

Independent Environmental Audit on Sydney Metro City & Southwest – TSE Works

Final Report

26 October 2018

Contract works: Tunnels and Station Excavation Works (TSE)

Scope: Planning Approval compliance relating to Construction Traffic Management

Reference: SM18.19-063-CSW-TSE-ENV

| | | | |
|----------------------------|----------------|--------------------|---------------------------------|
| Audit Organisation: | QEM Consulting | Audit Date: | 19 th September 2018 |
|----------------------------|----------------|--------------------|---------------------------------|



1. Executive Summary

1.1 Introduction

The purpose of this Independent Environmental Audit was to assess Principal Contractor John Holland CPB Ghella's Joint Venture (JHCPBG's) compliance against relevant Planning & Assessment Approvals associated with Construction Traffic Management for the City & Southwest project Tunnel, Stations and Excavation (TSE) works.

1.2 Background

Planning Approvals issued by the Department of Planning & Environment require Sydney Metro (formerly Transport for NSW) to develop an Environmental Audit Program for independent annual environmental auditing against the terms of the City & Southwest projects Critical State Significant Infrastructure (CSSI) Approval .

QEM Consulting Pty Ltd have been engaged by Sydney Metro Delivery Office (SMDO) Safety, Sustainability & Environment (SSE) to deliver a program of Independent Environmental Audits. As required by Planning Approval CSSI 15_7400 Ministers Condition of Approval (MCoA) A39 and the associated Environmental Audit Program, an Independent Environmental Audit was undertaken to assess JHCPBG compliance with relevant Planning Approvals associated with Construction Traffic Management in their delivery of Tunnel, Stations and Excavation (TSE) infrastructure construction works.

As background, Sydney Metro is delivering the Sydney Metro City & Southwest TSE works on behalf of the NSW Government, and have engaged JHCPBG JV to Design and Construct this phase of the Project.

1.3 Objective and Scope










The objective of the audit was to assess the implementation of the JHCPBG Construction Traffic Management Plan* in achieving compliance with Traffic Management Planning Approvals including MCoA E82 plus relevant Revised Environmental Mitigation Measures. Audit criteria also included contract-wide and site level implementation of relevant requirements and obligations documented in the Sydney Metro City & Southwest Construction Traffic Management Framework* (required by MCoA E81) and the Construction Environmental Management Framework* (CEMF). The audit scope included the following focus areas:

- Martin Place and Blight Street project worksite interfaces and surrounding suburban precinct arrangements;
- TSE site records;
- Construction Traffic Management Plan(s) development and approval;
- Construction Traffic Management Framework (CTMF) / Construction Traffic Management Plan (CTMP) implementation; and
- Approval & regulatory compliance records.

* Assessed versions of documents current at the time of audit are indicated in Appendix 1.

1.4 Summary of Findings

The table below provides a summary of key findings noted in this audit and the priority assigned to these findings.

| Ref | Description | Priority* |
|--------|--|--|
| NP 1-2 | A number of strengths and notable practices were observed, including but not limited to: <ul style="list-style-type: none"> Telematics system enabling real-time GPS tracking of haulage truck driver compliance Comprehensive Road Safety Audit Reports of practical focus. | N/A  |
| 1. | There was no definitive traffic, public or pedestrian related Incident Response Plan or associated incident preparedness demonstrating “ <i>incident response planning around construction worksites</i> ” required by MCoA E81 o). |  |
| 2. | The contract-wide Construction Traffic Management Plan (CTMP) had not been maintained to facilitate JHCPB’s “ <i>approach to managing traffic and related issues</i> ” with some inconsistencies noted with the Sydney Metro City & South West Construction Traffic Management Framework (CTMF) required by MCoA E81 and E82 respectively. |  |
| 3. | Project compliance data demonstrating truck movement minimisation during peak periods required by Planning Approvals, whilst available, was not being collated, reported and reviewed. |  |
| 4. | The formal process of communicating significant haulage route change management to trucking companies and truck drivers could not be demonstrated as yet, anticipated though for a change to the Bligh Street site operation, the CTMP of which had just been endorsed at time of audit. |  |
| 5. | Supporting evidence demonstrating “cumulative construction vehicle management from surrounding developments” or “potential combined impact of trucks from multiple construction sites” required by MCoA 81 (d) and REMM T21 was not readily available. |  |
| 6. | Not all utilised Road Safety Auditors were registered with TfNSW as Registered NSW Road Safety Auditors, as required by the JHCPBG project-wide CTMP. |  |
| 7. | Traffic Control Plan Checklists used to conduct site inspections of TCP/ROL implementation did not always evidence required RMS TCAWS Manual monitoring frequencies i.e. set up, mid-shaft and pack-up. |  |
| 8. | Traffic functions were not engaging in the quarterly Environment Planning Approval Compliance Tracking and reporting process. |  |

