Metro City Submission Attention: Director, Infrastructure Projects

This submission objects strongly to Chatswood Option 3, while expressing qualified support for the Sydney Metro project, preferably St Leonards Option 2 (although "discarded" by EIS, p.78).
My qualified acceptance of Metro City is dependent on:
*Metro addressing a number of issues both with the construction and operational phases of the project.
*My recommendations or "Conditions of Approval" being incorporated as part of the Determination / Approval by the Minister for Planning NSW, including extra expenditure elaborated below.

INTRODUCTION:

My submission:
*Objects to Chatswood Option 3 (opposes tunnel portal on western side of the rail-corridor).
*Prefers St Leonards Option 2 (prefers dive north of St Leonards station to dive south).

While the NSW Government concludes that "the consequences of not proceeding (do nothing) would result in unacceptable impacts" (p.972), nevertheless the impacts of Chatswood Option 3 ("CO3") would be equally unacceptable to local residents.

ISSUE: our community was not well-informed

People who will be mostly impacted were not properly consulted before the 2015 Metro Forum: this raises concerns about the adequacy of the community consultation process.

Metro has not adequately communicated information about dive options at initial meetings: St Leonards versus Chatswood.

The 2015 Information Session only focused on "preferred station locations, options for extra stations and information about the proposed rail line route" (Newsletter 15 June).

Our residents were not well-informed before the 2015 Metro Forum and most did not attend this Forum: most of the 45 residents/owners in my block were unaware of the 2015 Metro Forums and that a decision about the dive location would be made before November 2015. The feedback at these Forums led to the CO3 decision rather than St Leonards.

I had a knock on my front door by two Metro representatives at about noon on November 16th, asking whether I've heard about the Metro decision (to build it virtually at my front door).

The Project Overview (June 2015) had identified the "Stations & Alignment" but had not identified the potential dive sites other than announcing briefly:
*"Options for where the tunnels start include just south of Chatswood or at St Leonards".
*"From the end of Stage 1 at Chatswood, the new metro rail network will continue under Sydney Harbour".
Recommendation: to form a local community consultative committee to ensure locals are well-informed.

SUMMARY:

Issues: areas most adversely affected

There are many local issues that need to be addressed as Conditions of Approval for CO3, which the EIS does not deal with in its "Conclusions" (29.7).
The areas to benefit least from Sydney Metro are also the areas that will be most adversely impacted:
*The benefits (p.972) do not apply to the residences neighbouring CO3: the Metro is not needed between Chatswood and Sydney CBD because the existing transport system is regular and reliable.
*This issue affects me on more than two frontages. The dive site is located on two sides of my residence:
- to the south at Ausgrid dive site opposite 9 Nelson Street (my main entry by car)
- to the east along the rail-corridor & Frank Channon Walkway, between 2 Gordon Ave & 9 Nelson St, where my unit faces the rail-corridor.

To the west, Pacific Hwy will be more congested due to closure of Nelson St Bridge.
*Willoughby City Council will benefit least from Sydney Metro, while North Sydney Council will benefit most because the two new Metro stations are located within North Sydney Council: Crows Nest and Victoria Cross. (p.749)

(contd.)

SUMMARY (cont.):

RECOMMENDATIONS SUMMARY: CONDITIONS OF APPROVAL

Benefits for this Chatswood dive structure area should include extra expenditure on the following, although my numbering does not imply priority:

[1] A new two-way local road for light traffic running parallel to the extended Frank Channon Walk between Nelson St and Mowbray Rd, if the Nelson St Bridge is not re-built.

[2] Signalisation of Nelson St/Pacific Hwy intersection (new traffic lights): as interim solution if Nelson St Bridge is to be rebuilt.

[3] No entry or egress of Metro construction trucks into Nelson Street West; with alternative entry via a "slip lane" at Pacific Hwy.

[4] A resident parking scheme and mobility parking should be implemented in Nelson St and Gordon Ave , while maintaining existing "on street parking" provision.

[5] Metro provides a Traffic Control Plan to alleviate local traffic congestion.

