

Stacy Warren
Director Infrastructure
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

7 June 2018
Ref: 170108-ER-DPE-TSE-May 18

Dear Stacy

RE: Sydney Metro City & South West Chatswood to Sydenham CSSI 15_7400 – ER Monthly Report for May 2018 – TSE Contract

Healthy Buildings International (HBI) submits this report to the Secretary in accordance with:

- Condition A24 (I) of the Sydney Metro City & South West Chatswood to Sydenham CSSI 15_7400 Approval (9 January 2017) and associated modifications (MOD1_Victoria Cross and Artarmon (18 October 2017), MOD2_Central Walk (21 December 2017), MOD4_Sydenham Station and Metro Facility South (13 December 2017), and MOD 3_ Martin Place Metro Station (22 March 2018) ; and
- As required by the subsequent appointment as the approved Environmental Representative (17 February 2017);

The attached summary details the key activities undertaken by Environmental Representatives for Sydney Metro – City and South West Chatswood to Sydenham during the month of **May 2018**.

Yours sincerely



Michael Woolley
Environmental Representative

Cc: Sydney Metro: Fil Cerone, Matt Marrinan, Ben Armstrong, Stuart Hodgson, Nicole Williams, Adam Koutsamanis, Suzanne Saunders, Rob Muir (JHCPBG)
DPE: Swati Sharma, Rob Sherry, Elizabeth Williamson



| Summary of Contract Packages | Environmental Representative/s |
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| Demolition and Tunnel and Station Excavation (TSE) | Michael Woolley |
| Alternate | Jo Robertson / Annabelle Reyes |

| Key Construction Activities | |
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| Demolition and TSE | <p>Works conducted in May 2018 at the following sites are summarised below:</p> <p>Chatswood Dive Site and Artarmon Substation:</p> <ul style="list-style-type: none"> ➤ Chatswood dive site <ul style="list-style-type: none"> ○ Building of the tunnel dive involving installing concrete piles, building of the capping beam, excavating material and installing rock anchors ○ Removal of concrete and asphalt slabs with a jackhammer and removal of excavated material that cannot be reused on-site ○ Construction of driveways, internal roads and foundations for acoustic sheds and other tunnel infrastructure including spreading and compacting road base materials and pouring concrete ○ Installation of hoarding and various utility services to support site operations ➤ Nelson Street <ul style="list-style-type: none"> ○ Installation and commissioning of underground utilities and temporarily reinstating the works areas ➤ Rail corridor <ul style="list-style-type: none"> ○ Survey, utility and geotechnical investigations between Brand Street and Albert Avenue ➤ Out-of-hours works <ul style="list-style-type: none"> ○ Chatswood dive site <ul style="list-style-type: none"> ▪ Delivery and unloading of oversized plant and equipment ▪ Access of the site intermittently to load and unload materials required for out-of-hours works ○ Mowbray Road, Pacific Highway, Hampden Road and Nelson Street <ul style="list-style-type: none"> ▪ Identification, installation and commissioning of underground utilities on Mowbray Road, Hampden Road, Pacific Highway and Nelson Street involving saw cutting, excavating and backfilling trenches, installing conduits, installing/pulling cables and temporarily reinstating works areas ▪ Removal of a tree stump and a light pole on Mowbray Road ▪ Building of the permanent site exit driveway on Mowbray Road involving removing the existing kerb and footpath, minor earthworks and pouring concrete ▪ Installation of the banners on the hoarding on Mowbray Road and the Pacific Highway ▪ Installation of the temporary traffic and pedestrian management and establishing works areas ○ Brand Street between Hampden Road and the rail bridge <ul style="list-style-type: none"> ▪ Locating the existing underground utility services <p>Crows Nest Station:</p> <ul style="list-style-type: none"> ➤ Within and around the site <ul style="list-style-type: none"> ○ Continuing excavation of the station box to the north of Hume Street and on the bridging structure, involving high impact rock hammering work ○ Completion of the piling works in the southern portion of the site i.e. south of Hume Street including trimming piles using concrete saws and hammers |



