

Attn: Dominic Crinnion
Acting Director – Infrastructure Management
NSW Department of Planning and Environment
Locked Bag 5022
Parramatta NSW 2124

Dear Dominic

**Sydney Metro Western Sydney Airport
Submission of Design Review Panel review outcomes for information
Surface and Civil Alignment Works (SCAW) Package**

The Conditions of Approval for Sydney Metro Western Sydney Airport Critical State significant infrastructure (SSI-10051) outlines the project design requirements and necessary submissions.

Condition of Approval E63 requires the following:

E63 The CSSI must be designed with consideration of:

- a) the design objectives, principles and guidelines identified in documents listed in Condition A1;*
- b) the principles and objectives of the draft Connecting with Country Framework;*
- c) relevant land use changes, masterplans and initiatives, where this information is known and/or available;*
- d) existing and proposed future local context and character; and*
- e) transport and land use integration and system functionality in the context of precincts, to the extent it is known and/or defined.*

Responses to items (a) – (e) must be reviewed by the Design Review Panel (DRP) to inform the design of permanent built works and landscape design of the CSSI. The outcome of the DRP review must be provided to the Planning Secretary prior to the submission of the Place, Urban Design and Corridor Landscape Plan (PUDCLP).

Note: *In accordance with **Condition A10** and **Condition A16**, the requirements of this condition can be staged*

This memo has been prepared to outline that the SCAW design responds to Condition E63 and to summarise the outcome of the DRP review of the SCAW design response. In accordance with Condition of Approval E63, this memo is submitted to the Secretary for information prior to lodgement of the SCAW Place, Urban Design and Corridor Landscape Plan (PUDCLP).

The following requirements of Condition of Approval E63 have been addressed by the SCAW Project Design response as noted in the Table below:

Condition E63 Requirement	SCAW Design Response
a) the design objectives, principles and guidelines identified in documents listed in Condition A1;	a) Design development has considered the objectives, principles and guidelines identified in the EIS and Submissions Report.
b) the principles and objectives of the draft Connecting with Country Framework;	b) The principles and objectives of Connecting with Country has been incorporated into the design response. Connecting with Country has informed the SCAW design since the original tender phase. Consultation with Sydney Metro's Connecting with Country Working Group is on-going.
c) relevant land use changes, masterplans and initiatives, where this information is known and/or available;	c) Where known, land use and master plans have been considered in design development.
d) existing and proposed future local context and character;	d) Existing conditions and future planning outcomes (where known) were considered in the design development.
e) transport and land use integration and system functionality in the context of precincts, to the extent it is known and/or defined.	e) N/A to the SCAW Project Stage. Precinct transport and land use integration and system functionality will be addressed by follow on Contractor; Stations, Systems, Trains Operation and Maintenance (SSTOM).

As an enabling works package, the SCAW design response was presented to the DRP and the DRP's feedback and the Project's response was recorded within the SCAW design Action Tracker. As a record of reviews and responses, the Action Tracker from DRP meetings held between April and September 2022 is attached.

The Design Review Panel has been advised that this letter is to be submitted prior to the submission of the PUDCLP to the Planning Secretary. At the DRP meeting on 10 November 2022, it was confirmed in consultation with the DRP and a representative from the Department of Planning and Environment Infrastructure Management team, that this letter would be sufficient to address Condition of Approval E63.

As agreed in this meeting, the Government Architect Letter of Advice provided to date are attached (Enclosure 2), to provide additional context for the content of the Action Tracker.

Further detail on the SCAW design is presented in the SCAW Place, Urban Design and Corridor Landscape Package (PUDCLP), which will be issued to DPE for information in accordance with Condition of Approval E77.

Encl: Enclosure 1: DRP Advice & Recommendations

Enclosure 2: Government Architect Letter of Advice sheets

Yours Sincerely,



Vishal Khosla

Project Director

Enclosure 1: **DRP Advice and Recommendations**

SENSITIVE: NSW GOVERNMENT
Western Sydney Airport
Design Review Panel Action Tracker