[6] Increasing length of the 400m dive structure to preclude building a rail-bridge at Nelson St: a rail-bridge is not recommended.

[7] Dampers instead of concrete slabs for both T1 & Metro: dampers to replace increasing the height of noise barriers which cause an echo effect.

[8] At property treatment for residences adjoining rail-corridor near Metro dive structure.

[9] A Landscape Master Plan for the Ausgrid dive site, and at least a 2 for 1 tree replacement program initiated before start of Metro construction phase.

Issues 1 & 2: closure of Nelson Street Bridge (6.9.1)

Closure of Nelson St Bridge should not proceed: closure will have an impact on our residents that has been understated by Metro. Removal of Nelson St Bridge:
*Dramatically limits entry of residents to their Nelson St property. Currently, travelling northbound, a Nelson St resident can turn right off the Highway in Mowbray Rd, left into Orchard St and left into Nelson St. With the removal of the bridge this will no longer be possible.
*Increases traffic congestion on Pacific Hwy by cutting off entry to Orchard Rd via Nelson St east: prohibits vehicles using Orchard Rd as an alternative route south via Elizabeth St, Artarmon.
*Closure of Nelson St Bridge together with closure of the Frank Channon Walk will impact on the safety of the disabled, who use a walker to walk to Chatswood for shopping; and will limit cycists' access of Frank Channon Walk.

RECOMMENDATIONS: CONDITIONS OF APPROVAL

Without other alternative options for residents in Nelson Street West, the proposed permanent closure of Nelson Street Bridge is not supported.

Nelson St residents should be assured of unrestricted vehicle access to their property by:

[1] Car lanes running parallel to the extended Frank Channon Walk between Nelson St and Mowbray Rd at a location similar to existing private road within the Ausgrid site; or connecting Nelson St to the signalised Hampden Rd/Mowbray Rd intersection.

This solution is preferred to replacing the Nelson St bridge with a traffic bridge linking Gordon Ave to Orchard Road via Hopetoun Ave because the latter would be built over the covered dive structure.

EIS states: "It is anticipated that the traffic signals introduced at Mowbray Road / Hampden Road for the construction phase would be retained during operation." (p.382)

[2] New signalised intersection at Nelson St/Pacific Hwy as interim solution, permitting residents, who previously used Orchard Road, to exit northbound: with a right turn arrow northbound be installed on the Pacific Highway at Nelson St.
Otherwise, residents & tradesmen travelling north along Pacific Hwy would need to travel a long circular congested loop through Chatswood CBD (Albert Ave), along narrow congested Orchard Road, to get to Nelson Street: Orchard Road at corner of Albert Avenue is always congested due to jam at Pacific Hwy.

Issue 3: Metro construction traffic access via Nelson St (Figure 8-13)

"The Chatswood dive site would be a substantial spoil removal site. About 520,000 cubic metres would be removed through the site (460,000 cubic metres from tunnelling and 60,000 cubic metres from the dive structure)." (p.213)

Truck movements during dive construction are expected to be:

Demolition: 96 per day plus 78 light vehicles
Excavation: 234 per day plus 248 light vehicles
Tunnel excavation: 286 per day and 248 light vehicles
Tunnel fit out: 254 per day and 248 light vehicles

RECOMMENDATIONS: CONDITIONS OF APPROVAL

[3.1] No Metro entry/egress from the site via Nelson St: entry to and egress from the site by Metro construction vehicles should not be from Nelson Street.

[3.2] A new access point to Ausgrid dive should be established on the eastern side of the Pacific Highway by way of a "slip lane": enabled by the "widening of the Pacific Highway to the north of the Mowbray Road intersection". (p.298)

[3.3] As track maintenance access points are adjacent to local residential properties, such as Nelson Street, then Council and all residents should be informed about proposed works.

Issue 4: on-street parking in Nelson St is limited

RECOMMENDATIONS: CONDITION OF APPROVAL

[4.1] A resident parking scheme and mobility parking should be implemented in Nelson St.

[4.2] Metro trades vehicles should be restricted from parking in the vicinity of the site (on the basis that Metro implement a 'park & ride' option from a remote location.

