

Memo

To

From

Priority

ROUTINE

Date

01/12/2023

Subject

Addendum assessment and decision No.06 for proposed modifications to M1 Western Distributor Smart Motorway Project

Proposed modification

Modification to the M1 Western Distributor Smart Motorway Review of Environment Factors (REF).

Background

In 2021, Transport for NSW proposed to introduce intelligent technology, known as a smart motorway system, to the M1 corridor between Milsons Point and Allen Street in Pyrmont. This proposal is located in the North Sydney and City of Sydney local government areas (LGAs).

A review of environmental factors (REF) was prepared for the Western Distributor Smart Motorway proposal (referred to as the approved project REF) which was determined in May 2021.

A further four (4) addendum REFs and one (1) consistency report have been prepared and determined (refer Attachment 1, 2, 3, 4 and 5):

- Addendum assessment and decision No.01 for proposed modification for the use of an auxiliary compound site for the M1 Western Distributor Smart Motorway, December 2022.
- Addendum assessment and decision No.02 for proposed modification for the M1 Western Distributor Smart Motorway, January 2022 – Modification to project boundaries to include five new gantry work, minor landscaping works, removal of existing traffic signage and additional ITS works.
- Addendum assessment and decision No.03 for proposed modification for the use of an additional construction compound site at Colebee for the M1 Western Distributor Smart Motorway, February 2023.
- Addendum assessment and decision No.04 for proposed modification for the M1 Western Distributor Smart Motorway, April 2023.

- Addendum Review of Environmental Factors No. 5, October 2023 for additional vegetation clearing, modification of the project boundary, works associated with RSC#30 on the western abutment of Anzac Bridge.
- M1 Western Distributor Smart Motorway – Review of Environmental Factors consistency review No.01, September 2023 – modify the location of overhead gantry #12 near the W-Hotel in Darling Harbour.

Purpose

The purpose of this memo is to:

- Describe the proposed modification.
- Document and assess the likely impacts of the proposed modification on the environment.
- Detail protective measures to be implemented.
- Document the recommendation of the Transport Senior Manager Environment and Sustainability and the decision by the Transport delegated manager as to whether to, or not to determine the modification to the project.

This memo is an addendum to and is to be read in conjunction with the previous project REF, addendum REFs and consistency review determined for the project.

Description of proposed modification

There are two (2) modifications proposed to the works scope of the M1 Western Distributor Smart Motorway (WDSM) Project that forms the subject of this memo.

1. Transport for NSW proposes to modify the WDSM project scope of works by changing the position of Roadside Cabinet No.17 (RSC#17) which would include removal of one (1) additional tree due to unacceptable required construction activity and impact to the root zone. The changed works of this proposal includes:
 - Removal of one (1) additional semi-mature tree (Tree #37 -a specimen of *Celtis sinensis*) located within Placemaking NSW's land. This location is between Pyrmont Street and the Dulwich Hill light rail line (L1), shown in Figure 1.
 - Installation of RSC#17 with associated electrical and communications pits and underground conduits on the eastern footpath of Pyrmont Street beneath the existing stair case which connects Pyrmont Street and the Western Distributor footway, Figure 2 and Figure 3, and Figure 4 of Appendix D.
 - Restoring the disturbed footpath and make-good of existing footpath pavement, previously damaged by Tree #37 from tree root impacts.
 - Elimination of RSC#17 and associated electrical and communications pits and underground conduits from Tumbalong Boulevard in Darling Harbour as previously approved.
2. Transport for NSW proposes to modify the WDSM project scope of works by changing the position of Roadside Cabinet No.16 (RSC#16). The changed works of this proposal includes:
 - Installing RSC#16, and associated electrical and communications pits and underground conduits on the footpath adjacent Goldsbrough Mort Building near Pyrmont St as illustrated in, Figure 5, and Figure 6 of Appendix D.
 - Restoring disturbed footpath areas.
 - Elimination of RSC#16 and associated electrical and communications pits and underground conduits from Tumbalong Boulevard in Darling Harbour.

The approximate position of roadside cabinets #14, #15, #16, and #17 as per this proposed modification are shown in Figure 7,

Need for the proposed modification

Changed position of RSC#17

- The approved project includes the installation of RSC#17 and underground connections adjacent to one of the Western Distributor's support columns on Tumbalong Boulevard, Darling Harbour.

The land is owned and managed by Placemaking NSW, which at the time of the REF determination was part of TfNSW. However, in or around July 2023, Placemaking NSW was transferred to sit under the NSW Government's Department of Planning and Environment. As such landowner's consent is required to install any infrastructure.

After extensive negotiations with Placemaking NSW and its main stakeholder in that area, the International Convention Centre, a specific location for RSC#17 was identified, this was different to the previously nominated location.

This new location, while viable was assessed to have the following adverse impacts:

1. It would impact the root zone of at least three (3) mature Cabbage Tree Palms, which are of high visual value to the Darling Harbour precinct.
2. The position is within the site of a project being delivered for Placemaking NSW which is not due for completion until March 2024. Access to the site is hoarded off and construction in the presence of the other contractors would be particularly difficult within the program commitment. Furthermore, it would require changes to newly completed works by Placemaking NSW, in a highly trafficked public recreation and entertainment precinct.
3. It may prove difficult to access for repairs, adjustments, and maintenance subject to public activity in the popular area of Darling Harbour.

The newly proposed location of RSC#17 in Pyrmont St enables the project to avoid the above impacts.

Changed position of RSC#16

- The approved project includes installation of RSC#16 and underground connections adjacent to one of the Western Distributor's support columns on Tumbalong Boulevard, Darling Harbour.

The land is owned and managed by Placemaking NSW, which at the time of the REF determination was part of TfNSW. However, in or around July 2023, Placemaking NSW was transferred to sit under the NSW Government's Department of Planning and Environment. As such landowner's consent is required to install any infrastructure.

After extensive negotiations with Placemaking NSW and its main stakeholder in that area, the International Convention Centre, a specific location for RSC#16 was identified, this was different to the previously nominated location.

This location, while viable was assessed to have the following adverse impacts:

1. It would impact the root zone of at least three (3) mature Cabbage Tree Palms, which are of high visual value to the Darling Harbour precinct.
2. It would potentially impede future construction of the separately assessed, planned Western Distributor 'weave ramp' project.
3. It may prove difficult to access for repairs, adjustments, and maintenance subject to public activity in the popular area of Darling Harbour.

The newly proposed location of RSC#16 in Pyrmont St enables the project to avoid the above impacts.

Chapter 2 of the approved project REF addresses the strategic need for the project, the project objectives and the options that were considered. The proposed modifications described and assessed in this addendum REF are consistent with the strategic need for the project.

The proposed modifications support provision of a Smart Motorway solution on the missing section of motorway corridor between Rozelle and North Sydney.

The proposed modifications, remain consistent with the policies and planning documents outlined in Chapter 2 of the determined project REF and its addenda as listed below:

- Future Transport Strategy
- Movement and Place Framework
- Future Transport Technology Roadmap
- Greater Sydney Regional Plan
- Eastern City District Plan
- Road Safety Plan 2021
- Connected and Automated Vehicles Plan
- State Infrastructure Strategy 2018-2038
- Sydney City Centre Access Strategy
- Sydney's Bus Future
- NSW Freight and Ports Strategy
- NSW Freight and Ports Plan

Options considered

During development of the project, strategic alternatives were considered. Following this process, two options were identified for further investigation:

- Option 1 'Do not modify project'- The project would proceed without the modifications proposed in this memo
- Option 2 'Modify project' – Construct the project with the modifications proposed in this memo

These options were assessed against the proposal objectives and development criteria outlined in Chapter 2 of the determined REF. 'Option 1' was discounted as the potential impacts of the proposed modification are less than those of the approved project.

The proposed modifications which comprise 'Option 2' have been through design refinement to minimise tree, visual, and operational impacts.

As such, 'Option 2' is the preferred option.