PACKAGE	MEETING DATE	ITEM #	GEOGRAPHIC LOCATION	THEME	DRP ADVICE	TEAM TO RESPOND	ACTION / RESPONSE	STATUS
SCAW	14/4/2022	2.02	Line Wide	Planning Approvals	The Panel's ongoing role in advising on the Place Urban Design Corridor Landscape Plans (PUDCLP).	Precinct Team	The Panel's role is primarily to advise on design through the SCAW design stages. The PUDCLP is the document that covers the design process and the outcome of the process. The PUDCLP must include CoA E63-E65 and DRP advice.	Closed by SM noting additional briefings to the Panel on future PUDCLPS
SCAW	14/4/2022	2.03	Line Wide	Planning Approvals	The timelines for the independent review mechanism for each PUDCLP, and the Panel's role in nominating one, or a number, of experts to review each document.	Precinct Team / ESP Team	CPBUI outlined the SCAW Design / PUDCLP programme. The Panel is to select a qualified independent person to review the PUDCLP in-line with the CoA and the independent reviewer is to work to the CPBUI proposed programme.	Closed for SCAW, noting additional briefings to the Panel on future PUDCLPS
SCAW	14/4/2022	2.05	Line Wide	Built form	The Panel requests further information on the logic of the viaduct parapet design and how this element sits with the design of the pier and box girder.	CPBUI	The viaduct parapet joints of the girders and parapet will be aligned. Parapet expansion joints will be wider (50-75mm) with 20mm joints typically	Closed by SM noting not all Panel advice adopted.
SCAW	14/4/2022	2.06	Line Wide	Materials & finishes	The Panel requests further information on potential strategies for managing the differences in colour and finish across the various concrete elements.	CPBUI	SM and the SCAW Contractor have noted the Panels comments and provides the following justification in response: The SCAW Contractor has a specified criteria that has been mandated in the project Particular Specification. To summarise these requirements, the viaducts, elevated structures and bridges must achieve: - a concrete surface finish of Class 2CX as per AS3610 'formwork for concrete - Colour 2 as per AS3610 - not use pigments or applied surface finish to achieve colour consistency - all grout and epoxy products must match the colour and finish - adjacent viaduct segments and parapets must be cast in succession to minimise colour variation along the structure and ensure consistency. The SCAW Contractor has developed a match cast specification which applies to precast segment casting. This specification includes hold and witness points relating to the fabrication of the segments.	Closed by SM
SCAW	14/4/2022	2.07	Line Wide	Materials & finishes	Information on how design issues will be managed in the Concrete Working Group.	CPBUI	The Concrete Working Group is a contract requirement of SCAW with the objective of meeting the performance and constructability characteristics of the project whilst optimising the carbon footprint by reducing the weight of Portland Cement. To date, the SCAW Contractor has completed a series of concrete tests on a variety of mix designs to determine the suitable material properties of the concrete whilst optimising cement content. A significant driver of the mix design has been a requirement to achieve a high early age strength to enable stripping of formwork at required timelines. The testing process has resulted in a reduction of cement content of approximately 50kg/m3 from the baseline mix design. The next phases of the project will include the development of prototypes which will enable design issues to be evaluated in more detail. It is noted that the prototypes are not covered within the remit of the Concrete Working Group but are a separate project requirement.	Closed by SM noting not all Panel advice adopted.
SCAW	14/4/2022	2.08	Line Wide	Materials & finishes	Further thought and presentation on the holistic impact of the SCAW works, showing how the detailed elements come together – in both the short and long-term – with other aspects of the development of this part of Western Sydney (e.g. M12, the Outer Sydney Orbital etc).	CPBUI	SCAW landscape works will have minimal impact on the M12 and Outer Sydney Orbital.	Closed
SCAW	14/4/2022	2.09	Line Wide	Landscape	Briefing on the background, contextual work already carried out on soils and hydrology and how the Corridor Vision & Design Principles established for the project are being put into practice as specific strategies in the SCAW. Of particular interest are: a. Construction footprint reduction allowing increase in areas being protected and conserved b. Stormwater and drainage management strategy (including the impact of permanent stockpiles) related to protection of both overland and groundwater to conservation and revegetation areas c. Riparian rehabilitation strategy.	CPBUI	Abutment footprints reduced. Increased span of viaducts to reduce pier impacts. Riparian planting information presented.	Closed
GENERAL	14/4/2022	2.10	Line Wide	Landscape	Development of a comprehensive soils management strategy that considers the interface between SCAW, SSTOM and CLC, and how SCAW can establish the conditions for the success of these subsequent landscape packages.	CPBUI & SM Design Team	Soil management requirements identified across the three contracts. SM will not be developing a soil management strategy - these issues have been addressed through particular specifications. The ecological specialist will be charged with detailed site investigation, including soils to determine suitable treatment and amelioration to underpin the ultimate landscape works. Topsoil is being stripped to remove the weeds and herbicides and restore ground to pre-farming condition. Contamination study scope to be outlined.	Closed
SCAW	14/4/2022	2.11	Line Wide	Precinct Design	A clear statement at the commencement of each future presentation on the aspects of the design the contractor seeks advice on, and what is being presented for information only. This will ensure the Panel's time is used effectively and attention is directed to where advice and recommendations can be beneficial.	CPBUI & SM Design Team	Advice has been relayed to each future presenter.	Closed by SM for the purpose of SCAW. Matter to be addressed by other/future design packages (SSTOM and CLW).
SCAW	14/4/2022	2.15	Line Wide	Additional presentations	The Panel would like a follow up presentation on SCAW viaduct design.	CPBUI	Refer to comment 2.05.	Closed
SCAW	14/4/2022	2.17	Line Wide	Additional presentations	The Panel would like to be updated from the soon-to-be-convened Concrete Working Group.	CPBUI	SM and the SCAW Contractor have noted the Panels comments and provide the following justification in response: At high level, the concrete working group was established in May and testing has been completed on 12 concrete mix designs. The 12 mix designs have been evaluated against a number of material property criteria (e.g. slump, 12hr strength, code and specification requirements). A preferred concrete mix has been determined which has ~365kg/m3 of cement content and uses 195kg/m3 of fly ash. Prototypes using the preferred concrete mix will progress outside of the Concrete Working Group.	Closed by SM noting not all Panel advice adopted.
SCAW	9/6/2022	4.01	Line Wide	Concrete elements	Explore opportunities to introduce texture/s to the different concrete elements.	SM Design Team	SM specification requires a Class 2CX finish as per AS 3610 - smooth off form finish to viaduct elements.	Closed
SCAW	9/6/2022	4.02	Line Wide	Concrete elements	Provide further information on concrete types and demonstrate the most sustainable concrete will be adopted across the project to reduce carbon footprint.	CPBUI /ESP Team	SM and the SCAW Contractor have noted the Panels comments and provide the following justification: As noted in 2.07 and 2.17, the Concrete Working Group has tested 12 concrete mix designs against a series of requirements. The baseline mix that has been used on previous CPB projects has a carbon content of 408kgCO2-e/m3. Mix solutions were evaluated down to 278kgCO2-e/m3 - this mix had unfavourable properties which were not favourable for construction. The optimised concrete mix which meets the required parameters and reduces the carbon content (Mix G) achieves a carbon content of 360kgCO2-e/m3.	Closed by SM noting not all Panel advice adopted