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| | <ul style="list-style-type: none">○ Continuing construction of the concrete capping beam, which joins the piles together, around the perimeter of the site○ Shotcreting of the piles to form the walls of the station box○ Piling works on Clarke Lane○ Completion of the commissioning of the water treatment plant at 14 Clarke Street○ Relocation of the pedestrian detour that allows access to Hume Street from the Pacific Highway to accommodate piling works○ Continuing construction of the bridging structure across Hume Street including works to construct and pour the concrete deck○ Completion of the installation and commissioning of the second substation at 14 Clarke Street○ Commencement of the installation of the acoustic covers on the Hume Street bridging structure○ Installation of the survey and monitoring equipment within the site, on buildings and on roads around the site○ Continuing earthworks and load out of spoil and materials from site○ Continuing regular delivery of plant and materials○ Continuing concrete pours for piling and the Hume Street bridging structure <p>➤ Out-of-hours works:</p> <ul style="list-style-type: none">○ Around and within the site<ul style="list-style-type: none">▪ Installation of the survey and monitoring equipment▪ Delivery of the plant and equipment○ Hume St Between Clarke St and the Pacific Highway<ul style="list-style-type: none">▪ Commissioning of the second substation at 14 Clarke Street <p>Victoria Cross Station:</p> <p>➤ Victoria Cross South site</p> <ul style="list-style-type: none">○ Relocation of the sections of hoarding and installing art work on hoardings○ Installation of the retention (anchors)○ Breaking out ground for acoustic shed footings and station excavation○ Concrete works to build footings for the acoustic shed○ Completion of the construction of a wall around the site and a concrete capping beam○ Removal of the hazardous material from the site○ Continuing work on the stormwater modification in the Miller Street footpath○ Commencing works to install a high voltage kiosk near 187 Miller Street○ Commencing installation of the acoustic shed○ Installation of survey and monitoring equipment on buildings and roads <p>➤ Victoria Cross North site</p> <ul style="list-style-type: none">○ Completion of piling works around the excavation area○ Completion of the installation of fencing, hoarding and gates around the site perimeter○ Completion of the construction of a new driveway○ Continuing excavation to the east of the site for the haulage road and spoil area○ Commission of a high voltage kiosk near Miller Street○ Installation of the survey and monitoring equipment on buildings and roads <p>➤ Out-of-hours works</p> |
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- Around the sites
 - Mobilisation and delivery/removal of oversized equipment and materials
 - Installation of the traffic signage, survey and monitoring equipment
- Victoria Cross Station South site
 - Completion of the relocation of fencing and hoarding
 - Delivery of acoustic shed materials and a crane
 - Installation of survey and monitoring equipment on Miller and Berry Streets
 - Week starting 14 May (3 nights between 8pm and 5am)
 - Commencing installation of a high-voltage kiosk
 - Delivery of a crane and acoustic shed parts via Denison and Miller Streets
- Victoria Cross North site
 - Continuing to construct a new site entrance
 - Installation of survey and monitoring equipment

Blues Point temporary retrieval site:

- Comprehensive heritage and ecological investigations

Barangaroo Station:

- Hickson Road (between Dalgety Road and Windmill Street bridges)
 - Installation of an acoustic shed involving steel work, cladding and wall installation using large cranes and elevated work platforms.
- Dalgety Road and Munn Street
 - Installation of the monitors and survey points for future tunnelling activities (some of this work involves using small drilling rigs)
- Hickson Road (between Dalgety Road bridge and High St Steps)
 - Piling and steel works for the Hickson Road support structure
 - Civil works, high pressure grouting, piling, excavation and concreting activities
 - Installation of safety mesh over the Hickson Road wall
- Nawi Cove and Barangaroo foreshore
 - Installation of a new electrical substation for tunnel boring machines
 - Setting up the water and slurry separation plants
- Out-of-hours works
 - Hickson Road (between Dalgety Road and Windmill Street bridges)
 - Installation of an acoustic shed walls and cladding (weeknights, Saturdays and Sundays)
 - Deliveries of materials, plant and equipment
 - Hickson Road (between Dalgety Road bridge and High Steps)
 - Relocation of underground water and communications utilities involving saw cutting, excavating and backfilling trenches, installing conduits, installing/pulling cables and temporarily reinstating work areas
 - Removal of an overhead power cable
 - Deliveries of materials, plant and equipment
 - Corner of Sussex Street and Erskine Street
 - Installation of the underground electrical cables involving saw cutting, excavating and backfilling trenches, installing conduits,