Consultation

The modification does not require formal consultation due to its limited nature. The project has notified and engaged with the following key stakeholders located immediately adjacent to or having an interest in the specific work areas at which this modification impacts:

- The landowner, Placemaking NSW and it's key stakeholder, the International Convention Centre
- Public Open Space Manager of City of Sydney Council
- Senior Environment and Sustainability Officer of Transport for New South Wales

During the consultation process no unacceptable impact or concern was raised regarding this modification.

Impact assessment

Soil

No additional soil or water quality impacts are anticipated. No additional safeguards are required.

Waterways and water quality

No additional impacts to waterways and water quality are anticipated. No additional safeguards are required.

Noise and vibration

Due to the proximity of the tree to the rail corridor (for RSC#17), its removal would be conducted at night under a temporary shut-down period, utilising construction safeguards including traffic and pedestrian control. Noise producing plant and equipment would include petrol chainsaws. Mulching and removal of the tree would occur during standard project hours at the White Bay project compound site in Rozelle.

The proposed locations for RSC#17 and RSC#16 are near to the previously proposed RSC#14 and RSC#15 respectively and relatively close to each other. The land use surrounding these sites includes:

- The L1 Dulwich Hill light rail to the east
- The data centre to the west and southwest
- The Goldsbrough Mort Building to the northwest which includes residential premises.

Potential noise impacts are considered minor due to the minor and short nature of the works required and because most of the surrounding land use is neither residential nor business, rather transport and datacentres.

Per the approved REF all noisy works would be performed under an approved Out of Hours Work (OOHW) permit with adequate stakeholder notification and noisy works would cease by 12:00am and must not exceed five consecutive nights each week.

Construction noise impacts would be relatively consistent with the construction noise footprint assessed in the determined REF and subsequent addenda.

Trenching would be performed by suitable industry accepted construction methods and would not introduce new construction methods.

The previously determined safeguards are considered adequate to manage these potential noise impacts.

Air quality

The work involves no net increase on that previously assessed. No additional air quality impacts are anticipated. No additional safeguards are required.

Aboriginal heritage

The modification involves work in two areas previously assessed. No Aboriginal sites or places were recorded in or near the location of the WDSM project boundary.

Non-Aboriginal heritage

The proposed modification is located near the Goldsbrough Heritage Curtilage Area. No further recorded non-Aboriginal heritage items were identified. Standard project safeguards for working near or adjacent to heritage structures apply. This includes:

- Condition assessment of the adjoining façade(s) of the Goldsbrough Mort Building must be completed prior to the

- commencement of any vibration producing activities within two metres of the structure.
- Vibration monitoring of the Goldsbrough Mort Building must be undertaken during any vibration producing activities within two metres of the structure.

No additional safeguards are required.

Biodiversity

The one (1) additional tree (Tree #37 - a specimen of *Celtis sinensis*) to be removed has a multi-stem trunk and is located between the footpath and the light rail corridor. The project arborist has assessed the proposed clearing extents of Tree-ID#37 concluding that it does not represent enough benefit to the community or amenity to the landscape to warrant retention and has been recommended for removal. See Appendix E – Correspondence with WDSM Project Arborist.

Tree #37, *Celtis sinensis* is a declared weed under the NSW Department Primary Industries (DPI) NSW WeedWise control program.

The modification would also result in preserving several mature, high value Cabbage Tree Palms in the heavily patronised Darling Harbour precinct.

Traffic and transport

Additional traffic and transport impacts would be minor on Pyrmont Street, a low volume local road under the management of Placemaking NSW. This would be a minor extension of the arrangements used to install RSC#14. No additional safeguards are required.

Socio-economic issues

No additional socio-economic impacts are anticipated. No additional safeguards are required.

Landscape character and visual impacts

No additional landscape character and visual impacts are anticipated. No additional safeguards are required. The proposed modification would result in reduced overall visual impacts due to the omission of roadside cabinets, pits, and cable tray from the recreational, entertainment precinct having high amenity value Darling harbour Precinct to a lesser value area.

Waste

The proposed modification would result in minimal, if any, additional green waste which is a waste type considered part of the determined project. Any waste would be managed and disposed of in accordance with existing pathways.

No additional safeguards are required.

Cumulative impacts

The proposed modification would not result in any net cumulative impacts.

No additional safeguards are required.

Attachment A addresses the environmental factors specified in section 171 of the Environmental Planning and Assessment Regulation 2021.

Summary of additional or revised safeguards

A summary of additional or revised safeguards to be included as part of this modification are listed in the table below. A complete list of project safeguards as amended is provided in Attachment B.

Safeguards	
Soil	No additional safeguards are required.
Waterways and water quality	No additional safeguards are required.
Noise and vibration	<ul style="list-style-type: none"> Condition assessment of the adjoining façade(s) of the Goldsbrough Mort Building must be completed prior to the commencement of any vibration producing activities within two metres of the structure Vibration monitoring of the Goldsbrough Mort Building must be undertaken during any vibration producing activities within two metres of the structure.
Air quality	No additional safeguards are required.
Non-Aboriginal heritage	<ul style="list-style-type: none"> Condition assessment of the adjoining façade(s) of the Goldsbrough Mort Building must be completed prior to the commencement of any vibration producing activities within two metres of the structure Vibration monitoring of the Goldsbrough Mort Building must be undertaken during any vibration producing activities within two metres of the structure.
Aboriginal heritage	No additional safeguards are required.
Biodiversity	No additional safeguards are required.
Trees	No additional safeguards are required.
Traffic and transport	No additional safeguards are required.
Socio-economic	No additional safeguards are required.
Landscape character and visual amenity	No additional safeguards are required.
Waste	No additional safeguards are required.
Cumulative impacts	No additional safeguards are required.

Licences, permits or approvals

All relevant licenses, permits, notifications and approvals needed for the Western Distributor Smart Motorway (WDSM) and when they need to be obtained are listed in the determined Western Distributor Review of Environmental Factors (REF) May 2021 and the four addenda (as determined). These have been included in the approved project Construction Environmental Management Plan (CEMP).

There are no changes to the licencing, permits or existing approvals required as part of this proposed modification.

Conclusion

All relevant safeguards identified in the Western Distributor Smart Motorway (WDSM) Review of Environmental Factors (REF) and the five addenda, all as determined would be applied to this modification and included work. There are no additional proposed work activities or impacts requiring major revisions to existing approved project safeguards.

Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) applies to the proposed modification. The proposed modification has been reviewed in the context of the Western Distributor Smart Motorways Review of Environmental Factors and four addenda as determined which have been considered against the requirements of sections 5.5 and 5.7 of the EP&A Act.

In considering the proposed modification this assessment has examined and taken into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of that activity as addressed in this memo, and associated information. This assessment is considered to be in accordance with the factors specified in section 171 of the Environmental Planning and Assessment Regulation 2021.

The M1 Western Distributor Smart Motorway Project including the proposed modification described in this memo has manageable environmental impacts which would be satisfactorily mitigated against. Having regard to the safeguards and management measures proposed, it is considered that the expected environmental impacts are unlikely to be significant and a further or revised environmental impact statement is not required under Division 5.2 of the EP&A Act.

The assessment has considered the potential impacts of the activity on the biodiversity values listed under the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994*. The M1 Western Distributor Smart Motorway Project including the proposed modification described in this memo would not significantly affect biodiversity values listed under the *Biodiversity Conservation Act 2016*. Therefore, the concurrence of the Coordinator General of the Environment and Heritage Group of Department of Planning and Environment and a species impact statement or a Biodiversity Development Assessment Report (BDAR) is not required.

In addition to the above, the assessment considered the effect of the activity on:

- Conservation agreements under the *National Parks and Wildlife Act 1974*.
- Plans of management under the *National Parks and Wildlife Act 1974*.
- Biodiversity stewardship sites under the *Biodiversity Conservation Act 2016*.
- Wilderness areas under the *Wilderness Act 1987*.