SENSITIVE: NSW GOVERNMENT
Western Sydney Airport
Design Review Panel Action Tracker

PACKAGE	MEETING DATE	ITEM #	GEOGRAPHIC LOCATION	THEME	DRP ADVICE	TEAM TO RESPOND	ACTION / RESPONSE	STATUS
SCAW	9/6/2022	4.03	Line Wide	Joints	It was confirmed that the joints of the girders and the parapet will be aligned. This is supported by the Panel and should be retained. The Panel would like SCAW contractor to further explore the expression of the joints to either achieve an even joint width across all (movement and abutting) or a differentiation so that the movement joint appears intentional and not as a construction error.	CPBUI	A chamfered joint has been incorporated into the segment joints after consideration to the aesthetics of square joints vs shadow line vs chamfered edges. This design solution has been developed in consideration as to how the joints are read when contrasting the box girder joints against the parapet joints. DRP to clarify what component of the original comment is not to DRP satisfaction.	Closed
SCAW	9/6/2022	4.04	Line Wide	Built form	Illustrate the overall viaduct structure showing how it sits in the landscape. a. Provide the logic for the expression of each run/section and illustrate how all the sections come together. b. Illustrate how the horizontal alignment relates to the planting strategy and existing and proposed topography and landforms. c. Explain and illustrate treatments at low points and over the creeks.	CPBUI	Viaduct relationship to the landscape (existing) and future development reviewed and presented to DRP.	Closed
SCAW	9/6/2022	4.05	Line Wide	Landscape	Explain how the Country approach is manifest in the scheme as a living system (e.g. through approaches to water, soil, biodiversity etc).	CPBUI	Ongoing liaison with Murawin and CwC to inform material selection, landscape options, ecological restoration, species selection and identify roles for First Nations enterprises in the design and construction.	Closed
SCAW	9/6/2022	4.10	Line Wide	Systems	In the project context the new metro infrastructure is a system that needs to establish ways to relate to other existing systems: water, biodiversity, soil etc. Be more explicit in illustrating and articulating how the different systems relate, interact and can support each other.	SM Design Team	CPBUI presented detail on site hydrology and drainage as this contract determines the altered drainage pattern resulting from the new infrastructure. Fauna related requirements must be met in the SCAW contract and certain of these will be passed on to SSTOM and CLW where appropriate. Each contract is subject to detailed requirements controlling the handling and reuse of topsoil. Similarly each contract includes requirements covering the use of native vegetation. The CLW contract will be fashioned as an ecological, i.e. systems based, approach to landscape restoration. A specialist ecological and bush regeneration consultant will be engaged by Sydney Metro to refine the scope and requirements for the Corridor Landscape Works.	Closed
SCAW	9/6/2022	4.12	Line Wide	Systems	Provide three-dimensional illustrations of stockpiling areas to show: a. how the hydrology of each area works: how the water moves from the structure to the soil and between areas. b. the relationship and integration of proposed structures with existing and proposed landforms.	CPBUI	SM and the SCAW Contractor have noted the Panels comments and provide the following justification: The stockpile profile has been developed to seek a more natural shape and the batters have been flattened to 5:1 to be consistent with the landscape. The profile has been finalised in consideration of feedback from the CwC working group. Design development of the stockpile is generally complete with the Stage 3 (100%) design of the stockpile (the final stockpile profile) submitted to Sydney Metro at the end of September.	Closed by SM for SCAW noting no additional briefing has been provided at this stage and will be provided to the Panel as part of SSTOM.
SCAW	9/6/2022	4.15	Line Wide	Abutment areas	The change of materiality at abutment areas from Nepean River pebbles to sandstone blocks is questioned, noting that sandstone is not a naturally occurring rock type in this area. Review and revisit.	CPBUI	The Panel notes that stone is currently proposed as the most appropriate material for the abutments based on scour, flooding and proposed grades. Presentation from Murawin. DPR generally supportive of use of chipcut sandstone.	Closed