* Priority Definition enclosed as Appendix 2

1.5 Overall Assessment

This section summarises the outcomes of the Independent Environment Audit of JHCPBG's implementation of the Construction Traffic Management Plan (CTMP) in achieving compliance with relevant Planning Approvals and Revised Environmental Mitigation Measures. The audit conducted on the 19th September 2018, included a brief Martin Place and Bligh Street site-precinct inspection, followed by a project-wide traffic management assessment.

Overall, the audit evidenced that countless site-specific CTMPs had been, and were being, developed and implemented to manage the impacts of construction traffic including that of haulage truck movements and deliveries, the latter also involving very large plant and equipment. As required by Planning Approvals, Project Deed and numerous other stakeholders, each CTMP evidenced associated consultation, document revision and project Environmental Representative endorsement prior to implementation. At a site level, the audit evidenced Traffic Controllers being used, plus availability of Traffic Control Plans and traffic control inspection records. Regarding haulage, Heavy Vehicle drivers had undertaken project required training, this supplemented by formal JHCPBG Driver Code of Conduct acknowledgements.

At a project level, strengths included a telematics system enabling real-time GPS tracking of haulage truck driver compliance with designated haulage routes, plus truck marshalling and site arrival-frequency moderating arrangements. Additionally Road Safety Audits conducted by a registered service provider were noted as being thorough and practically orientated. A project-wide CTMP had been developed at the start of the Tunnel, Stations and Excavation (TSE) contract, but although informing some management practices, not all current processes, procedures and tools were articulated.

Notwithstanding the above, two (2) non-compliances against Planning Approvals were raised, these relating to a project approach to construction traffic management requirements. In summary, the contract-wide CTMP had not been maintained and did not cover all Sydney Metro City & South West Construction Traffic Management Framework (CTMF) specified contractor obligations to satisfy associated Ministers Condition of Approval (MCoA) E81. Also, there were some inconsistency issues between site-specific / project-wide Management Plans and the CTMF. Secondly, neither the project-wide or site-specific CTMP(s) adequately addressed Ministers Condition of Approval E81 o) pertaining to traffic incident response planning around construction sites. Whilst traditional Work Health Safety and Environment focused incident management documentation was available, and administrative arrangements with the Sydney Coordination Organisation and/or Traffic Management Centre were known, preparation (including equipment availability) and practical JHCPBG response protocols pertaining to traffic incidents had not been fully progressed. As per the mandate defined in MCoA A39 c) and d), the Independent Environmental Auditor noted that documentation around traffic incident responses appeared inadequate, and was not up to contemporary standards established by other principal contractors and/or other significant infrastructure delivery projects.

In conclusion, the audit determined that formal processes and documentation were mostly established to manage, control and minimise construction traffic related impacts and ensure compliance with approval obligations, this over a large geographical reach including complex project-public interfaces. It is thought that, if thoroughly addressed, actions to identified non-compliances will further enhance a systemic and consistent approach to traffic management, as well as mitigating risks and disruptions around potential construction related traffic incidents.




Report Author (& Auditor):

L J Weiss
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2. Detailed Findings and Agreed Action Plan

2.1 Audit Findings & Action Plan

This section of the report provides details of audit findings and the agreed action plan, including allocation of responsibility and timeframes.