Issue 5: local traffic congestion

***Issue: construction traffic: see 3 above.**

***Issue: long delays at intersection Pacific Hwy/Mowbray Rd (8.4.6)**

"Intersections currently experience long delays and a poor level of service due to high through traffic volumes and conflicting right-turn movements" (p.298).

***Issue: ECRL conversion 6 months (26)**

"Additional delays for general traffic on the Pacific Highway due to construction vehicle movements to and from the construction sites and additional bus movements associated with the Epping to Chatswood Rail Line conversion." (p.900)

RECOMMENDATIONS: CONDITION OF APPROVAL

[5.1] Metro should be required to present a Traffic Control Plan to the Willoughby Traffic Committee, considering that:

"Table 8-17 and Figure 8-15 shows ... that a number of intersections currently experience long delays and a poor level of service due to high through traffic volumes ... With construction traffic, there would be a minor increase in the degree of saturation and the average delay at some intersections.": e.g. Pacific Hwy/Mowbray Rd (p.298)

[5.2] I'm not supporting upgrading of the North Shore Line to freight capability used for spoil removal because:

*Increased noise.

*Adverse impact on visual amenity: T1 northbound track will be realigned several times during Metro construction & then raised on a 60m rail-bridge, with 100-300 meters long grade ether side. (p.213)

[5.3] The cuttings should not be brought back from Blues Point to the Nelson Street distribution point for trucking away.

Issue 6: rail-bridge for T1 (6.4.2.)

"The realigned T1 ... track would pass over the top of the metro Chatswood dive structure on a bridge. The track level across the bridge would be around two metres higher than the existing track level. The bridge is anticipated to be a single-span concrete structure around 60 metres long". (p.174)
This 60m rail-bridge will have 100-300 meters long grade either side: suggesting that the T1 track will be sloping up/down above-ground and alongside the entire 400m Metro "dive structure" which is sloping downwards under-ground.

While the "dive structure" is 400m long (with height unspecified), the works corridor is much longer: about 800 metres from Brand St to Albert Ave. (p.501) This indicates that the major construction impact will be concentrated between Nelson St & Gordon Ave (just outside my residence).

The rail-bridge under the Mowbray Road Bridge is an issue: needing permanent support work to the western abutment.

An underground railway station was not built at Chatswood when the ECRL was built in 2008.

RECOMMENDATIONS: CONDITION OF APPROVAL

[6.1] To re-align Metro & T1 tracks at or north of Chatswood Station, although this could slow down speed.

[6.2] A more expensive solution should be found if the distance from Chatswood station to Mowbray Road is not enough to create a grade separation between the existing T1 tracks and the new Metro tracks. The rail-bridge solution has been proposed by Metro because this is the cheapest way to make the crossing of T1 & Metro tracks.

[6.3] Commence the dive cut-and-cover structure (the tunnel portal) north of the Bowling Club, at about Chapman Ave/Chatswood Oval: to increase length of the 400m dive structure.
This would provide adequate height separation at Nelson Street between the Metro & T1 tracks, without constructing the 60m rail-bridge. (Re: Figure 10-1, p.416)

[6.4] Commence widening of rail-corridor north of Chatswood Oval Underpass: to extend length of 400m dive structure, to avoid building rail-bridge.

[6.5] The rail-bridge, at Nelson St, should be lower than and not higher than the Frank Channon Walk.

[6.6] The trains on any part of the rail-bridge should not be higher than the existing noise-barriers. Higher noise-barriers are not recommended for reasons given below: they create an echo effect, and reduce amount of sunlight and cooling ocean breeze for residents at 2 Gordon Ave/9Nelson St.
Reverberations are amplified with sound waves bouncing from the east to west rail escarpments (piles dug about 2005) between Hopetoun Ave/Gordon Ave & Nelson Street.