SCAW	9/6/2022	4.16	Line Wide	Abutment areas	Illustrate any access stairs, maintenance ramps and/or security fences required in these areas.	CPBUI / SM Design Team	Issue closed for SCAW. This issue has been noted by SM and will be listed as an item for SSTOM to address.	Closed
SCAW	9/6/2022	4.17	Landscape	Heritage	Expand the heritage analysis to include the visual impacts to these elements from afar, including areas outside the project area that may be significant. For example, the heritage values of the Old Luddenham Road should include how it moves in the landscape and captures views. How will this relate or be impacted by the viaduct.	CPBUI	Heritage analysis presented to DRP. No further comments required.	Closed
OTHER	9/6/2022	4.21	Line Wide	Interfaces and coordination	Outline any contamination issues and how these will be addressed.	ESP Team	Environmental Impact Statement: Figure 16-2 (attached) indicates the 'Areas of Environmental Concern (AEC)' across the Project alignment which have a medium to high risk of existing contamination. In accordance with the SM-WSA Planning Approval, our Contractors have an obligation to conduct site investigations within these AEC, where they disturb ground. The Contractors' obligations regarding contamination management are outlined in SM-WSA Conditions of Approval (CoA) E92-E97. It is too early in the project cycle to know the nature of any potential contamination across the site, or remediation methodologies (if required), until sampling, analysis and reporting has been carried out by our Contractors in accordance with the CoA. Contamination between contracts is currently being managed by Sydney Metro's Integration team, in consultation with the SM-WSA Environment, Sustainability and Planning team and SCAW, SBT and SSTOM delivery teams. SM's Contractors are responsible for remediation where required in accordance with the CoA. Our Contractors are currently conducting sampling, analysis and reporting in accordance with the CoA, and it is too early to provide Ongoing collaboration with the CWC working group as required by SCAW.	Closed
SCAW	21/7/2022	5.01	Line Wide	Connecting with Country	Engage with Murawin and the Connecting with Country Working Group as soon as possible to progress a meaningful integration of their knowledge and insights.	CPBUI	Update provided on liaison with Murawin and CwC group and connecting with country initiatives.	Closed by SM for SCAW. Matter to be addressed by other/future design packages (SSTOM, CLW)
SCAW	21/7/2022	5.02	Line Wide	Connecting with Country	Provide a presentation at the next meeting on this engagement and how the contractor team is responding to these inputs, to include: a. material selection b. exploration of landscape options, with a focus on ecological restoration c. identified roles for First Nations enterprises in the design and construction (e.g. compost production) d. species selection e. soil amendments f. refer also to the advice from DRP 4, where a number of additional items for consideration have been raised g. provide feedback to the Connecting with Country WG on project development and how their advice and input has been addressed and incorporated.	CPBUI	Continuing dialogue between the groups.	Closed
SCAW	21/7/2022	5.03	LDN	Built form	Provide further testing of viaduct scale from the south along Luddenham Road.	CPBUI	Luddenham Road context (existing and future) reviewed	Closed
SCAW	21/7/2022	5.04	Line Wide	Built form	Consider the perception of the viaduct (i.e., where it is viewed at proximity and where from a distance) in light of the scale of future development in order to confirm current approaches.	CPBUI	Context of the viaducts when viewed in proximity and distance reviewed.	Closed
SCAW	21/7/2022	5.05	Line Wide	Built form	Formalise the drawing "Viaduct Interface" (p.14 of the presentation) for inclusion in the PUDCLP to illustrate the context for the viaduct at different locations along Luddenham Road, as well as in relation to heritage curtilages (pp. 54-55). Include: a. contours b. key levels along the line c. key levels related to topography d. minimum clearances, including over creeks e. existing and potential future stands of vegetation.	CPBUI	The formalised drawing of the 'Viaduct Interface' will be included in the PUDCLP document.	Closed by DRP? This information provided in the PUDCLP