| Ref | Audit Finding | Risk or Impact | Classification (and Priority) | Action Plan |
|-----|--|---|--|--|
| | <i>Positive observations / strengths:</i> | | | |
| NP1 | A C Track telematics system provided real-time GPS tracking of haulage trucks, enabling monitoring of designated haulage route compliance and truck marshalling arrangements. Historical reports provided by haulage companies were routinely analysed to assess and correct compliance issues including adherence to designated haulage routes. | |  | N/A |
| NP2 | Road Safety Audits Reports of operational arrangements conducted by a specialist service provider were professional and comprehensive, assessing practical compliance and/or weaknesses requiring attention. | |  | N/A |
| | <i>Audit Findings requiring action:</i> | | | |
| 1. | <p>There was no definitive traffic, public or pedestrian related Incident Response Plan or related proactive incident preparedness demonstrating “<i>incident response planning around construction worksites</i>” required by Planning Approval MCoA E81 o).</p> <p><u>Planning Approval Requirement satisfaction:</u> <i>MCoA E81 commitments defined in the Sydney Metro C&SW Construction Traffic Management Framework (CTMF), requires the TSE Contractor to develop an Incident Management Plan for on-road incidents or incidents that impact the public transport network to be developed and submitted to TMC for review and comment.</i></p> <p>Refer to section 2.2 further in this report for substantiating Audit Details.</p> | Safety Public Regulatory Media | <p>Non-compliant with MCoA E81 o)</p>  | <p>Post-audit, and subsequent to finalising <u>this</u> report JHCPBG indicated that site-specific CTMPs were including a section on incident management</p> <p>Further action to be taken by JHCPBG:</p> <ol style="list-style-type: none"> Develop a contract-wide Incident Management Plan addressing responses and planning around construction traffic related incidents; Implement preparedness planning arrangements at all sites including documentation, records of training / awareness and equipment provision. <p>Responsible person: Traffic & Transport Manager, Sue Lewis</p> <p>Due date: Before 30 November 2018</p> |

| Ref | Audit Finding | Risk or Impact | Classification (and Priority) | Action Plan |
|-----|---|--------------------------------------|--|---|
| 2. | <p>The contract-wide Construction Traffic Management Plan (CTMP) had not been maintained to facilitate JHCPB's "approach to managing traffic and related issues" there also being some inconsistencies noted with the Sydney Metro City & South West Construction Traffic Management Framework (CTMF), being MCoA E81 and E82 requirements respectively.</p> <p>The audit also noted that the contract-wide CTMP:</p> <ul style="list-style-type: none"> Had not been updated beyond "Issue for Construction" and/or Tender submission status of July 2017; Was a primary reference regarding contract-wide Environment Planning Approval compliance reporting in satisfaction of MCoA A28. <p><u>Abbreviated Planning Approval Requirements:</u> MCoA E81 commitments defined in the Sydney Metro C&SW CTMF requires the TSE Contractor to develop a contract-wide CTMP and implement relevant CTMF requirements. MCoA requires CTMP's to be consistent with the CTMF</p> <p>Refer section 2.2 further for substantiating Audit Details.</p> | Public Commuters Regulatory | <p>Non-compliant with MCoA E81 MCoA E82</p> <div style="background-color: yellow; border: 1px solid black; padding: 5px; text-align: center; font-weight: bold;">Medium</div> | <p><i>Post-audit, and subsequent to finalising <u>this</u> report JHCPBG had:</i></p> <ul style="list-style-type: none"> Developed a CTMP-specific Planning Approval Compliance Table to facilitate compliance obligations; Incorporated this Compliance Requirements table into the draft Frank Channon Walk Closure CTMP. <p>Further action to be taken by JHCPBG:</p> <ol style="list-style-type: none"> Review and update the contract-wide CTMP to reflect current project arrangements and procedures, plus address and/or clarify any CEMF or Planning Approval compliance obligations. Align future site-specific CTMP's with Contract-Wide CTMP requirements, utilising and including the CTMP Compliance Requirements table. <p>Responsible person: Traffic & Transport Manager, Sue Lewis</p> <p>Due dates:</p> <ol style="list-style-type: none"> 30 November 2018 Now and ongoingly |
| 3. | <p>Project compliance data demonstrating truck movement minimisation during peak periods required by Planning Approvals MCoA E80, MCoA 81 k) & REMM T13 and the contract-wide CTMP section 5.1 was not being collated, reported and reviewed.</p> <p><i>The audit observed site-based Traffic Controller logs on the day, evidencing truck movement minimisation during peak periods (7-10am and 4-7pm Monday to Friday) as well as the potential for extracting data from the C track telematics system.</i></p> | Community disruption & Public Safety | <div style="background-color: #90EE90; border: 1px solid black; padding: 5px; text-align: center; font-weight: bold;">Low</div> | <p>Action to be taken by JHCPBG: Sites to establish and implement systems to collate and report truck movement data against site-specific CTMP predictions and commitments.</p> <p>Responsible person: Senior Project Engineer, Dana Regan</p> <p>Due date: 14 December 2018</p> |