The assessment has also addressed the potential impacts of the activity on matters of national environmental significance and any impacts on the environment of Commonwealth land and concluded that there would be no significant impacts. Therefore, there is no need for a referral to be made to the Australian Government Department of Agriculture, Water and the Environment for a decision by the Australian Minister for the Environment on whether assessment and approval is required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or for application of the EPBC Act strategic assessment for Transport activities assessed under Part 5 of the EPBC Act.

This memo is of adequate quality and meets all relevant requirements.

The proposed modification has been characterised in the context of the M1 Western Distributor Smart Motorway Project and is consistent with that project's objectives and key features. While the proposed modification would increase the overall environmental impacts of the determined project, it is substantially the same as the activity described and assessed in the determined REF and does not constitute an entirely new activity.

Appendix F- Updated WDSM Project Tree Register 29/11/2023

Please return this paperwork to: Jarita.zeng@transport.nsw.gov.au

Appendix A: Environmental Planning and Assessment Regulation 2021 checklist

The following factors, listed in section 171(2) of the Environmental Planning and Assessment Regulation 2021, have been considered to assess the likely impacts of the proposal on the natural and built environment. This consideration is required to comply with sections 5.5 and 5.7 of the EP&A Act.

Environmental factor		Impact
(a)	Any environmental impact on a community? Nil additional impact. All temporary disruptions to the community during construction would be communicated at least 5 business days in advance of the works. Any closures or diversions would be clearly signposted.	Short term only
(b)	Any transformation of a locality? The proposed work would not transform the locality, as works would generally be contained within the existing public roadway.	Nil
(c)	Any environmental impact on the ecosystems of a locality? No potential impact of the local ecosystems would arise from the works. All potential impacts would be managed using the existing project safeguards.	Nil
(d)	Any reduction of the aesthetic, recreational, scientific, or other environmental quality or value of a locality? The proposal would not reduce the aesthetic, recreational, scientific, or other environmental quality or value of the locality, as works are within the existing project boundary or within the minor extension contained within the existing road formation.	Nil
(e)	Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific, or social significance or other special value for present or future generations? The proposal would not impact on a locality, place or building having any listed value above or other special value for present or future generations. All potential impacts would be mitigated against using existing project safeguards.	Nil
(f)	Any impact on habitat of any protected animals (within the meaning of the Biodiversity Conservation Act 2016)? The proposal would not have any impact on the habitat of protected animals with appropriate safeguards being implemented to mitigate potential risks	Nil
(g)	Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air? The proposal would not endanger any species of animal, plant, or other form of life, whether living on land, in water or in the air and appropriate safeguards would be implemented prior to mitigate risks	Nil
(h)	Any long-term effects on the environment? The proposal would have positive long-term effects on the environment due to improved customer journey experience including road safety. There are no	Nil

	anticipated negative long-term effects on the environment from any maintenance arising.	
(i)	<p>Any degradation of the quality of the environment?</p> <p>The proposal would have minimal adverse impact on the quality of the environment. Potential impacts would be mitigated against through implementation of the safeguards.</p>	Nil
(j)	<p>Any risk to the safety of the environment?</p> <p>No unacceptable risks posed to the safety of the environment potentially arising from the works. The potential impacts would be mitigated against through the implementation of the safeguards.</p>	Nil
(k)	<p>Any reduction in the range of beneficial uses of the environment?</p> <p>During construction the use of the road and permitted work areas would be limited because of temporary construction activities. The proposed modification would have no long-term impact on any beneficial uses of the environment.</p>	Nil
(l)	<p>Any pollution of the environment?</p> <p>The proposed works would not result in pollution of the environment. Potential risks would be mitigated via the implementation of the safeguards.</p>	Nil
(m)	<p>Any environmental problems associated with the disposal of waste?</p> <p>The proposed works would not generate extensive wastes different to those already managed on the project. Any waste generated during the works would be managed and disposed of to approved and licenced recycling or landfill facilities. Potential risks would be managed via the implementation of the safeguards.</p>	Nil
(n)	<p>Any increased demands on resources, natural or otherwise which are, or are likely to become, in short supply?</p> <p>The modification is a minor extension of works similar in nature to the approved project works and no further impact would arise. Potential risks would be managed via the implementation of the safeguards.</p>	Nil
(o)	<p>Any cumulative environmental effect with other existing or likely future activities?</p> <p>The proposed modification is minor in nature and would not pose risk to cumulative project or environmental impacts. The potential impacts on the environment would be minimised by risk mitigation through implementation of the safeguards.</p>	Nil
(p)	<p>Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?</p> <p>Nil additional impacts on coastal processes and coastal hazards, including those under projected climate change conditions.</p>	Nil

(q)	<p>Any impact on applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1?</p> <p>The proposed works are similar in nature to those previously determined as part of the project approval. No new works are being introduced. There is no impact to applicable planning legislation or regional plans. For further information on the applicable plans refer to Regional and district plans (nsw.gov.au) website.</p>	Nil
(r)	<p>Any impact on other relevant environmental factors?</p> <p>Nil additional impact to other environmental factors has been identified through the preparation of this modification and during development of the proposed activities.</p>	Nil

Appendix B: Environmental Planning and Assessment Regulation 2021 checklist

Environmental safeguards for the Western Distributor Smart Motorway are listed below. Additional safeguards identified in this addendum minor works REF memo are included in bold and italicised font. The safeguards would be incorporated into the CEMP and implemented during construction and operation of the proposed modification, should it proceed. These safeguards would minimise potential adverse impacts arising from the proposed works on the surrounding environment.

Appendix C: Determined Minor Works REF and Determined Addenda

A review of environmental factors (REF) was prepared for the Western Distributor Smart Motorway proposal (referred to as the approved project REF) which was determined in May 2021.

A further five (5) addendum REFs and one (1) consistency report have been prepared and determined as described below:

- Addendum assessment and decision No.01 for proposed modification for the use of an auxiliary compound site for the M1 Western Distributor Smart Motorway, December 2022.
- Addendum assessment and decision No.02 for proposed modification for the M1 Western Distributor Smart Motorway, January 2022 – Modification to project boundaries to include five new gantry work, minor landscaping works, removal of existing traffic signage and additional ITS works.
- Addendum assessment and decision No.03 for proposed modification for the use of an additional construction compound site at Colebee for the M1 Western Distributor Smart Motorway, February 2023.
- Addendum assessment and decision No.04 for proposed modification for the M1 Western Distributor Smart Motorway, April 2023.
- Addendum assessment and decision No. 5, October 2023 for additional vegetation clearing, modification of the project boundary, works associated with RSC#30 on the western abutment of Anzac Bridge
- M1 Western Distributor Smart Motorway – Review of Environmental Factors consistency review No.01, September 2023 – modifications to project boundaries, variation to works including new gantry structures and ITS connections.

Appendix D: Proposed Modification Photos & Figures



Figure 1 - Tree ID#37 to be Removed, a Multi Stem (Trunk) specimen.