SENSITIVE: NSW GOVERNMENT
Western Sydney Airport
Design Review Panel Action Tracker

PACKAGE	MEETING DATE	ITEM #	GEOGRAPHIC LOCATION	THEME	DRP ADVICE	TEAM TO RESPOND	ACTION / RESPONSE	STATUS
SCAW	21/7/2022	5.06	Line Wide	Built form	Review the design of the viaduct piers to consider the slim central section of the shaft to ensure this element is legible from a distance.	CPBUI	Form, initial geometry and resolution of viaduct piers reviewed. Refer to comment 2.05.	Closed
SCAW	21/7/2022	5.07	LDN	Built form	The image of the elevated viaduct at Luddenham (p.19) indicates that the box girder soffit will form a partial ceiling to public spaces below. The contractor is strongly encouraged to turn their attention to the refinement of this element. Consider the detail and experience of the viaduct soffit as it contributes to the experience of public space, particularly around stations.	CPBUI	Scale adjusted. Final urban treatment by SSTOM. Uplighting not in SCAW scope. This	Closed
SCAW	21/7/2022	5.08	Line Wide	Built form	Ensure the integration of all horizontal services, including any lighting that might be deemed necessary through the above design review.	CPBUI	Confirmed no horizontal services on outside of viaduct. All services integrated into the viaduct.	Closed
SCAW	21/7/2022	5.09	LDN	Built form	Provide more detail on bird-proofing at junctions, noting that approaches at locations where the viaduct can be seen close up require more attention than when distant.	CPBUI	Information provided to SM. 30x30x3mm stainless steel mesh is provided at the top of all viaduct piers to prevent a ledge for birds/vermin. The mesh is set-back approximately 100mm to avoid a significant visual impact of a mesh fixed to the face of the pier. The 100mm setback has been determined to allow fixing of concealed baseplates sufficiently away from the pier face and to allow installation. The arrangement balances the requirements of an aesthetic and functional design outcome. See attached detail	Closed by SM
SCAW	21/7/2022	5.10	LDN	Built form	Demonstrate how the up lighting indicated in the renderings (delivered by SSTOM) will enhance the experience of the structure at these locations.	CPBUI	Final treatment by SSTOM and subject to separate PUDCLP. Uplighting not in SCAW scope. Item closed for SCAW. This issue has been noted by SM and will be listed as an item for SSTOM to address.	Closed
SCAW	21/7/2022	5.11	Line Wide	Joints	Present further options for the viaduct jointing to understand how different treatments may affect visibility of the joint from a distance, and to ensure an architectural resolution of this key detail.	CPBUI	Viaduct joints tested. Expansion joint 50mm and 20mm champher. Better outcome to reduce risk of damage to the elements. Sets up hierarchy of joint widths. Refer comment 2.05.	Closed by SM noting not all Panel advice adopted
SCAW	21/7/2022	5.12	Line Wide	Built form	The current design of the piers illustrates that refinements to a base engineering element can make a positive contribution to design quality. Revisit the design and demonstrate options for the parapets that explore how refinements to the design of this element can contribute to the architectural expression of the viaduct.	CBPUI	Presentation to DRP on form. Form reassessed. initial geometry and resolution of viaduct piers re-stated from tender design. No proposed change. Options presented for parapet joints only. Preferred parapet joint to be champhered.	Closed by SM noting not all Panel advice adopted
SCAW	21/7/2022	5.13	Line Wide	Concrete elements	Continue to provide updates on ongoing work on concrete design mix and testing, carbon reduction etc.	CBPUI	Refer to comments 2.17 and 4.02.	Closed by SM. SM will continue to monitor ongoing progress.
SCAW	21/7/2022	5.14	Line Wide	Concrete elements	Investigate how a lighter-coloured concrete can be achieved to assist in reducing the visual impact of the structure.	CBPUI	As noted in response to comment 2.17, 12 mix designs have been evaluated against a number of material property criteria (e.g. slump, 12hr strength, code and specification requirements). A preferred concrete mix has been determined which has ~365kg/m3 of cement content and uses 195kg/m3 of fly ash. The colour and finish requirements of the concrete are prescribed as noted in comment 2.06 response. The light colouring of concrete is a competing variable with sustainability in that cement replacement materials (fly ash, slag) tends to darken the concrete. Prototypes using the preferred concrete mix will progress outside of the Concrete Working Group.	Closed by SM. SM will continue to monitor ongoing progress.
SCAW	21/7/2022	5.15	Line Wide	Concrete elements	A simple textured finish for selective use should not be excluded, explore options and present at next session. Noting that staining and weathering can contribute positively to the design quality when understood and designed.	CBPUI	Smooth finishes required and recommended. Metro Specification requires Class 2CX as per AS3610, implying a smooth off-form finish. Textured concrete will result in issues with maintenance, staining and constructability. Refer comment 4.01.	Closed
SCAW	21/7/2022	5.16	Line Wide	Abutment areas	Demonstrate that the contractor's architects and landscape architects are closely involved in the design and resolution of the abutments so that a sensitive, high quality design solution is achieved that economizes on built area and materials and maximises landscape outcomes.	CPBUI	Design developed in consultation with Murawin and CWC group - kit of parts and overall form.	Closed
SCAW	21/7/2022	5.17	Line Wide	Abutment areas	Engage with the connecting with Country consultant to progress the design and materiality of the abutments.	CPBUI	Design developed in consultation with Murawin and CWC group.	Closed
SCAW	21/7/2022	5.18	Line Wide	Abutment areas	Demonstrate use of infrastructure sustainability and GreenStar tools to inform the final selection of material for the abutment finish.	CPBUI	The SCAW package is required to achieve a verified Infrastructure Sustainability (IS) "design" rating score of at least 75 points, using the IS rating tool version 1.2 "Design and As Built". The Project is targeting Level 3 for IS Rating credit Mat-1 "Materials lifecycle impact measurement and reduction", which involves demonstrating a 30% reduction in materials lifecycle impacts compared to the base case footprint. Design optimisation associated with the abutment (including reduction of hard material and imported rock used) will contribute to achievement of this target. Further detail will be included in the Sustainability Design Report (SMWSASCA-CPU-SWD-EW000-SB-RPT-080101). It is noted that the Project is not required to attain a Green Star rating.	Closed by SM for SCAW noting that this advice will be conveyed to SSTOM and CLW
SCAW	21/7/2022	5.19	Line Wide	Abutment areas	Outline the coordination needed between SCAW and SSTOM to ensure that security fencing is well integrated with the abutment design and junctions well executed.	SM Design Team	Item closed for SCAW. This issue has been noted by SM and will be listed as an item for SSTOM to address.	Closed
SCAW	21/7/2022	5.20	Line Wide	Abutment areas	Provide more information about emergency exit points from both the abutments and viaducts and how these relate to future development.	SM Design Team	Item closed for SCAW. This issue has been noted by SM and will be listed as an item for SSTOM to address.	Closed

SENSITIVE: NSW GOVERNMENT
Western Sydney Airport
Design Review Panel Action Tracker