| Ref | Audit Finding | Risk or Impact | Classification (and Priority) | Action Plan |
|-----|--|------------------------------------|-------------------------------|--|
| 4. | The formal process of communicating haulage route change management to trucking companies and truck drivers could not be demonstrated as yet, the Bligh Street CTMP endorsed the day prior to audit indicated as being able to evidence this. | Public Safety & Traffic congestion | OFI | <p>Action to be taken by JHCPBG: Provide records of JHCPBG communications to trucking companies and driver briefings upon approval of the revised CTMP for Bligh Street</p> <p>Responsible person: Traffic & Transport Manager, Sue Lewis</p> <p>Due date: 9 November 2018</p> |
| 5. | <p>Whilst addressed as narrative in site-specific CTMP's, supporting evidence demonstrating "<i>cumulative construction vehicle management from surrounding developments</i>" or "<i>potential combined impact of trucks from multiple construction sites</i>" required by MCoA 81 (d) and REMM T21 respectively was not always readily available.</p> <p><u>REMM Requirement:</u> <i>The potential combined impact of trucks from multiple construction sites to be considered during the development of Construction Traffic Management Plans.</i></p> | Community & Traffic congestion | Low | <p>Action to be taken by JHCPBG: TCG meeting minutes and associated JHCPBG reports tabling cumulative analysis details and recommendations to be provided.</p> <p>Responsible person: Traffic & Transport Manager, Sue Lewis</p> <p>Due date: 9 November 2018</p> |
| 6. | <p>Not all Road Safety Auditors utilised by Victorian domiciled Road Safety Audits Pty Ltd were registered with TfNSW as Registered NSW Road Safety Auditors, as required by contract-wide CTMP section 3.3.1</p> <p><i>It was acknowledged that at least one Auditor nominated in various Road Safety Reports sighted was NSW registered, the reports noted during this audit as being thorough and comprehensive</i></p> | Vehicle, Community & Public Safety | Low | <p><i>JHCPBG contacted the service provider on the day of the audit to ensure this did not recur.</i></p> <p>Further Action to be taken by JHCPBG: Solicit correspondence from RSA confirming the provision of NSW registered Auditors to future assignments, and ensure that Road Safety Audit Reports reflect required registrations.</p> <p>Responsible person: Traffic & Transport Manager, Sue Lewis</p> <p>Due date: 30 November 2018</p> |

| Ref | Audit Finding | Risk or Impact | Classification (and Priority) | Action Plan |
|-----|---|------------------------------------|-------------------------------|--|
| 7. | Traffic Control Plan Checklists used to conduct site inspections of TCP/ROL implementation and related requirements did not always evidence required RMS TCAWS Manual monitoring frequencies i.e. set up, mid-shaft and pack-up. | Public Safety & Traffic congestion | Low | <p>Action to be taken by JHCPBG:</p> <ul style="list-style-type: none"> a) Checklist TM-CKL-067389 rev 01 to be revised to ensure 3 inspections (i.e. set up, mid-shaft and pack-up) are conducted as required by the RMS TCAWS Manual b) Remove obsolete Checklists from use and implement new arrangements. <p>Responsible person: Traffic & Transport Manager, Sue Lewis</p> <p>Due date:</p> <ul style="list-style-type: none"> a) <i>JHCPB reported as complete (not verified though)</i> b) 31 October 2018 |
| 8. | Traffic & Environmental functions were not actively engaging in updating the quarterly Environment Planning Approval Compliance Tracking in satisfaction of MCoA A28, with references to the applicable section of the contract-wide CTMP not always substantiated by compliance records. | Regulatory | OFI | <p>Action to be taken by JHCPBG: Traffic Management function to be involved in the compliance tracking and reporting process, facilitating supply of supporting evidence.</p> <p>Responsible person: Environment, Approvals, Sustainability and Interface Manager, Anne Anderson</p> <p>Due date: From 14 December 2018</p> |

* Priority Definition enclosed as Appendix 2

2.2 Assessment Details

The following section of this report provides narrative of plans, methodologies, procedures, systems, processes and activities assessed to determine compliance (or otherwise) with required project obligations and outcomes. Specific documentation, information and records details are captured in Appendix 1 further.