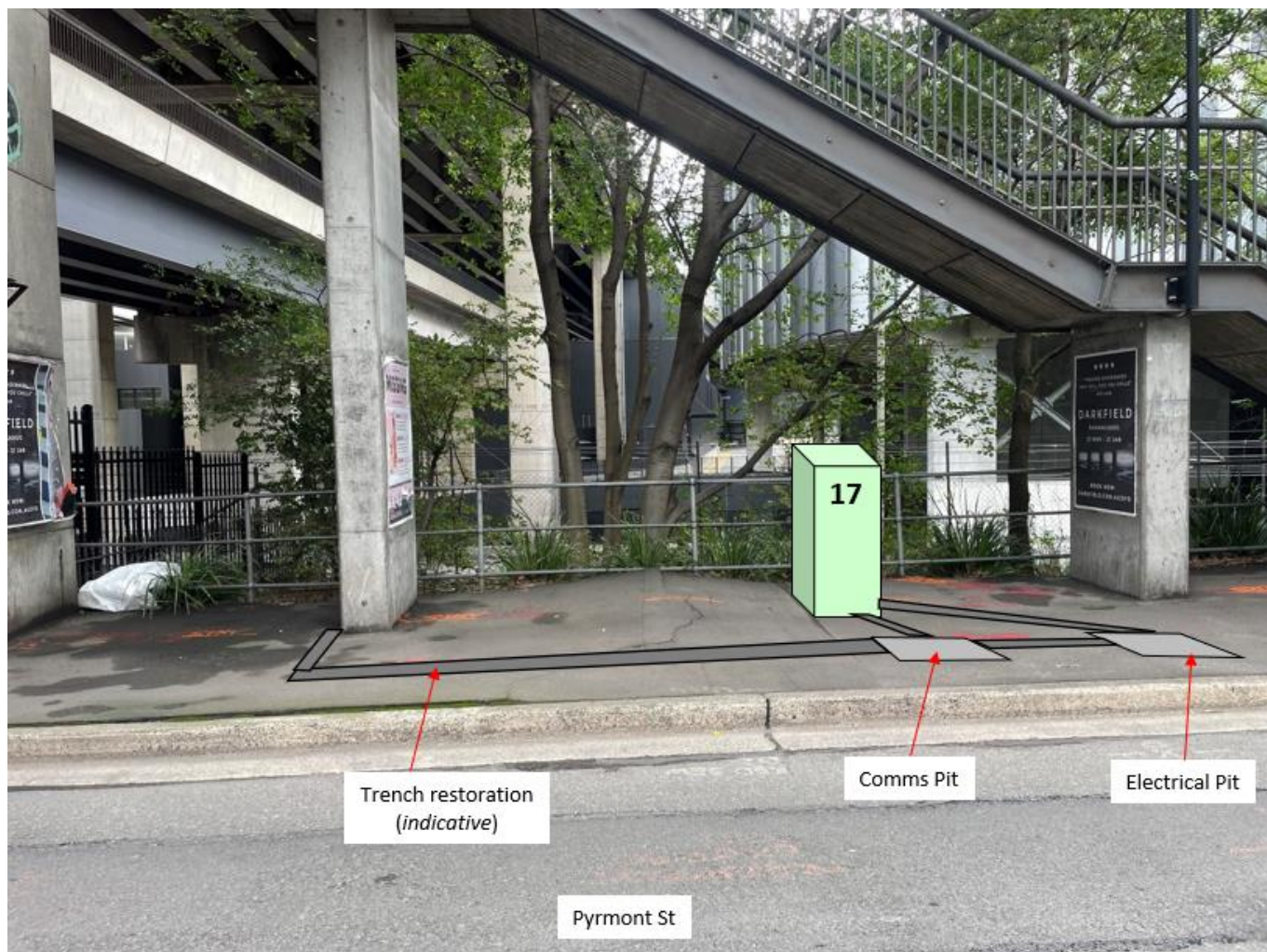


Figure 2 – Approximate position of proposed RSC#17 under staircase.



Figure 3 - Approximate position of proposed RSC#17 under staircase in context with future-‘existing’ RSC#14

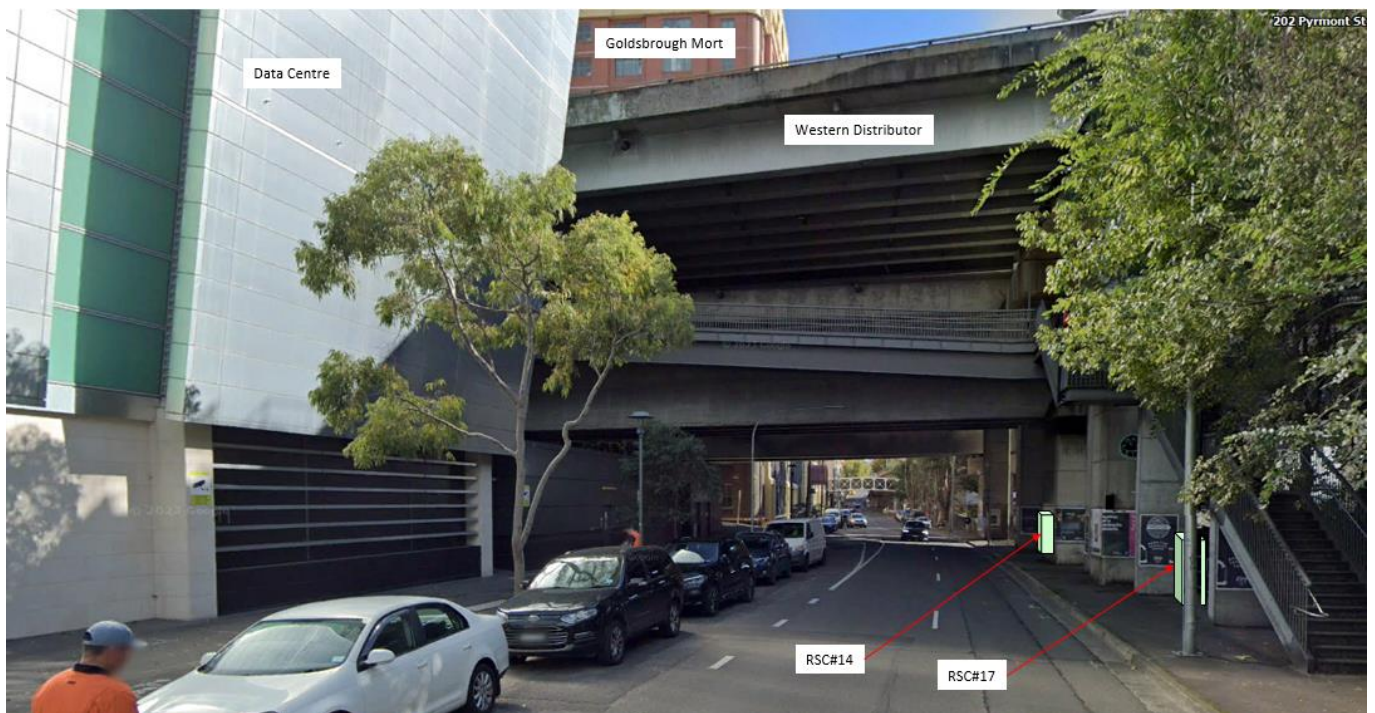


Figure 4 - Approximate position of proposed RSC#17 under staircase in context with future-‘existing’ RSC#14 and surrounding land use