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| | <p style="text-align: right;">installing/pulling cables and temporarily reinstating work areas</p> <p>Martin Place Station:</p> <ul style="list-style-type: none">➤ Bligh Street site<ul style="list-style-type: none">○ Deliveries of equipment, tunnelling machinery and materials to site○ Excavation to create a temporary access ramp○ Removal of excavated material from site○ Delivery and installation of steel structures and site amenities using a mobile crane○ Installation of hoarding○ Relocation of the utilities and installing an electrical substation ➤ Martin Place North site<ul style="list-style-type: none">○ Installation and removing scaffolding○ Ongoing structural demolition works and removing materials from site○ Utilities works including excavation and installation of conduits, cable installation and Ausgrid jointing works ➤ Martin Place South site<ul style="list-style-type: none">○ Installation of scaffolding and hoarding to prepare 39 Martin Place for demolition○ Pedestrian access changes near the worksite in Martin Place and the underground Shopping Circle○ Removal of hazardous materials○ Delivery of equipment and materials to and from site○ Removal of non-structural walls○ Establishing a tower crane including concreting, anchoring and craneage○ Relocation of utilities and decommissioning an electrical substation ➤ Out-of-hours works<ul style="list-style-type: none">○ Hunter, Castlereagh and Elizabeth streets Martin Place (between Elizabeth and Castlereagh streets)<ul style="list-style-type: none">▪ Installation of hoarding▪ Ausgrid pit inspections, utilities work including potholing, pit installation and trenching for conduit installation○ Castlereagh, Elizabeth, Bligh and O'Connell streets<ul style="list-style-type: none">▪ Oversized equipment deliveries and crane mobilisations for lifting equipment into sites▪ Installation of site amenities▪ Tunnelling excavation <p>Pitt Street Station:</p> <ul style="list-style-type: none">➤ Pitt Street North site<ul style="list-style-type: none">○ Site establishment works for the excavation phase○ Installation of concrete piles and capping beams around the site to support the ground during excavation○ Heritage investigations○ Installation of a substation kiosk and upgrading services on the corner of Pitt Street and Park Street○ Construction of the acoustic shed○ Excavation of the Pitt Street North shaft which will involve excavators and rock hammering ➤ Pitt Street South site<ul style="list-style-type: none">○ Site establishment for demolition○ Installation of the scaffolding and safety structures |
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| | <ul style="list-style-type: none">○ Removal of the hazardous materials, stripping out buildings and removing waste○ Construction of a driveway at 300 Pitt Street○ Structural demolition <p>➤ Out-of-hours works</p> <ul style="list-style-type: none">○ Pitt Street North<ul style="list-style-type: none">▪ Delivery of oversized plant, materials and equipment including crane○ Pitt Street South<ul style="list-style-type: none">▪ Construction of hoardings▪ Construction of driveways▪ Delivery of plant and equipment <p>Waterloo Station:</p> <p>➤ Waterloo Station site</p> <ul style="list-style-type: none">○ Construction of the piling platforms and foundations for various site facilities involving removing unsuitable material, delivering fill material to site and compacting the material using vibratory rollers.○ Delivery of worker facilities and water treatment plant.○ Installation of the concrete piles and building the capping beam around the station box to support the ground during excavation.○ Station box excavation works.○ Construction of a driveway layback to Raglan Street, involving excavation and concrete works.○ Vehicles starting to use the new driveways on Botany Road and Raglan Street. <p>➤ Botany Road, George, Wellington, Raglan and Cope streets</p> <ul style="list-style-type: none">○ Footpath drilling to install a monitoring device that will collect information from tunneling and excavation works. Prior to drilling, the team will carry out excavation activities to expose and identify underground services. <p>➤ Botany Road</p> <ul style="list-style-type: none">○ Removal of a tree near the bus stop using a chainsaw, stump grinder and mulcher.