Construction Traffic Management Framework / CTMP implementation:

Compliance issues noted in support of Audit Finding #1 (**Traffic Incident Response Planning**) include but are not limited to the following:

| | | |
|----|-------------|--|
| a) | MCoA E81 | Construction Traffic Management Framework (CTMF) s8.3 requires an Incident Management Plan for on-road incidents or incidents that impact the public transport network to be developed and submitted to TMC for review and comment. Examples of incidents include traffic crashes, hazardous materials spillage, flooding and structural damage to a railway line, building, or a tunnel bridge. ALSO the CTMF requires procedures for attending workers, contacting emergency services and equipment readiness. |
| b) | MCoA C1 | No site awareness, preparedness (drills) and on-site/project emergency equipment was available or produced, evidencing required "response planning" required by the CEMF and JHCPBG CEMP s10.3 (and ISO 14001). |
| c) | MCoA E81 o) | The Emergency Response Plan 02081 sighted by the auditor did not fulfil above-mentioned requirements, with a graphic image depicting a one pager stakeholder escalation sequence pertaining to administrative notification processes predominantly. Also, this document was very worker-safety- centric with Duty Cards not addressing any practical responses to construction related traffic accidents. |
| d) | MCoA E81 o) | A 1-page Emergency Response Process Flow Chart SMCSWTSE-JCG-TPW-HS-APP-005072-00 tabled was again mainly focussed around management of a general incident, the only practical response was a non-traffic environment scenario i.e. ➤ "controlling source and containing from getting bigger or protecting what is not damaged" |
| e) | MCoA E81 o) | Practical responses contained in the Contract-Wide CTMP TPW-EM-PLN-002013 was limited to 3 bullet points regarding resource provision, re-opening lanes, implementing warning signs etc. |
| f) | MCoA E81 | Both the Sydney Metro City & South West Construction Environment Management Framework (CEMF) <u>and</u> Construction Traffic Management Framework (CTMF) commit to a Contract-Wide CTMP to cover the full extent of the works. The latter also requires compliance with RMS specifications including WAD requirements around a Traffic Management & Safety Plan. |
| g) | MCoA E82 | Site specific CTMPs do not detail HOW several MCoA E81 and CTMF requirements will be addressed including but not limited to incident response planning (limited to an unpopulated site contact list), |

Apart from the above-mentioned, there was generally good records of traffic management arrangements been implemented, including JHCPBG inspections and specialist service provider Road Safety Audits.

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Assessment Detailed Notes (continued)

Construction Traffic Management Plan development and approval

Compliance issues noted in support of Audit Finding #2 (**Contract wide CTMP**) include but are not limited to the following:

| | | |
|----|-----------|---|
| a) | MCoA E81 | <p>Sydney Metro City & South West Construction Traffic Management Framework (CTMF) requires the TSE Contractor's <i>"approach to managing traffic and related issues"</i> be documented and implemented by contract wide CTMP. A contract-wide CTMP (TPW-EM-PLN-002013) dated July 2017 had been written, and had undergoing stakeholder consultation / review, however this CTMP:</p> <ul style="list-style-type: none"> • Had not been updated beyond "Issue for Construction" status, with site layout / access drawings being Tender versions • Current processes and arrangements** and project-wide initiatives had subsequently evolved, as had stakeholder requirements • Was not published on the JHCPBG website, as were other Management Plans • Had not been implemented with regards to Parking Management Plans per the CEMF, as described by PLN-002013 s9.1.5 • Did not provide comprehensive compliance tables, resulting in key obligations such as CTMF s8.3 requirements around an Incident Management Plan being missed <p>** For example, aspirational statement of Inspections s10.1 viz. daily inspections and TCP checking in accordance with RMS Traffic Control Work Sites Manual was practiced but the use of customised forms around this process were not articulated</p> |
| b) | MCoA E82. | <p>Planning Approval MCoA E82 requires site-specific CTMPs to be consistent with the Sydney Metro City & South West CTMP and Construction Environment Management Framework (CEMF) of MCoA E81. Evidence did not always substantiate this, for example</p> <ul style="list-style-type: none"> • CEMF requirements describing the PROCESS for the development of documentation such as Pedestrian Management Plans (with content depicting travel paths around construction sites) and Parking Management Plans (loss of parking, content addressing remote and on-site measures and communication measures) not readily evidenced • No evidence of "each CTMP identifying pedestrian and cycle routes" per PLN-002013 s9.1.1 • Inconsistency in format, affecting coverage, between site-specific CTMPs i.e. Weekly Traffic Forecasts was section 2.5 in some CTMP's (but Barangaroo PLN 2258 appeared missing), Parking addressed in PLN Pitt Street PLN 2285 (missing from others such as 2258) etc. • Limited detail on HOW several MCoA E81 and CTMF requirements would be managed including but not limited to incident response planning (limited to an unpopulated site contact list), road safety audits (reference to appended desktop review only) and peak period traffic minimisation (aspirational statements for compliance with modelling and predictions) etc. • Contract-wide CTMP varied significantly in structural layout and content with Site-Specifics, with little obvious alignment between contract-wide approach, and site specific considerations. |