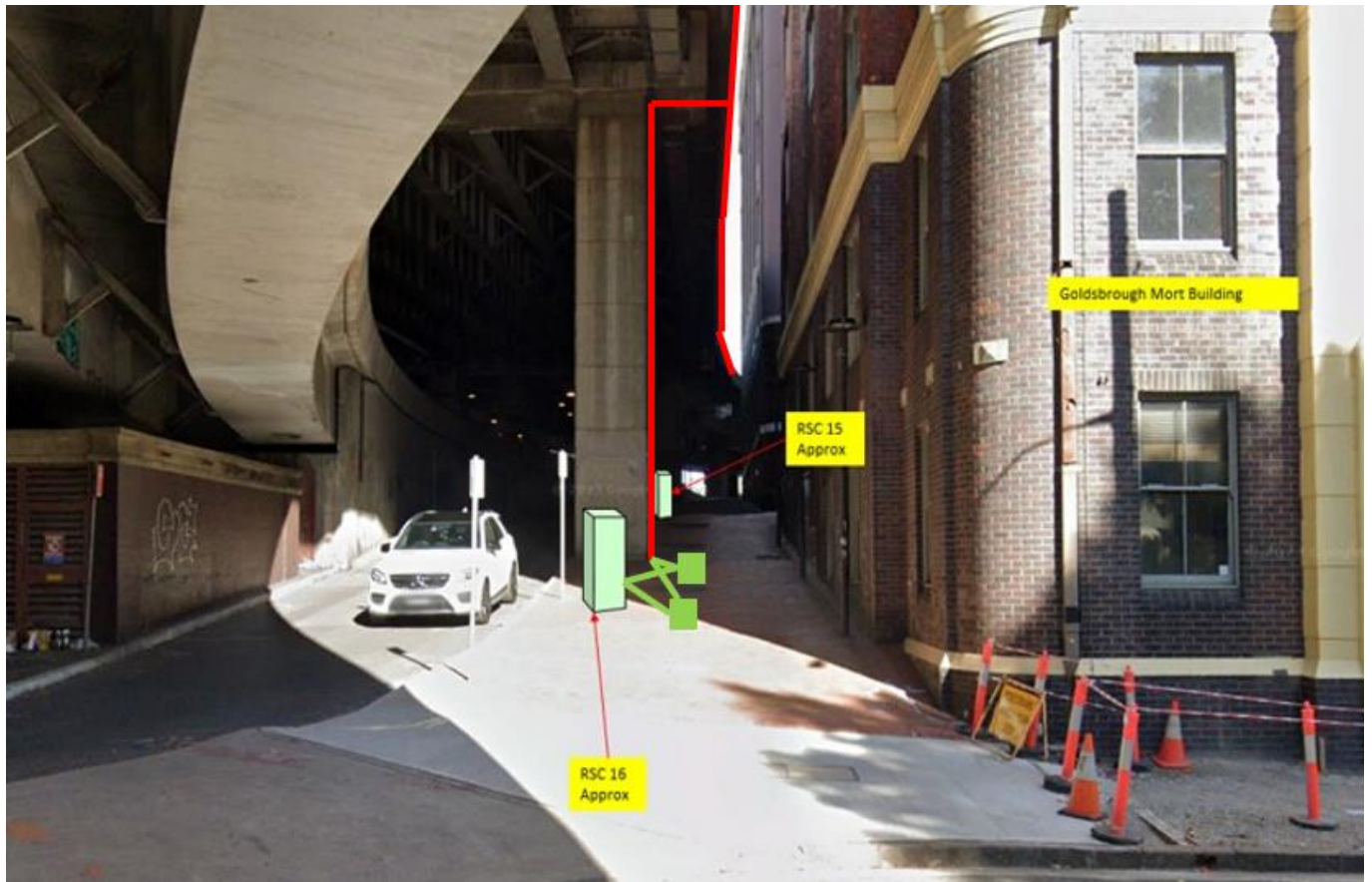


Figure 5 - Approximate position of proposed RSC#16 in context with future-'existing' RSC#15

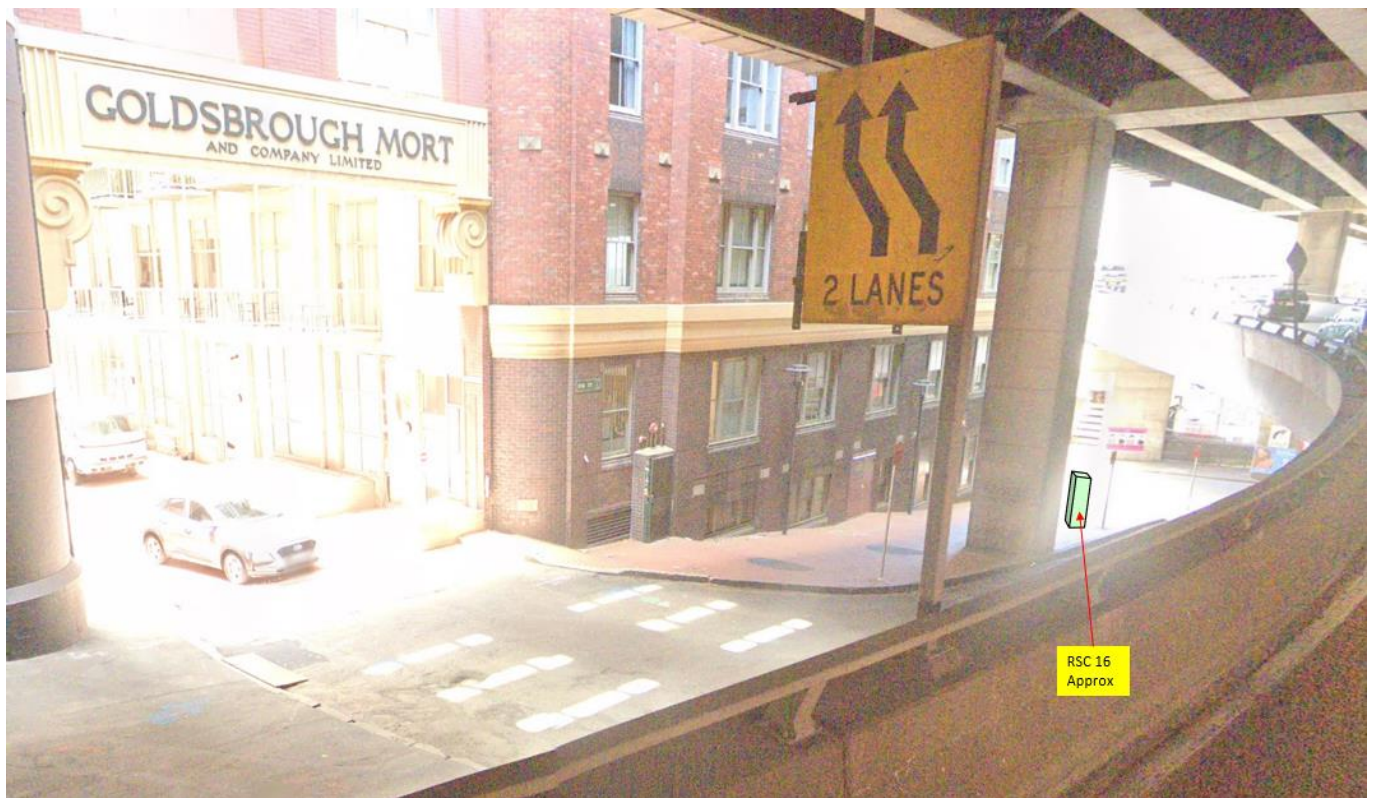


Figure 6 - Approximate position of proposed RSC#16 in context with the Goldsbrough Mort building