PACKAGE	MEETING DATE	ITEM #	GEOGRAPHIC LOCATION	THEME	DRP ADVICE	TEAM TO RESPOND	ACTION / RESPONSE	STATUS
SCAW	21/7/2022	5.21	Line Wide	Soils	Investigate the soil biology of an operating natural eco-system, ideally close to the creeks on the alignment where the vegetation is less disturbed to help inform the rehabilitation of soils in this project.	CPBUI	The project soil scientist (SESL) has advised that they will be testing soils for organic carbon content, including within the Defence Lands where the vegetation is less disturbed. This will show the proportion of organic matter to be added to the site soils to be re-used for landscaping. The addition of organic matter is the simplest way to commence the complex process of building soil microflora/soil biology. SESL's recommendations in terms of amelioration will naturally promote the proliferation of microorganisms and labile carbon by creating a suitable / improved environment. SESL has advised that they can do additional testing (FDA and PPOX) to determine microbial activity, but this would not influence their soil amelioration recommendations and SESL does not recommend inoculation using microbe based products without relevant literature backing its efficacy. Sydney Metro is satisfied with SESL recommendation on soil testing and amelioration. Sydney Metro's Ecologica Restoration Specialist will be able to undertake more extensive soil testing if they determine that soil microbiology testing is a useful to proposed restoration approach. Refer 5.22 for soil rehabilitation	Closed by SM for SCAW. Matter to be addressed by other/future design packages (SSTOM, CLW)
SCAW	21/7/2022	5.22	Landscape	Soils	Target composts that improve soil biology and water-holding capacity.	CPBUI	The addition of compost (composted organic matter) is the simplest way to commence the complex process of building soil microflora/soil biology. SESL's recommendations in terms of amelioration will naturally promote the proliferation of microorganisms and labile carbon by creating a suitable / improved environment.	Closed by SM for SCAW. Matter to be addressed by other/future design packages (SSTOM, CLW)
SCAW	21/7/2022	5.23	Line Wide	Soils	Work with the connecting with Country consultant and Working Group to understand the interface between soil improvement and cultural practices.	CPBUI	Strategy identified and presented to DRP. The CwC WG will have the opportunity to review the implementation of the Corridor Landscape Strategy by the CLW.	Closed
SCAW	21/7/2022	5.24	Line Wide	Soils	Utilize the landscape expertise in the contractor team to direct how the stockpile will be designed, ensuring a landscape rather than purely engineering solution.	CPBUI	Strategy identified. Design considerations for the current design of the stockpile within PS-105. Current design of stockpile sympathetic to undulating environment, not placed within riparian buffer zone. Design principles agreed with Murawin.	Closed
SCAW	21/7/2022	5.25	Line Wide	Soils	Provide a presentation on stockpile design prepared by the landscape architect at a future meeting, indicating how the stockpile will be shaped, including: a. its relationship to the flood plain (at minimum relationship to 1:100 year flood line and PMF) b. how its associated hydrology will be managed c. how its design anticipates future changes necessary as part of the SSTOM works (e.g. what is the maximum amount that can be added to the stockpile in future; what is maximum subtraction? Where on the stockpile should these additions and subtractions be made, and how will this effect planting being delivered by SCAW? What are the temporary and permanent iterations of the stockpile?) d. proposed species.	CPBUI	Refer comment 4.12	Closed by SM for SCAW. Matter to be addressed by other/future design packages (SSTOM, CLW)
SCAW	21/7/2022	5.26	Line Wide	Soils	Provide information to assist a broad scale understanding of the disturbance and movement of topsoils and spoil on the project. Indicate: a. location and treatment of any soil from other contracts that will be incorporated into the SCAW works b. extent and location of material and proposed handling/ remedial treatment to facilitate SCAW works c. anticipated locations for topsoil striping in SSTOM	CPBUI / SM Design Team	Detail presented 1.09.2022	Closed
SCAW	21/7/2022	5.27	Landscape	Hydrology	Provide more information on how the overall hydrology and drainage of the project is being developed, with consideration to: a. how the proposed works integrate with the existing water ecosystem b. how the water eco-system is managed in relation to temporary stages of work through to the desired finished state c. extent of flooding around abutments and in relation to viaduct heights and future development.	CPBUI	Strategy identified: - Minimise change where possible. - Existing flow patterns maintained, all major waterways and their floor plans are crossed using viaducts. - Limit clearing of existing vegetation at creek crossings. Water quality measures have been incorporated in all discharge points. - Scour protection will be included where needed.	Closed
GENERAL	21/7/2022	5.28	General	Interfaces and coordination	Identify and itemise all known interface issues and present to the DRP at the next session.	SM Design Team	All known interfaces with SSTOM Contractor itemised in the Project Interface Register. These have been developed in accordance with the project Interface Requirements Specification which categorise the interfaces as follows: - Bridge and viaducts - such as shear key and derailment kerb starter bars, cast in ferrules for future service routes, drainage systems and deck waterproofing etc. - Luddenham Station - such as allowance in viaduct pier design to support future station platform. - Alignment and Formation Earthworks - such as earthwork quality and levels for future track construction, as well as earthwork interfaces at each end of the project alignment. - Drainage - bio-retention basins.	Closed
GENERAL	21/7/2022	5.29	General	Interfaces and coordination	SM to consider how to best communicate and inform the SSTOM team of interface issues to ensure desired design outcomes (e.g., design guidelines for abutment fencing).	SM Design Team	SM have design guidelines, the reference design and particular specifications as well an informed design management team to communicate requirements. SM-WSA Guidelines, SM Reference Design and Particular Specifications communicate desired and required outcomes for Corridor elements including fencing. SM Design Team SME's review SSTOM design in relation to these requirements.	Closed
SCAW	8/4/2022	6.01	Line Wide	Joints	Develop a deliberate and considered architectural treatment for the viaduct that informs detailed design decisions around jointing and other details. Consideration may be given to: a. expressing, rather than minimising, the sectional nature of the viaduct. b. other joint techniques such as a shadow line, which may alleviate the issue of damage during construction while providing coverage to services behind.	CBPUI	Refer comment 2.05.	Closed by SM noting not all Panel advice adopted
SCAW	8/4/2022	6.02	Line Wide	Joints	Demonstrate that design decisions around joint design are informed by buildability, to ensure that damage to edges is minimised.	CPBUI	Chamfered joints recommended to address buildability and damage issues. Refer comment 2.05.	Closed
SCAW	8/4/2022	6.03	Line Wide	Abutment areas	Prepare sketch options and a succinct performance brief to guide the future SSOTM contractor towards optimal outcomes for fencing and gates around the abutments, and to make allowance now for any adjustments within the SCAW design to accommodate this optimal outcome.	CPBUI	Item closed for SCAW. This issue has been noted by SM and will be listed as an item for SSTOM to address.	Closed
SCAW	8/4/2022	6.04	Line Wide	Abutment areas	There are two lines of fencing at the abutments creating the Asset Protection Zone (or sterile zone) around the abutment areas. The inner face fence must provide the primary deterrent with the outer fence acting as a secondary deterrent. It was also confirmed that there will be 7 to 8km of double fencing where the tracks are at-grade. SM to provide illustrations of proposed fencing.	SM Design Team	Item closed for SCAW. This issue has been noted by SM and will be listed as an item for SSTOM to address.	Closed
SCAW	8/4/2022	6.05	Line Wide	Abutment areas	Provide more detail on the planting that can be used to minimise the visual impacts and defensive qualities of fencing around the abutments.	SM Design Team	Item closed for SCAW. This issue has been noted by SM and will be listed as an item for SSTOM to address.	Closed