Otherwise, a tremendous effort was apparent in the development of countless site-specific Construction Traffic Management Plans (CTMPs) progressively developed over site / project stages, evidencing increasing level of detail and/or decision-making criteria, with content informing practical controls and outcomes.

Assessment Detailed Notes (continued)

Martin Place and Blight Street project worksite interfaces and surrounding suburban precinct arrangements;

Peak period truck movements briefly observed from / to Bligh Street and the Martin Place South sites were efficient and minimally disruptive, with day time pedestrian movements controlled by licenced Traffic Controllers. Tracking movement logs maintained by said Traffic Controllers evidenced reasonable / light volumes during peak hours. These are not collated into project compliance records though, an Audit Finding. Signage observed was commensurate with that defined in Traffic Control Plans, there being no obvious line-of-site issues on the day or scaffold clothing snagging points. No VMS's were in place, or general traffic signs beyond the ingress/egress points.

Site records

Records were generally available on request, refer Information/Records section of the Appendix below. These included traffic safety inspections, toolbox talks and Traffic Controller tickets to name a few.

Approval compliance records

In general most records were available e.g. inspections, competencies and monitoring. Apart from RMS, ER and Sydney Coordination Authority CTMP related approvals, there were some weaknesses around collation and/or availability of project management level records such as minutes of meetings and compliance summary data. Telematics (GPS Heavy Vehicle haulage) information and contractor reports was a strength though, as was non-conformance identification in this space.

Appendix 1: Audit information

The following indicates key systems, documents, reports, information and records that were reviewed, accessed or sighted during the audit process:

| Documentation | Information / Records |
|--|---|
| 0. Sydney Metro Planning Approval related documentation | |
| Sydney Metro City & Southwest Construction Traffic Management Framework (CTMF) v2.5 dated 18/12/2017 | |
| Sydney Metro City & Southwest Construction Environmental Management Framework (CEMF) v3.1 dated 15/08/2016 | |
| 1. Worksite / surrounding precinct interface arrangements | |
| CTMP JCG-SMP-TM-PLN-002318-D Bligh St Site Operations, dd 23/4/18 | Current Traffic Controller qualifications for Kidone A, Laura P, Shakira M and Dean G |
| TCP SP-0204 dated 14/6/18 for O'Connell Street Access Control | Truck Register, Bligh Street and Delta Material Disposal Running Sheets, 18/9 & 19/9 |
| Generic Plan, Pedestrian Footpath Management TYP-0000-02 dated 15/11/17 | |
| 2. Site records | |
| Traffic Route Diagram, Martin Place, PMA-017-03 rev 7 | Haulage Contractor (State Road) Toolbox Talk dd 10/9/18 re new Marrickville entry |
| | Photograph of Hickson Road VMS in use, nightworks |
| | HV Driver Code of Conduct 04218 acknowledgements for haulage company drivers, Baker's #1487, DS Trans #2298 and EPH #5854 |
| | Bligh Street ROL's #1027778, #1027772, #1012478, #1027768 and #1027784 |
| | TCP's associated with ROL's (above) |
| | City of Sydney (Structural) Hoarding Permit B/2018/54 dated 20/3/18 |
| 3. Construction Traffic Management Plan(s) development and approval | |
| Construction Environmental Management Plan PLN-000817-05 dd 15/11/17 | CTMP Status Tracker dd 28/8/2018 |
| Contract wide CTMP (TPW-EM-PLN-002013) dated July 2017 | Sydney Coordination Office Barangaroo CTMP Stage 4, rev E approval dated 11/7/18 |
| CTMP PLN-002318, Bligh Street Site Operations rev E dated 20/8/18 (for approval) | Approvals & endorsement attached to referenced CTMPs e.g. ER dd 10/8 of above |
| SMCSWTSE-JCG-SMP-TM-PLN-002279-D Martin Place Stage 1 | Design Stage Road Safety Audits, attached to referenced CTMP's (alongside) |
| SMCSWTSE-JCG-SPS-TM-PLN-002285-C Pitt Street North Operations, dd 19/6/18 | TCP's attached to referenced CTMP's (alongside) |
| SWTSE-SMD-P GEN-001232-Martin Place CTMP Stage 3 version A 1209/18 | |
| CTMP PLN-002258, Barangaroo Stage 4, rev E dated 3/7/18 | |