○ Upgrading the power supply to the site, involving trenching across footpath from a pole adjacent to the site office. <p>➤ Out-of-hours works</p> <ul style="list-style-type: none">○ Botany Road, Raglan and Cope streets<ul style="list-style-type: none">▪ Installation of new power poles, involving minor trenching and overhead cable works on Cope Street and Botany Road on Wednesday 2 May and Thursday 3 May 2018 between 7pm and 5am.▪ Replacement of faulty power pole on Raglan Street on Thursday 9 May 2018 between 7pm and 5am.○ Botany Road<ul style="list-style-type: none">▪ Installation of survey reflectors on Botany Road between John Street and the McEvoy Street intersection. The markers will be installed in the kerb or traffic lanes on Wednesday 2 May and Thursday 9 May 2018 between 7pm and 5am.▪ Delivery and unloading oversized plant and equipment via the site access on Botany Road.▪ Relocation of the bus stop near the Waterloo Congregational Church |
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| | <p>about 10 metres towards Wellington Street to provide a greater distance between the bus stop and a new driveway.</p> <p>Marrickville dive site:</p> <ul style="list-style-type: none"> ➤ Marrickville dive site and precast facility <ul style="list-style-type: none"> ○ Excavation of the dive area involving earthworks, concreting and rock anchoring works ○ Construction of piling rig pads ○ Installation of concrete piles and building the capping beam around the dive area to support the ground during excavation ○ Building internal roads involving saw cutting, concrete breaking, concreting works and spreading and compacting material ○ Continuing demolition of existing structures and removal of existing concrete and asphalt slabs involving hammering ○ Concreting works to establish tunnelling infrastructure, including a shed and conveyor footings ○ Ongoing installation of site hoarding and artwork ○ Temporary storm water diversion works ○ Concrete segment production within the acoustic shed ○ Ongoing construction of the precast facility and support infrastructure ○ Storage yard crane operation ○ 24-hour operation of the precast facility - planned for the end of May ➤ Lord Street, John Street, Edinburgh Road, Edgeware Road, Bedwin Road, Council Street, May Street and Princes Highway <ul style="list-style-type: none"> ○ Work at each joint bay to install the high voltage cable ➤ Out-of-hours works <ul style="list-style-type: none"> ○ Princes Highway <ul style="list-style-type: none"> ▪ Installation of temporary traffic and pedestrian management, and establishing work areas ▪ Installation of a new high voltage power cable involving some saw cutting, excavating and temporarily reinstating works areas ○ Edinburgh Road/Bedwin Road <ul style="list-style-type: none"> ▪ Investigative works as part of the Edinburgh Road/Bedwin Road intersection upgrade are planned for the end of May. This initial work includes potholing and investigation of existing services. ○ Marrickville dive site and precast facility <ul style="list-style-type: none"> ▪ Out-of-hours oversized deliveries |
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| ER Inspections | |
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| Demolition and TSE | <p>Weekly inspections continued under the management of the TSE contractor for the demolition sites. Sites inspected in May 2018 comprised:</p> <ul style="list-style-type: none"> ➤ Victoria Cross South – 22/05/2018, 08/05/2018 ➤ Victoria Cross North – 22/05/2018, 08/05/2018 ➤ Chatswood – 22/05/2018, 08/05/2018 ➤ Martin Place – 22/05/2018, 08/05/2018 ➤ Bligh Street – 22/05/2018, 08/05/2018 ➤ Crows Nest – 22/05/2018, 08/05/2018 ➤ Barangaroo – 15/05/2018, 01/05/2018, 29/05/2018 ➤ Pitt Street – 15/05/2018, 01/05/2018, 29/05/2018 ➤ Waterloo – 15/05/2018, 01/05/2018, 29/05/2018 |