SENSITIVE: NSW GOVERNMENT
Western Sydney Airport
Design Review Panel Action Tracker

PACKAGE	MEETING DATE	ITEM #	GEOGRAPHIC LOCATION	THEME	DRP ADVICE	TEAM TO RESPOND	ACTION / RESPONSE	STATUS
SCAW	8/4/2022	6.06	Line Wide	Abutment areas	SM to provide a range of cross sections to illustrate: a. the planting possibilities (zones for shrubs, location of tree planting) both around abutments and along the line where fencing is in evidence. b. the scapae of planting SM will be maintaining.	SM Design Team	Item closed for SCAW. This issue has been noted by SM and will be listed as an item for SSTOM to address.	Closed
SCAW	8/4/2022	6.07	Line Wide	Viaduct	SM to provide : a. sections and diagrams to indicate the potential location of these egress points. b. images to illustrate examples from other Metro projects.	SM Design Team	Item closed for SCAW. This issue has been noted by SM and will be listed as an item for SSTOM to address.	Closed
GENERAL	8/4/2022	6.08	Line Wide	Interfaces and coordination	SM to circulate a list of known interface and coordination issues to be added to on an ongoing basis.	SM Design Team	Refer comment 5.29	Closed
OTHER	8/4/2022	6.10	Line Wide	Independent Reviewer	SM to confirm a definition of 'independent' in terms of the PUDCLP review.	ESP Team / Precinct Team	Information has been provided to the Panel Advisor on the definition of 'Independent' in terms of the PUDCLP review. The guidelines referred to in CoA A25 provide the definition and DPE expectations when they use the word 'independent' in conditions of approval. The relevant section in the guidelines headed 'Consideration taken into account by the Department when approving an independent expert'.	Closed
OTHER	8/4/2022	6.12	Line Wide	Independent Reviewer	SM to confirm if two reviewers could be appointed to a single PUDCLP to ensure appropriate levels of expertise across different disciplines.	Precinct Team	Clarification has been provided to Panel Advisor on the role of the Independent Reviewer, number of reviewers per PUDCLP (1 for SCAW and 1 for FSM - 2 may be permitted for SSTOM). Independent Reviewer to be nominated by the DRP for each PUDCLP but can be the same reviewer across all PUDCLPS.	Closed
OTHER	9/1/2022	8.01	Line Wide	Connecting with Country	Consider the opportunities for collaboration between Aboriginal consultants across the various packages. While this is occurring organically due to Murawin's involvement in both SCAW and SSTOM, a more structured and deliberate collaboration, guided by SM and the Connecting with Country Working Group, would undoubtedly be fruitful and establish a new benchmark for Design Excellence in this area.	CwC	Noted by SM and will be raised with SSTOM.	Closed
SCAW	9/1/2022	8.04	Line Wide	Connecting with Country	Provide a program for meetings between the contractor's Aboriginal consultant (Murawin) and the CwC WG to ensure the latter is actively and continuously engaged, with their advice fully integrated into the PUDCLP and future stages.	CwC / CPBUI	Program developed and provided to SM.	Closed by SM. SM CwC SME to continue to monitor ongoing progress.
SCAW	9/1/2022	8.05	Line Wide	Connecting with Country	Provide regular updates from the contractor's Aboriginal consultant on the outcomes of the collaboration with the CwC WG.	CPBUI	CwC Working Group and Contractors Aboriginal Consultant will continue to collaborate and provide updates to SM. A Walk on Country with the Connecting with Country Working Group occurred on 19/10/2022	Closed by SM.
SCAW	9/1/2022	8.06	Line Wide	Connecting with Country	Expedite the discussed Walk on Country (or a series of walks if needed) to ensure this important act of knowledge-sharing informs project thinking as soon as possible.	CwC	CWC confirmed that this is being organised between CWC WG and CPBUI.	Closed
SCAW	9/1/2022	8.07	Line Wide	Connecting with Country	Explore opportunities for the integration of Aboriginal language and naming in SCAW works.	CwC / Precinct Team	SM Precinct Team will look into naming.	Closed
SCAW	9/1/2022	8.08	Line Wide	Built Form	Identify where the viaduct will be viewed at close proximity, and consider the design refinements that could be made to ensure legibility of the pier form.	Design Team	Refer comment 4.04	Closed
SCAW	9/1/2022	8.09	Line Wide	Built Form	Provide further detail on the depth of bird proofing mesh inserts.	CPBUI	Refer to comment 5.09	Closed by SM.