| | |
|--|---|
| 4. Construction Traffic Management Framework & CTMP implementation: | |
| Emergency Response Plan TPW-GN-PLN-002081 | TSE-023 JHCPBG-AU-R-06_IC Audit Report of Barangaroo CTMP |
| Emergency Response Flowchart TPW-HS-APP-005072-00 (undated) | Road Safety Audits Pty Ltd, Road Safety Audit Report, multiple sites, dated 17/9/18 |
| Traffic Management Public Roads SFP-081020 rev1 dated 15/4/18 | Road Safety Audits Pty Ltd, Road Safety Audit Report, Barangaroo stage I, of 29/3/18 |
| Chain of Responsibility Management Plan PLN-002164 rev0 dated 13/9/17 | Road Safety Audits Pty Ltd, Road Safety Audit Report, Barangaroo stage 4, 10/5/18 |
| Work Area Plan Risk Assessment (spreadsheet) | NSW RSA registration records for Raj M, Peter H etc. |
| | Heavy Vehicle Haulage Report as at September 2018 |
| | C Track telematics (live interrogation) tracking driver "Tamer" enroute to O'Connell Str |
| | Bulk Civil Activity Report by Vehicle for 5/9/18 for registration SIK 550 |
| | Haulage Compliance Report 28/8/18 @ 09:56 |
| | Twice Daily Checklists for PLN-002258 of 16/9/18, PLN-002259 dated 9/9/18 and TCP 11/83/61 dated 9/9/18 including related photographs |
| | Current JHCPBG TMP Preparation & Inspection qualifications for SL, SJ, MK & DM |
| | Sites Traffic Management Meeting record of 1/6/18 |
| | Traffic Committee Process (undated) |
| | |
| 5. Approval & Regulatory compliance records | |
| | Completed 2018 Traffic Control Plan TCAWS checklists (CKL-067389) of Crows Nest (14/9), , Victoria South (6/7), Hickson Road (4/7, 9/7, 26/7 and 15/8), O'Connell Street (2/8), Elizabeth Street (20, 21 & 23/8 |
| | ROL's and inspection related photographs in support of the above |
| | Arcadis Traffic modelling reports |
| | |

Appendix 2: Priority Definition

The priority for findings raised in this report is described in the table below.

| Priority | Definition | Guidelines for Implementing Actions |
|--------------------|---|--|
| Very High | A significant control weakness / issue or fundamental non-compliance that exposes the project or area under review to a very high level of risk | Requires immediate management attention, with actions plans to be developed and enforced within an agreed time frame. The matter will be escalated immediately to senior management from all parties |
| High | A control weakness / issue or non-compliance that may expose the project or area under review to a high level of risk | Action plans to be developed and implemented within an agreed time frame. The matter will be escalated to relevant senior executives where it is deemed necessary |
| Medium | A control weakness / issue or non-compliance that may expose the project or area under review to a moderate level of risk | Action plans to be developed and implemented within an agreed time frame |
| Low | A control weakness / issue or non-compliance that may expose the project or area under review to a low level of risk | Action plans to be developed and implemented within an agreed time frame |
| OFI | Opportunity For Improvement (OFI) – opportunity to implement a good or better practice to improve efficiency or further reduce exposure to risk | Suggestion to be considered for implementation |
| Observation | Good Practice – process / system in place and implemented effectively across business. | Maintain to current standard. Share with other areas of business. |