[6.7] More information should be provided about traffic management while providing "permanent support work to the western abutment of Mowbray Road bridge", which is required when building the 60 rail-bridge:
"The western pier would also require a deflection wall around the existing pier columns due to the increased height of the realigned T1 ... track" , i.e. the 60 rail-bridge (p.116,213)

Issue 7.1: noise due to concrete slabs

6.4.1: "The surface metro tracks would generally be placed on ballast with concrete sleepers. Alternative track types may be used in some locations where additional noise mitigation is required." (p.135)

6.7.1: "The Chatswood dive structure would commence about 250 metres south of Chatswood Station ... The dive structure would comprise an initial length of open trough, which would then transition to a cut-and-cover structure (the tunnel portal). The Chatswood dive structure would also incorporate rail dampers and deck absorption to provide mitigation for operational train noise." (p.169)

RECOMMENDATIONS: CONDITION OF APPROVAL

Dampers & not concrete slabs on all: realigned T1 tracks, concrete rail-bridge & Metro tracks.
Installing dampers (tracks sound-isolated for vibrations) will preclude raising height of noise barriers: increasing height of noise barriers will magnify echo effect. [6.9.3; p.493]

Issue 7.2: noise due to tracks slewed west (6.4.1)

"T1 North Shore Line 'down' (northbound) track would be relocated to the west." (p.135)
*Tracks will be slewed west by 3m closer to our Strata at Gordon Ave/Nelson St. (p.208, 212) However, distance of the slewed northbound tracks from my residential façade should be more than 15 metres (according to EPA licence guidelines 12208).

*Noise had increased when T1 was previously re-aligned and slewed westward (up to 7 metres) before linking up to the new western Chatswood Station platform on 16th October 2006.

RECOMMENDATIONS: CONDITION OF APPROVAL

Dampers & not concrete slabs on both realigned T1 North Shore Line, the rail-bridge & Metro tracks. Thus dampers would be used on the raised 60m concrete rail-bridge which will have 100-300 meters long grade ether side. (p.213)

Issue 7.3: noise barriers (6.9.3 & 11.4.2)

Excessive height: "An increase in the height (to four metres) of the noise barrier between Nelson Street and Gordon Avenue" (p.494) on the western side the rail line to mitigate airborne noise impacts.

Noise barriers are too close to residences and limit visual amenity by reducing amount of sunlight and cooling ocean breeze for residents at 2 Gordon Ave/9 Nelson St.

RECOMMENDATIONS: CONDITION OF APPROVAL

Dampers to replace concrete slabs for T1, concrete rail-bride and Metro, instead of increasing noise barrier height. During the re-alignment of the North Shore tracks, concrete slabs should be replaced by sound-mitigating dampers.
Dampers will avoid raising height of noise barriers: increasing height of noise barriers will magnify echo effect between east and west rail escarpments.
Eliminating the concrete rail-bridge will alleviate a noise issue. On the T1 rail-bridge, the upper parts of the rail carriage will extend about 2 metres above the noise barrier. Thus noise will emanate from the interface of the power-frame above the carriage and the overhead power cables.
Final design of the noise barriers should be provided to affected residents and Council for review.

Issue 8: at property treatment (11.4.2)

My location is at 2 Gordon Ave (thru to 9 Nelson St), opposite 1-3 Gordon Ave which has a "predicted exceedance of the noise trigger levels". (p.494)

Noise exceedances will be in excess of 20dB for 9 Nelson St/2Gordon Ave & also 1-3 Gordon Ave, according to:

EIS Appendix F, "Construction Ground-borne Noise Predictions" (Report 610.14718R1 of 4.4.2015).

Source: Sydney Metro C2S EIS Technical Paper 2 Noise & Vibration Appendix F.

If 1-3 Gordon Ave "would be considered for at property treatment" (p.494), then also should our block opposite at the cul-de-sac: 2 Gordon Ave/9 Nelson St.

Actual interior measurements in 2008 by WCC for 9 Nelson Street demonstrated noise was excessive: an LA_{eq16hr} level of 40.6dB(A) and an L_{max} level of 75.4dB(A).

