 'A'
DN250 ENCASUREMENT DETAIL
(NOT TO SCALE)



DETAIL 'B'
DN250 VALVE ANCHORAGE & SEWER CROSSING
(NOT TO SCALE)



DETAIL 'C'
DN250 VALVE ANCHORAGE & SWD CROSSING
(NOT TO SCALE)



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Markus

WORK AS CONSTRUCTED CERTIFICATION		SYDNEY WATER CORPORATION	
DEVELOPER	W.S.C.	CONSTRUCTOR	Case No. 169169PW
COMPLETED	W.A.C. PREPARED	DESIGNER	SHT 4 OF 4 SHTS.
I CERTIFY THAT THE WORKS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE WORK AS CONSTRUCTED DRAWINGS		SYDNEY WATER CORPORATION FOR DETAILS OF SERVICES SEE SHEET 1	

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Item	Document No	Rev	Sts	Title	Alt Doc Number	Design Package No
1	PLR-HAC-HRW-NV-FRM-000001	C	07	PLR-HAC-HRW-OOHW-03 (Sydney Water) DPIE Submission		

Transmitted by: Megan Haberley, Transport for NSW