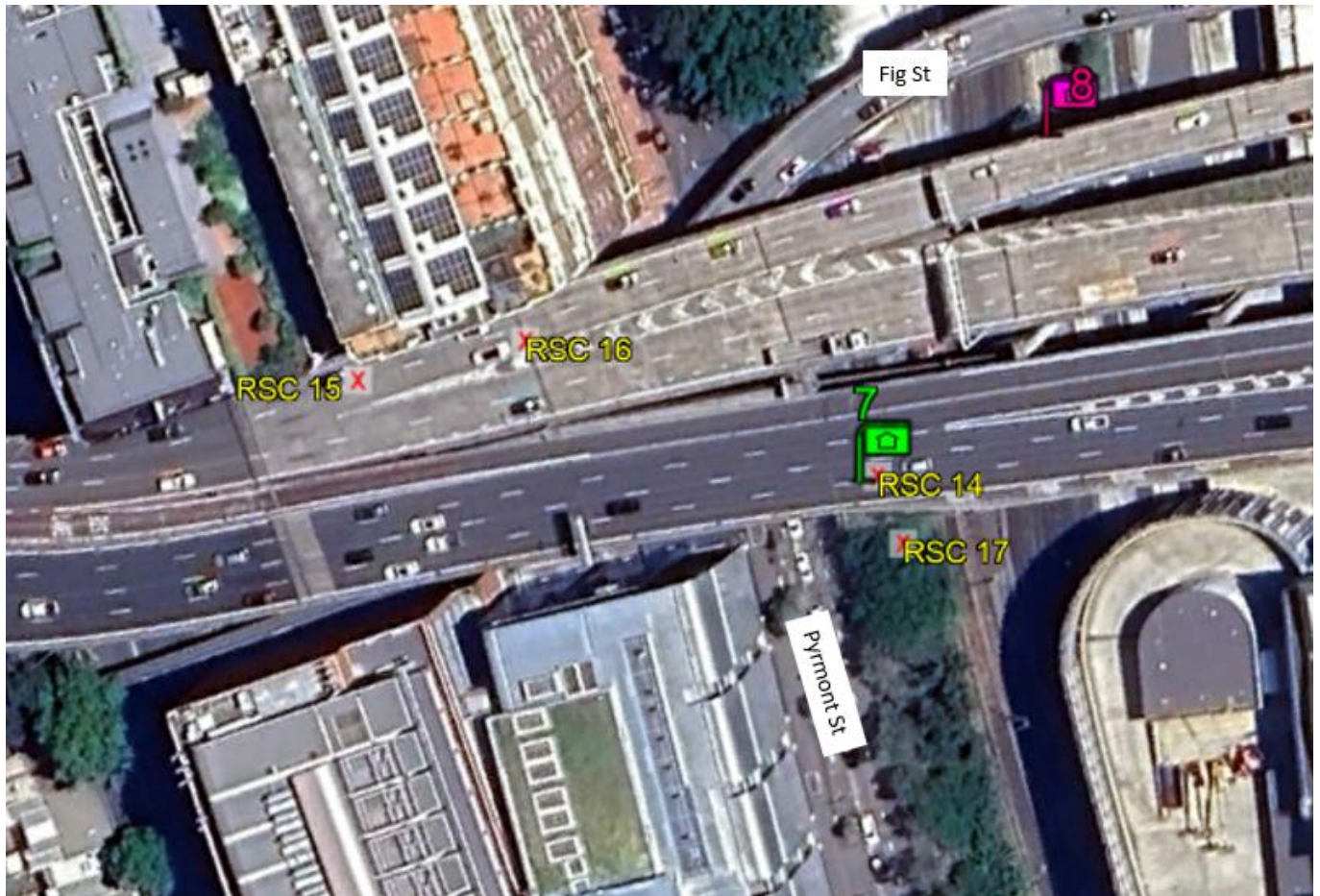


Figure 7 – Relative position of roadside cabinets 14 and 15, compared to newly proposed position of roadside cabinets 16 and 17.

Figure 8 – Not used

Figure 9 - Not used

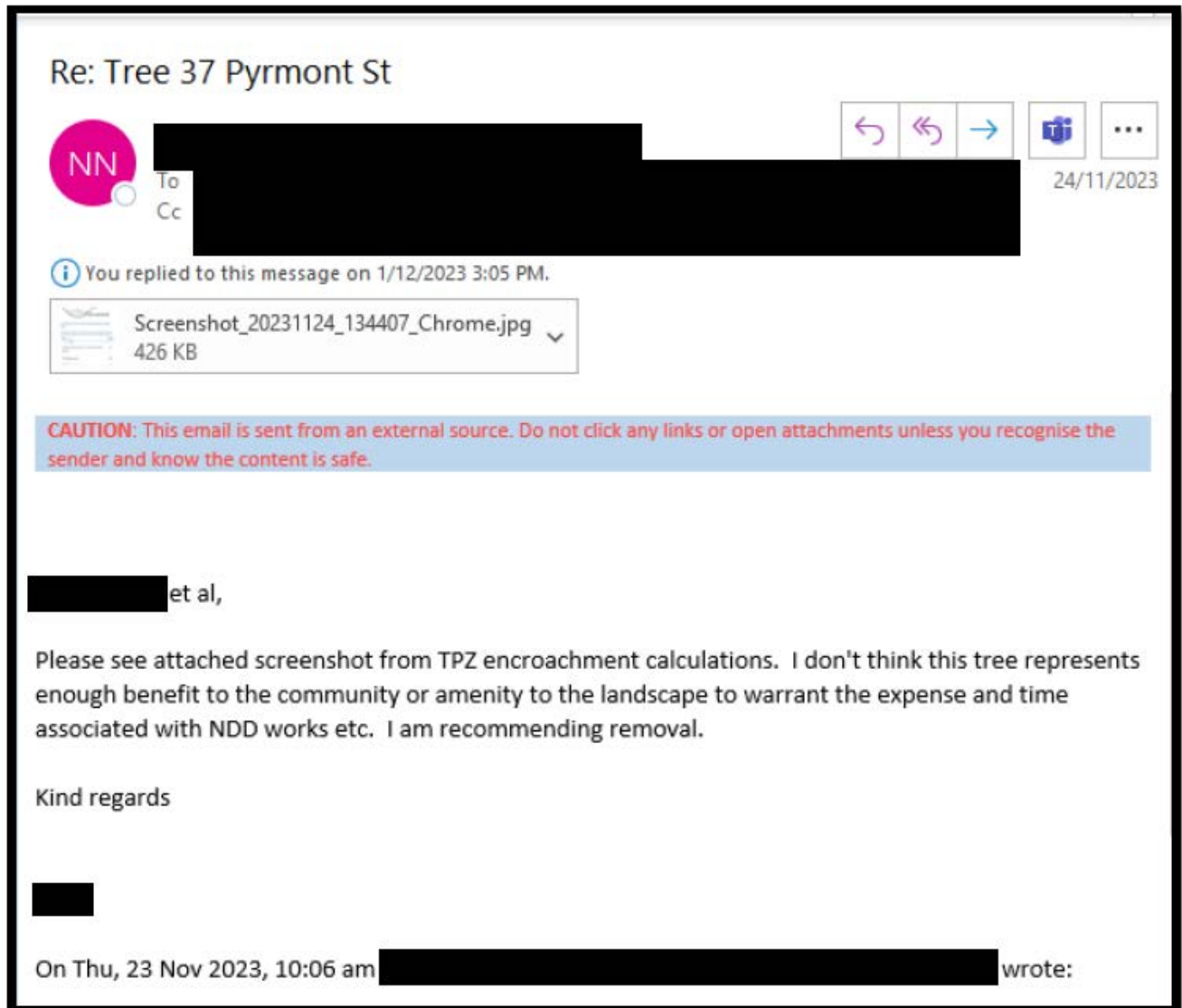
Figure 10 - Not used

Figure 11 - Not used

Figure 12 - Not used

Figure 13 - Not used

Appendix E – Correspondence with WDSM Project Arborist



1:44
VoD 4G LTE1 50%

AS 4970-2009 ...
4970calculator.web.app

Encroachment Type A: Works intersecting along a straight edge.²

Distance (m) from trunk centre to edge of works.

A
m

Distance (m) for minor encroachment (10%)	3.7
TPZ radius (m)	5.4
SRZ radius (m)	2.4
TPZ area (m ²)	91.6
Encroachment area (m ²)	31.9
Encroachment (%)	34.8