Mr Weber (Snr Environmental Health Surveyor) pointed out to Willoughby Council Town Planner on 18.1.1999 that the "maximum passby level" has "the effect upon the resident of sleep disturbance due to the intermittent passby noise of the individual trains, which is considerably higher than the $L_{eq(24hr)}$, reaching an average level of 80 dBA".

New Metro tracks will result in more frequent excessive noise: with a metro train every four minutes when Metro City is complete. (contd.)

Issue 8 (cont.)

RECOMMENDATIONS: CONDITION OF APPROVAL

2 Gordon Ave/9 Nelson St should be "considered for at property treatment", considering residents "may experience an increase in train passby vibration levels". (p.490)

Mitigation measures should include: "At property treatments would be offered where there are residual exceedances of the trigger levels." (p.498)

If dampers cannot reduce interior noise (vibration & air-borne) to acceptable levels, then double-glazing is to be installed to units adjoining the rail-corridor.

Issue 9: visual amenity & landscape (p.621)

Residential properties to west of Frank Channon Walk, including mine, will be adversely impacted due to:
*"the proposed removal of vegetation from within the rail corridor and scale of metro infrastructure, which would result in unfiltered views of the rail corridor, noise barriers and dive structure". (p.635)

*"the proposed removal of trees, the scale of the adjacent retaining structure and noise barriers, and associated overshadowing". (p.634)

*The noise wall shown on p.1153 (Aecom) is much too high and the width of the Frank Channon Walk has been narrowed: the existing FCW has a bordering garden with a lower noise wall.

A cross-section diagram of the overlapping structures is not provided between Nelson St & Gordon Ave:
- The rail-bridge is not shown on Fig.7-7 (p.209) & Fig.7-8 (p.214), although they do show both the dive structure & T1.
- Neither T1 nor the rail-bridge is shown at the "dive structure" on p.169, 502, 633 & 759.
- The "line bridge" p.136 (fig.6-6) is not a cross-section; fig.6-7 does not show the rail-bridge

The CO3 site is too small for the large scale of this Metro infrastructure: Metro does not have the space at Ausgrid site that's available for the Metro Northwest to Rouse Hill. (Source: Artist's impression of Sydney Metro Trains Facility in Rouse Hill, Sydney Metro EIS Summary, p.16.)

From Chatswood the dive to Sydney Harbour will be deep, from about 150m above sea-level at Chatswood, and not so deep for the St Leonards option (about 110m).

RECOMMENDATIONS: CONDITION OF APPROVAL

*An artist's impression should be provided showing a cross-section of both of the 2 major structures within the rail-corridor to be built alongside until the Ausgrid dive portal: showing the height of the 400m dive structure and the 60m rail-bridge which will have 100-300 meters long grade ether side. (p.213)

*A landscape master plan for the Ausgrid dive site should be prepared for tree planting and gardening, with subsequent maintenance after completion of Metro rail construction.

*Post-construction development plan for the Ausgrid site should exclude high-rise.

*At least a 2 for 1 tree replacement program initiated before start of Metro construction phase, to filter views of the dive structure within the rail-corridor & within the Ausgrid site.

*Extra tree planting at south and north side of Nelson Street, and east side of Nelson Street Bridge, before construction starts, e.g. on the nature-strip adjoining the Ausgrid dive site. The artist's two impressions from viewpoint 11 at Nelson Street shows trees removed from the nature-strip near the pathway adjoining hoardings around the Ausgrid dive portal. (p.637)

*Trees planted now would provide cover for any graffiti on these hoardings.

*Vines growing on the noise-barriers adjoining Frank Channon Walk planted after ECRL upgrade 2007 should be retained, as should the height of the existing noise-barriers (without being increased). The vines provide a barrier against graffiti.

*The EIS was prepared by Environmental Scientists, but EIS should have included evaluation by a Behavioural Scientist to investigate how people interact with the built environment. 19.4.3 is too brief: "During construction, changes to amenity of public places and local centres near to construction sites may impact on people's use and enjoyment of these areas" (p.784). No mention is made of impact of CO3 & closure of Nelson St Bridge & Frank Channon Walk which would reduce access by car/walk to Chatswood Oval and Chatswood shops.