Appendix 3: Personnel Consulted and Timeline

We would like to extend our appreciation to the following individuals involved this audit:

| Name | Title |
|-----------------|---|
| Suzanne Lewis | Traffic & Transport Manager, JHCPBG |
| Declan McGarry | Senior Project Engineer / Traffic Engineer, JHCPBG |
| Robert Thompson | Safety Systems Manager, JHCPBG |
| Peter Shepherd | Senior Project Engineer Tunnelling, JHCPBG |
| Charles McLean | Quality Co-ordinator, JHCPBG |
| Chris Classnitz | Senior Project Engineer, JHCPBG |
| Pam Tummers | Environment & Sustainability Manager, TSE IG, Sydney Metro C&SW |
| Berin Gordon | Logistics Manager, TSE IG, Sydney Metro C&SW |
| Ken Hind | Transport Planning Advisor, Sydney Metro |
| Others: | Refer Attendance Register (Appendix below) |

The Audit timeline is shown in the table below.

| Milestone | Date |
|--------------------------------|-------------------|
| Briefing Meeting | 24 August 2018 |
| Issuance of Terms of Reference | 24 August 2018 |
| Desktop Audit | 31 August 2018 |
| Audit | 19 September 2018 |
| Issuance of Draft Report | 18 October 2018 |
| Issuance of Final Report | 26 October 2018 |

Appendix 4: Audit attendance register

QEM AUDIT ATTENDANCE REGISTER

| AUDITEE: TSE, JHCPBG-JV AUDIT: Independent Environmental Audit no. SM18.19-063-CSW-TSE-ENVNV | | | 140 Sussex Street, Sydney Project Office attendance | |
|---|---|--------|--|--------------------|
| SITE(s): Martin Place, South and Bligh Street | | | -OPENING AUDIT | CLOSING |
| | | | 19/9/2018 | 21/9/2018 |
| NAME (print) | POSITION & ORGANIZATION | | | |
| Larry Weiss | Independent Environment Auditor | QEM | <i>[Signature]</i> | <i>[Signature]</i> |
| F OVAL | IC | P.E | — | <i>[Signature]</i> |
| Anne Anderson | Enviro, Approvals, Sustainability + Interface Project | JHCPBG | — | <i>[Signature]</i> |
| Pam Tumbers | Environmental & Sustainability | SM | P.Tumbers | P.Tumbers |
| S Lewis | Traffic Manager | JHCPBG | <i>[Signature]</i> | <i>[Signature]</i> |
| D Mc Garry | SPE | " | <i>[Signature]</i> | <i>[Signature]</i> |

Appendix 5: Audit Credentials

Audit process

This Independent Environment Audit comprised an off-site desktop review, a one (1) day project contractor audit including a CBD worksite precinct inspection and a post audit assessment of documentation and records. The audit utilised an assignment specific Audit Checklist based on relevant Planning & Assessment Approvals plus Revised Environmental Mitigation Measures. The entire process was undertaken by Larry Weiss, of QEM Consulting Pty Ltd in accordance with AS / NZS / ISO 19011:2018 – Guidelines for Auditing Management Systems.

Auditor information

| | |
|------------------------------------|--|
| Audit Organisation: | QEM Consulting Pty Ltd |
| Auditor & Report Author | Larry Weiss |
| Auditor Qualification | EMS Auditor, Exemplar Global Certification 12355 |
| Affiliations | Member, Engineers Australia 938517 |

Auditor certification

The abovementioned Auditor certifies as having personally undertaken this Independent Audit and preparing the contents of this Independent Audit Report; and that the findings of the audit are reported truthfully, accurately and completely; and that he has exercised due diligence and professional judgement in conducting the audit. The signed Statement of Interests and Association in our services agreement with Sydney Metro confirm our Auditor's independence and absence of pecuniary interest in the audited project.

Audit disclaimer

It should be noted that this report is a snapshot in time, based on selected and supplied documentation, as well as site activities on the day, and does not purport to be a definitive confirmation of overall compliance or vice-versa.

----- **END REPORT** -----