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| | <p>➤ Marrickville – 15/05/2018, 01/05/2018, 29/05/2018</p> <p>ER Inspection reports have been prepared and issued to Sydney Metro and the TSE Contractor. Actions identified during the inspections comprised:</p> <ul style="list-style-type: none"> ➤ Inspection on 01/05/2018 <ul style="list-style-type: none"> ○ Marrickville - Erosion and sediment controls ○ Waterloo – Erosion and sediment controls, sediment staining on footpath ○ Barangaroo – Noise issue near childcare centre ➤ Inspection on 08/05/2018 <ul style="list-style-type: none"> ○ Chatswood – heritage and tree protection, erosion and sediment controls ○ Crows Nest – erosion and sediment controls ○ Martin Place – water used for dust suppression seeping through controls and flowing into the gutter on Castlereagh Street ➤ Inspection on 15/05/2018 <ul style="list-style-type: none"> ○ Marrickville – graffiti, erosion and sediment controls, general housekeeping ○ Waterloo – dirt on the road ➤ Inspection on 22/05/2018 <ul style="list-style-type: none"> ○ Crows Nest – erosion and sediment controls ➤ Inspection on 29/05/2018 <ul style="list-style-type: none"> ○ Marrickville – trucks queuing on Sydney Steel road (as identified by DPE Compliance Officer), erosion and sediment controls, chemical storage, alternative access point, ○ Waterloo – heritage protection (JHCPBG reported observed cracking of a wall in the church; and also reported exceedance of vibration alert levels); JHCPBG are to report back to the ER on the outcomes of this investigation. ○ Waterloo - heritage protection - fencing placed against the rear of the church. ○ Barangaroo – dirt tracking onto Hickson Road <p>Various notes were made in the reports reflecting commitments made by the TSE Contractors.</p> |
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| Endorsed Document/s | |
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| Sydney Metro | <p>The following documents were reviewed and endorsed by the ER with the assistance of Alternate ERs (not just specific to TSE related works):</p> <ul style="list-style-type: none"> ○ Tree Report - Rev Z ○ C&SW Construction Compliance Report 02 (Oct 2017 to Mar 2018) |
| TSE | <p>The following TSE documents were reviewed, comments provided to the TSE Contractor and Sydney Metro where relevant, and endorsed by the ER with the assistance of alternate ERs:</p> <ul style="list-style-type: none"> ➤ Construction Traffic Management Plans <ul style="list-style-type: none"> ○ CTMP Bligh Street Operations ○ CTMP Waterloo Operations ○ CTMP Crows Nest - Oxley Street ○ CTMP Pitt Street North Site Establishment ○ CTMP Pitt Street South Demolition - Amendment ○ CTMP Barangaroo Stage 3 Update ○ CTMP Barangaroo Bridge Works ➤ CNVIS <ul style="list-style-type: none"> ○ Waterloo Operations (Excavation) ○ Barangaroo Excavation ○ Pitt Street South Demolition CNVIS (Revision) ○ Martin Place South Demolition CNVIS (Revision) ○ Clyde Barging CNVIS (provided – under review) |