SCAW	9/1/2022	8.10	Line Wide	Concrete elements	Outline the measures taken to mitigate the risk of colour inconsistencies between non-standard 'make-up' sections of the parapet and standard panels.	CPBUI / Design Team	Refer to comment 2.06 .	Closed by SM noting not all Panel advice adopted.
SCAW	9/1/2022	8.11	Line Wide	Concrete elements	It was noted that the current target for the carbon footprint of the concrete is 350-380 kg CO2-e/m3, and the contractor believes they are tracking to meet this - Provide regular updates on how the concrete carbon footprint is tracking against this target	CPBUI / Design Team	After 12 concrete mix design tests, a preferred concrete mix has been determined which has ~365kg/m3 of cement content and uses 195kg/m3 of fly ash. Minor refinements will occur but the cement content is unlikely to change significantly. Change to RED - ongoing updates Refer to comment 2.17.	Closed
SCAW	9/1/2022	8.14	Line Wide	Soils	Allow for testing of soil microbiology in addition to tests being conducted by SESL.	CPBUI / Design Team	Sydney Metro satisfied with SESL recommendation on soil testing and aemioration. Sydney Metro's Ecologica Restoration Specialist will be able to undertake more extensive soil testing if they determine that soil microbiology testing is a useful to proposed restoration approach. Refer comment 5.21	Closed by SM noting not all Panel advice adopted.
SCAW	9/1/2022	8.16	Line Wide	Landscape	Provide ongoing updates on the development of the stockpile design.	CPBUI	Refer comment 4.12	Closed by SM noting not all Panel advice adopted.
SCAW	9/1/2022	8.17	Line Wide	Flooding	Provide sectional iformation on the location of piers in relation to flooding in the riparian zones.	CPBUI / Design Team	The piers have been positioned based on a topographical model with the riparian zones At Blaxland Cree, detailed site surveys of the riparian zones have now confirmed that during general flows the pier is located outside of the main creek zone. The pier does will get wet in events as low as 1:2yr, but it these situations the water has swollen out of the creek line and spread between both spans.	Closed by SM.
SCAW	9/1/2022	8.18	Line Wide	Flooding	Demonstrate that consideration has been given to a range of flood events, not only major ones.	CPBUI / Design Team	Technical assessment has been completed. Stage 3 Hydrology and Flood Report will be finalised by the end of the year and the DRP can be provided with a copy.	Closed by SM
SCAW	9/1/2022	8.19	Line Wide	Flooding	Provide a copy of the hydrology report for the Panel's information.	CPBUI	CPBUI are starting to consult with adjacent land owners with respect to any local flooding impacts. Finalised Stage 3 Hydrology and Flood report will be provided at the end of the year. The DRP and PCC will be provided with a copy of the SCAW Hydrology and Flood report when it is finalised	Closed
OTHER	15/9/2022	9.17	Line Wide	Planning Approvals	SM to meet with DPE out-of-session and as soon as possible to clarify and confirm issues related to this CoA, including whether a separate report authored by the DRP is required to meet this condition. DRP Panel Chair and Panel Advisor to attend.	ESP / Precinct Team	Response and steps to CoA E63: - The SM-WSA Contractors hold the obligation for complying with CoA E63. - CPBUI's intent is to prepare a memo which summarises how their design response addresses CoA E63(a)-(e). - CPBUI's submission will include relevant information that had been presented to the DRP, any feedback they received from DRP and how this was addressed (or not). - SM to review and submit to Planning Secretary (DPE). DPE attended DRP panel session 10 November to discuss CoA E63.	Closed by SM.
OTHER	15/9/2022	9.19	Line Wide	Planning Approvals	SM to schedule a meeting to allow the SCAW PUDCLP Independent Reviewer to seek clarifications from the DRP	Precinct Team	Meeting between DRP and Independent Reviewer undertaken 10 November 2022. The Independent Reviewer is to seek clarification from the SM SCAW Contractor in relation to the PUDCLP. The DRP is independent of the review process and role is to be provide design advice to the SCAW design elements brought before the Panel as per the ToR. The Independent Reviewer will present their findings to the DRP once the review is finalised.	Closed by SM.