Appendix F – Updated WDSM Project Tree Register 29/11/2023

Tree No.	Genus	Species	Common Name	Tree Significance	Height (m)	Spread (m)	Diameter Breast Height (cm)	Diameter Above Buttress (cm)	TPZ	SRZ	TPZ m2	SRZ Encroachment (Y/N)	% Encroachment	Health	Structure	Amenity Value	ULE	Retention Value	Origin	Maturity	Defects	Works Description	Retention Comments
1	<u>Livistona</u>	<u>australis</u>	Cabbage Palm	Desirable	6	3	36	47	4.30	2.40	59	N	0%	Good	Good	High	25-50	High	Sydney	Mature	Nil	To be Removed	Remove within footprint of works
2	<u>Livistona</u>	<u>australis</u>	Cabbage Palm	Desirable	6.8	4	42	47	5.00	2.40	79	Y	15%	Good	Good	High	25-50	High	Sydney	Mature	Nil	To be Removed	Remove within footprint of works
3	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	13.4	17	78	77	9.40	3.00	275	N	5%	Good	Good	High	25-50	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~0.5m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
4	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	13	21	92	124	11.80	3.70	383	N	7%	Good	Good	High	25-50	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
5	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	16	13	101	77	12.10	3.00	462	N	5%	Good	Good	High	25-50	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
6	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	14	19	88	92	10.60	3.20	350	N	8%	Good	Good	High	25-50	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
6A	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	14.80	19	88	92	10.60	3.20	350	N	5%	Good	Good	High	25-50	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
6B	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	10.80	19	58	62	10.60	3.20	152	N	5%	Good	Good	High	25-50	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
7	<u>Livistona</u>	<u>australis</u>	Cabbage Palm	Desirable	2	2	25	27	3.00	2.00	28	Y	46%	Good	Good	High	15-25	Moderate	Sydney	Young	Nil	Trench (~1.5m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
8	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	16	19	82	81	9.80	3.00	304	N	6%	Good	Good	High	25-50	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1.5m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
8A	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	13.00	15	66	64	7.90	2.70	197	N	5%	Good	Good	High	25-50	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1.5m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
9	<u>Livistona</u>	<u>australis</u>	Cabbage Palm	Desirable	2	2	15	17	2.00	1.60	13	N	0%	Good	Good	Moderate	25-50	High	Sydney	Young	Nil	None	Unaffected
10	<u>Livistona</u>	<u>australis</u>	Cabbage Palm	Desirable	2	2	15	17	2.00	1.60	13	N	0%	Good	Good	Moderate	25-50	High	Sydney	Young	Nil	None	Unaffected
11	<u>Butia</u>	<u>capitata</u>	Brazilian Jelly Palm	Desirable	3	4	30	32	3.60	2.10	5	N	0%	Fair	Fair	Moderate	25-50	Moderate	Exotic	Young	Nil	None	Unaffected
12	<u>Casuarina</u>	<u>cunninghamiana</u>	River She-Oak	Desirable	18.4	12	75	96	9.00	3.30	255	N	2%	Fair	Fair	Moderate	25-50	Moderate	Sydney	Mature	Deadwood	Trench (~0.5m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
13	<u>Casuarina</u>	<u>cunninghamiana</u>	River She-Oak	Desirable	7	3	18	20	2.20	1.70	15	N	0%	Fair	Fair	Moderate	5-15	Moderate	Sydney	Semi-mature	Suppressed with mechanical damage	Trench (~0.5m width)	Unaffected
23	<u>Corymbia</u>	<u>gummifera</u>	Red Bloodwood	Desirable	11	4	29	30	3.50	2.00	38	N	0%	Fair	Fair	Moderate	5-16	Moderate	Sydney	Semi-mature	Significant lean	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
24	<u>Eucalyptus</u>	<u>microcorys</u>	Tallowwood	Desirable	8.6	5	28	30	3.40	2.00	36	N	0%	Fair	Fair	Moderate	15-25	Moderate	NSW	Semi-mature	Suppressed	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
25	<u>Eucalyptus</u>	<u>microcorys</u>	Tallowwood	Desirable	12	9	39	48	4.70	2.40	69	N	0%	Fair	Fair	Moderate	15-25	Moderate	NSW	Early-mature	Nil	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
26	<u>Eucalyptus</u>	<u>paniculata</u>	Grey Ironbark	Undesirable	9.6	3	20	20				N	0%	Dead	Poor	Very Low	0	Very Low	Sydney	Mature	Deadwood	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
27	<u>Casuarina</u>	<u>cunninghamiana</u>	River She-Oak	Desirable	11	4	24	24	2.90	1.80	26	N	0%	Good	Fair	Moderate	25-50	Moderate	Sydney	Semi-Mature	Nil	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
28	<u>Eucalyptus</u>	<u>microcorys</u>	Tallowwood	Desirable	10.4	6	34	38	4.10	2.20	52	N	0%	Good	Fair	Moderate	15-25	Moderate	NSW	Semi-mature	Nil	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
29	<u>Corymbia</u>	<u>gummifera</u>	Red Bloodwood	Desirable	8	4	19	20	2.30	1.70	16	N	0%	Fair	Fair	Moderate	15-25	Moderate	Sydney	Semi-mature	Nil	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected

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30	<i>Celtis</i>	<i>australis</i>	European Nettle Tree	Desirable	3	3	6	7	2.00	1.50	13	N	0%	Fair	Fair	Low	15-25	Low	Exotic	Young	Nil	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
31	<i>Eucalyptus</i>	<i>sp.</i>	Gum Tree	Undesirable	16	4	38	40				N	0%	Dead	Poor	Very Low	0	Very Low	Australian	Mature	Dead	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
32	<i>Casuarina</i>	<i>cunninghamiana</i>	River She-Oak	Desirable	15	6	36	60	4.30	2.70	59	N	0%	Fair	Poor	Moderate	5-15	Moderate	Sydney	Early-mature	Suppressed	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
33	<i>Celtis</i>	<i>australis</i>	European Nettle Tree	Desirable	4	3	6	7	2.00	1.50	13	N	0%	Fair	Fair	Low	0	Low	Exotic	Young	Nil	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
34	<i>Casuarina</i>	<i>cunninghamiana</i>	River She-Oak	Desirable	5	2	14	17	2.00	1.60	13	N	0%	Fair	Poor	Moderate	5-15	Low	Sydney	Semi-mature	Suppressed	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
35	<i>Casuarina</i>	<i>cunninghamiana</i>	River She-Oak	Desirable	9	3	16	17	2.00	1.60	13	N	0%	Fair	Poor	Moderate	5-15	Low	Sydney	Semi-mature	Suppressed	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
36	<i>Casuarina</i>	<i>cunninghamiana</i>	River She-Oak	Desirable	7	4	20	22	2.40	1.80	18	N	0%	Fair	Poor	Moderate	5-15	Moderate	Sydney	Semi-mature	Nil	Above Ground Mounted to Concrete Wall, Works within TPZ	Unaffected
37	<i>Celtis</i>	<i>sinensis</i>	Chinese Celtis	Desirable	14	8	45	47	5.40	2.40	92	N	0%	Fair	Fair	Moderate	5-15	Moderate	Exotic	Early-mature	Nil	Trench	Potential removal due to location of RC
38	<i>Celtis</i>	<i>sinensis</i>	Chinese Celtis	Desirable	14	8	26	28	3.10	1.90	31	N	0%	Fair	Fair	Moderate	5-15	Very Low	Exotic	Early-mature	Nil	None	Unaffected
39	<i>Celtis</i>	<i>sinensis</i>	Chinese Celtis	Desirable	13	6	20	22	2.40	1.80	18		<30%	Fair	Fair	Moderate	5-15	Low	Exotic	Early-mature	Nil	To be Removed	Remove within footprint of works
40	<i>Celtis</i>	<i>sinensis</i>	Chinese Celtis	Desirable	13	6	20	22	2.40	1.80	18	N	0%	Fair	Fair	Moderate	5-15	Low	Exotic	Early-mature	Nil	None	Unaffected
43	<i>Ficus</i>	<i>microcarpa var hillii</i>	Hills Weeping Fig	Desirable	9.4	12	34	37	4.10	2.20	52	Y	15%	Good	Good	High	15-25	High	Exotic	Early-mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
44	<i>Ficus</i>	<i>microcarpa var hillii</i>	Hills Weeping Fig	Desirable	7.2	7	24	27	2.90	1.90	26	Y	23%	Good	Good	High	15-25	High	Exotic	Semi-mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
45	<i>Ficus</i>	<i>microcarpa var hillii</i>	Hills Weeping Fig	Desirable	7.6	7	25	27	3.00	1.90	28	Y	21%	Good	Good	High	15-25	High	Exotic	Semi-mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
46	<i>Ficus</i>	<i>microcarpa var hillii</i>	Hills Weeping Fig	Desirable	9.5	7.0	30	32	3.60	2.50	41		<30%	Good	Good	High	15-25	High	Exotic	Semi-mature	Bark inclusions as for the habit of this species	To be Removed	Remove within footprint of works
47	<i>Ficus</i>	<i>microcarpa var hillii</i>	Hills Weeping Fig	Desirable	10	7	26	28	3.10	1.90	31	Y	21%	Good	Good	High	15-25	High	Exotic	Semi-mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
48	<i>Ficus</i>	<i>microcarpa var hillii</i>	Hills Weeping Fig	Desirable	12	7	36	37	4.30	2.20	59	Y	15%	Good	Good	High	15-25	High	Exotic	Early-mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
49	<i>Ficus</i>	<i>microcarpa var hillii</i>	Hills Weeping Fig	Desirable	13	14	47	45	5.60	2.40	100	Y	12%	Good	Good	High	15-25	High	Exotic	Early-mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
50	<i>Ficus</i>	<i>benjamina</i>	Weeping Fig	Desirable	12	21	60	64	7.20	2.70	163	Y	9%	Fair	Fair	High	15-25	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
51	<i>Ficus</i>	<i>microcarpa var hillii</i>	Hills Weeping Fig	Desirable	12	19	59	60	7.10	2.70	158	Y	9%	Good	Fair	High	15-25	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
52	<i>Ficus</i>	<i>microcarpa var hillii</i>	Hills Weeping Fig	Desirable	11	11	63	53	7.60	2.50	179	Y	8%	Good	Good	Good	15-25	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
53	<i>Ficus</i>	<i>microcarpa var hillii</i>	Hills Weeping Fig	Desirable	11	11	63	60	7.60	2.70	180	Y	8%	Good	Good	High	15-25	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.