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| | <ul style="list-style-type: none"> ➤ Out of hours works (OOHW) approvals <ul style="list-style-type: none"> ○ Installation of reflectors in road – Botany ○ Cats Eyes Monitoring installation ➤ Site Establishment Plan <ul style="list-style-type: none"> ○ Pitt Street North SEP - Excavation of shaft ○ Waterloo SEP Rev 0 Bulk Excavation ○ SEP Sydney Park Geotech Investigation ➤ Other <ul style="list-style-type: none"> ○ Review of Archaeological Clearance Certificates at Pitt Street North ○ Review TSE Monthly Reports ○ Review of notifications and complaints |
| Demolition | <ul style="list-style-type: none"> ➤ Out of hours work approvals: <ul style="list-style-type: none"> ○ MP008 Hoarding |

| Complaints / Incidents / Non-compliance | |
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| TSE and demolition | <p>It is understood that Sydney Metro has been providing summaries of complaints to DPE daily. Responses to each complaint have been noted in each complaint report, with follow up actions often defined in revised reports.</p> <p>One complaint on 1 May at Crows Nest related to trucks parking outside the Childcare facility on Clarke Street at Crows Nest. The complaint report indicated that JHCPBG were unable to determine if the trucks were related to the project as the number plates were not identifiable from the pictures provided and there was no branding or markings on the vehicles. JHCPBG reported that the site has now allocated a traffic controller to check Clarke street prior to 7am to ensure trucks do not park on the street, which is not approved in the Construction Traffic Management Plan for the Crows Nest site.</p> <p>On 31 May 2018 at the Pitt Street South site there was a Service Strike - Contact with Fire Hydrant. JHCPBG reported that an excavator performing strip out activities within ground floor of 300 Pitt Street had contact with a fire hydrant and potable water left the site into Pitt Street. Traffic (including pedestrian) control was implemented and environmental controls were installed. The Environmental Representative attended the site at the time and observed controls implemented to manage the incident which were considered adequate. No material environmental harm was considered to have been caused. Sydney Water personnel were observed to isolate the pipe and stop the flow.</p> <p>A small turbid water discharge at Marrickville was reported to have occurred on 3 May 2018. A hose line to Water Treatment Plant from piling area broke and a minor volume of turbid water went into the rail corridor (approx. 3 m² area was affected). The area was inspected during the ER Inspection on 15 May which confirmed the low volume of sediment and small area of land affected.</p> <p>In the April ER Monthly report it was noted that Macquarie Bank identified on Saturday 7 April that their own vibration monitor in 9-19 Elizabeth Street (adjacent the Martin Place North site) had recorded vibration levels over 30mm/s. This was under investigation at the time of reporting. JHCPBG reported that <i>“Having reviewed the noise and vibration data provided by Metropolitan, there were no recorded exceedances at their monitors located in the basement and level 7 of 48-50 Martin Place. The Metropolitan vibration monitor originally located at 9-19 Elizabeth Street was moved on the 21/11/2017 to Level 9, 48-50 Martin Place at the request of Macquarie Bank to be closer to the demolition works being undertaken at the time. This monitor was subsequently removed on 30/01/2018 and relocated at level 7 48-50 Martin Place.”</i> The Metropolitan CNVIS</p> |



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| | <p>defined that a continuous noise and vibration monitor would be in place in 9-19 Elizabeth Street, hence removing the monitor is a non compliance with the CNVIS. It is noted that the 9-19 Elizabeth Street building is to be demolished, that no one was impacted as it was a Saturday (works were occurring in this location at the time to avoid impacts during the week), and it is understood that Macquarie Bank did not require any further action to be taken in relation to the exceedance. JHCPBG further noted that works were immediately stopped once identified and the number of machines working at this location adjacent to 9-19 Elizabeth St was reviewed and reduced; that the monitors located within 50 Martin Place were not triggered and levels were below the screening criteria in this building; and that the details of this event and follow up were clearly communicated with Macquarie Bank during regular fortnightly interface meetings and no further concerns were raised.</p> <p>Various unexpected finds were reported to the ER regarding encountering underground storage tanks at Marrickville and Crows Nest.</p> <p>As required of Condition E45, JHCPBG informed the ER of a concrete pour at Crows Nest going overtime on Saturday 19 May 2018.</p> <p>No incidents were reported to the ER or observed by the ER that would require reporting under Condition A41 (i.e. causing material harm).</p> |
| Sydney Metro | <p>There were no non-compliances/complaints received in relation to works undertaken directly by Sydney Metro.</p> <p>There were no incidents related to Sydney Metro conducted works as defined by the project approval definition for incidents reported to DPE under condition A41.</p> |

| Audits | |
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| TSE | Nil |
| Demolition | Nil |
| Sydney Metro | Nil |

| Looking Forward | |
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| Demolition and TSE | <p>Core Focus Areas for the month of June 2018 are:</p> <ul style="list-style-type: none"> ➤ Mud tracking from sites across the project, particularly in wet conditions. ➤ Historic heritage Investigations at Pitt Street. ➤ Noise and vibration management for works at Barangaroo, Crows Nest, Pitt Street, Martin Place and Victoria Cross TSE and demolition sites, specifically including review of CNVIS's for operations at a number of these sites; and ➤ Set up of mitigation controls as part of site establishment across all sites. |