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54	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	11	11	52	55	6.20	2.60	122	Y	10%	Good	Good	High	15-25	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
55	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	11	14	65	63	7.80	2.70	191	Y	8%	Good	Good	High	15-25	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
56	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	11	14	85	83	10.20	3.10	327	Y	6%	Good	Good	High	15-25	High	Exotic	Mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Works within SRZ, design to be modified to route works outside SRZ and limit effects to TPZ. Utilise low pressure NDD to advise on relocation of works.
57	<u>Ficus</u>	<u>macrophylla</u>	Moreton Bay Fig	Desirable	10.6	8	42	52	5.00	2.50	80	N	0%	Fair	Fair	High	25-50	High	NSW	Semi-Mature	Possible evidence of Phellinusssp.	None	Unaffected
58	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	12.6	17	78	95	9.40	3.20	275	N	6%	Good	Fair	High	15-25	High	Exotic	Early-mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
59	<u>Ficus</u>	<u>macrophylla</u>	Moreton Bay Fig	Desirable	6	13	43	44	5.20	2.30	84	N	0%	Fair	Fair	High	25-50	High	NSW	Semi-Mature		None	Unaffected
60	<u>Ficus</u>	<u>rubiginosa</u>	Port Javkson Fig	Desirable	6.2	7	54	56	6.50	2.60	132	N	9%	Good	Good	High	25-50	High	Sydney	Semi-mature	Deadwood	Trench (~1m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
61	<u>Ficus</u>	<u>macrophylla</u>	Moreton Bay Fig	Desirable	4.8	7	18	34	2.20	2.10	15	N	0%	Fair	Fair	High	25-50	High	NSW	Young		None	Unaffected
62	<u>Ficus</u>	<u>rubiginosa</u>	Port Javkson Fig	Desirable	5	8	47	60	5.60	2.70	100	N	9%	Good	Good	High	25-50	High	Sydney	Semi-mature	Minor Deadwood	Trench (~1m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
63	<u>Ficus</u>	<u>macrophylla</u>	Moreton Bay Fig	Desirable	6	12	46	61	5.50	2.70	96	N	0%	Fair	Fair	High	25-50	High	NSW	Semi-mature		None	Unaffected
64	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	7	13	48	59	5.80	2.70	104	N	8%	Fair	Good	High	15-25	High	Exotic	Semi-mature	Pest affected	Trench (~1m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
65	<u>Ficus</u>	<u>macrophylla</u>	Moreton Bay Fig	Desirable	6	12	41	51	4.90	2.50	76	N	0%	Fair	Fair	High	15-25	High	NSW	Semi-mature		None	Unaffected
66	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	10	20	77	106	9.20	3.40	268	N	6%	Fair	Fair	High	15-25	High	Exotic	Early-mature	Deadwood and pest affected	Trench (~1m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
67	<u>Ficus</u>	<u>rubiginosa</u>	Port Javkson Fig	Desirable	7	13	95	74	11.40	2.90	408	N	5%	Good	Fair	High	25-50	High	Sydney	Early-mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
68	<u>Ficus</u>	<u>rubiginosa</u>	Port Javkson Fig	Desirable	5	4	43	37	5.20	2.20	84	N	10%	Good	Good	High	25-50	High	Sydney	Early-mature	Bark inclusions as for the habit of this species	Trench (~1m width)	Minor encroachment works are acceptable provided the trench is installed with low pressure NDD under supervision of the project arborist
69	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	9.6	14	55	55	6.60	2.50	137	N	0%	Fair	Fair	High	15-25	High	Exotic	Semi Mature	Minor deadwood and pest affectedd	None	Unaffected
70	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	4.00	4	30	28	3.60	1.90	41	Y	<30%	Fair	Fair	Moderate	0-5	Low	Exotic	Semi Mature	Bark inclusions as for the habit of this species		Remove within footprint of works and tree is growing out of the existing wall structure and will in time need to be removed due to potential damage to the existing wall.
71	<u>Ficus</u>	<u>microcarpa var hillii</u>	Hills Weeping Fig	Desirable	13.70	17	48	50	5.76	2.47	104	Y	Yet to be determined	Good	Good	High	15-25	High	Exotic	Mature	Minor deadwood	Yet to be determined by final design	Potentially affected
72	<u>Eucalyptus</u>	<u>microcarys</u>	Tallowood	Desirable	11.00	10	35	37	4.20	2.18	55	N	10%	Fair	Fair	Moderate	15-25	High	Sydney	Mature	Nil	Yet to be determined by final design	Potentially affected
73	<u>Melaleuca</u>	<u>nesophila</u>	Showy Paperbark	Desirable	3.50	3	14	15	2.00	1.00	13	Y	<30%	Poor	Fair	Low	0-5	Low	NSW	Mature	Sparse crown	Yet to be determined by final design	Remove within footprint of works
74	<u>Celtis</u>	<u>sinensis</u>	Chinese Celtis	Undesirable	5.00	4	25	7	3.00	1.90	28	N	Pruning only	Fair	Fair	Moderate	15-25	Low	Exotic	Early-mature	Nil	Pruning up to 20% of crown	Prune to clear bridge deck
75	<u>Angophora</u>	<u>costata</u>	Sydney Red Gum	Desirable	13.00	10	45	47	5.40	2.40	92	N	Pruning only	Good	Good	High	15-25	High	Sydney	Mature	Nil	Pruning up to 20% of crown	Prune to clear bridge deck
76	<u>Eucalyptus</u>	<u>grandis</u>	Flooded Gum	Desirable	28.00	20	74	7	8.90	2.90	247	N	Pruning only	Good	Good	High	15-25	High	NSW	Mature	Nil	Pruning up to 10% of crown	Prune to clear bridge deck
78	<u>Livistona</u>	<u>australis</u>	Cabbage Palm	Desirable	8.00	3	28	33	3.40	2.10	36	N	27%	Good	Good	High	15-25	High	Sydney	Mature	Nil	Yet to be determined by final design	Works within TPZ, design to be modified to route worksto limit effects to TPZ. Utilise low pressure NDD to excavate.
79	<u>Livistona</u>	<u>australis</u>	Cabbage Palm	Desirable	6.60	3	27	31	3.20	2.00	33	N	27%	Good	Good	High	15-25	High	Sydney	Mature	Nil	Yet to be determined by final design	Works within TPZ, design to be modified to route worksto limit effects to TPZ. Utilise low pressure NDD to excavate.
80	<u>Livistona</u>	<u>australis</u>	Cabbage Palm	Desirable	8.00	3	32	36	3.80	2.20	46	N	27%	Good	Good	High	15-25	High	Sydney	Mature	Nil	Yet to be determined by final design	Works within TPZ, design to be modified to route worksto limit effects to TPZ. Utilise low pressure NDD to excavate.