



TW
13467
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Troy Loveday
Project Manager - Planning Services
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Dear Troy

PENRITH LAKES S75W MODIFICATION (DA1 MOD1) - MANAGEMENT OF RESIDUAL MATERIALS - RESPONSE TO SUBMISSIONS

Penrith Lakes Development Corporation (PLDC) submitted a Modification Application under Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to amend DA350/81 (DA1), which provides for the quarrying and rehabilitation at part of the Penrith Lakes site.

The Modification Application (Mod 1) is for the carrying out of works associated with the development of the residual materials consolidation area, the relocation of stable and non-putrescible residual materials for placement in the consolidation area, and the closure and capping of the of the area consistent with the approved final landform.

The Modification Application was exhibited in November and December 2014. As part of the exhibition period a total of six submissions were made, from the following parties:

- Penrith City Council (Council).
- Environment Protection Authority (EPA).
- Department of Primary Industries (PDI) – comprising inputs from the NSW Office of Water (NOW) and Agriculture NSW.
- Roads and Maritime Services (RMS).
- Sydney Catchment Authority (SCA).
- Nearby resident.

Attachment A to this letter includes a detailed summary of all the matters raised in submissions, and provides detailed, considered and thorough responses to these issues. A summary of key issues and responses is provided below. The RMS and the SCA had no comment on the Modification Application and have not been discussed further in this letter. The submission made by the private resident raised issues that are unrelated to the residual materials consolidation works associated with Modification Application, and so these issues are not detailed in the letter (but are responded to in **Attachment A**).

1.0 REUSE AND RECYCLING OF RESIDUAL MATERIALS

1.1 Summary of Key Issues

The NOW, Agriculture NSW and Penrith Council all identify that many of the materials proposed to be consolidated on-site are able to be recycled, which is preferable to onsite burial where this is a viable option.

Council in particular notes that the proposed land filling approach is considered unsatisfactory, given that a significant proportion of the residual materials identified for on-site burial are recyclable with extensive reuse and recycling opportunities. Council further states that the proposal to bury the residual materials on site, has not sufficiently considered opportunities available for the resource recovery of the recyclable materials and therefore does not address the hierarchy of considerations of the Waste Avoidance and Resource Recovery Act 2001 (WARR Act) whereby disposal is recognised as the last and least favourable option.

1.2 Response to Key Issues

PLDC has actively sought reuse and recycling opportunities for the residual materials as part of the on-going rehabilitation of the Penrith Lakes Site. The process of recovering residual materials has identified a number of opportunities to reuse and recycle on-site. In addition, a number of third party recycling organisations have been provided access to the site to salvage reusable or recyclable materials. The materials that have already been identified for recycling and removed from the residual materials stockpiles consist of:

- Residual metal products totalling approximately 220m³, equivalent to approximately 2,200 tonnes (t).
- Residual concrete materials including concrete ballast, footings and pipe supports totalling approximately 500m³.
- Residual timber products totalling approximately 100m³.
- Residual soils recovered from the sieving process. Approximately 10,000m³ has been recycled and reused with a total forecast of 20,000m³ to be recycled and reused on site following completion of the sieving process.

The recycling of tyres is generally possible at significant cost, including transport costs and emissions to the environment during the recycling process. However, the tyres in question are generally heavy haulage truck tyres of a size not readily recyclable in Australia. Recent experience by PLDC is that recycling of these types of tyres would require shipping to Asia, which is not a feasible solution, or an environmentally beneficial outcome.

In addition to the reuse and recycling opportunities already progressed, during the consolidation works, residual materials that can be recycled and/or reused (including metal waste, timber, and combined materials suitable for reuse in construction of the landforms) will not be placed in the consolidation area and will be reused/recycled as much as practicable.

PLDC has exhausted all reasonable higher order reuse and recycling opportunities for the residual materials. As such, PLDC is pursuing the reuse of the residual materials that cannot be feasibly reused or recycled to fill an existing quarry void. This existing quarry void would otherwise be required to be filled with materials obtained off-site in order to create the approved landform. Consolidation of the residual materials into the void will avoid the need to import fill materials from off-site for the filling. Consolidation of the residual materials would therefore contribute to minimising resource use associated with rehabilitation of the quarried areas at the Penrith Lakes Site, and is a legitimate beneficial reuse of the residual materials.

2.0 REMEDIATION STANDARDS AND SUITABILITY OF THE SITE FOR FUTURE USES

2.1 Summary of Key Issues

The EPA and Council both identify that the residual materials consolidation works should be:

- Carried out in accordance with relevant NSW EPA contaminated land and waste management guidelines, including the EPA's Environmental Guidelines: Solid Waste Landfills, as well as ANZECC and NHMRC Guidelines and the *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013*.
- Subject of a statement by a Site Auditor, accredited under the Contaminated Land Management Act 1997, certifying that the on-site containment plan (including the EMP) is adequate to:
 - protect human health and the environment; and
 - ensure that after the completion of the proposed containment cell the site will be suitable for the proposed future land use.
- Subject of a validation report and a long-term management plan for the site (if required).

2.2 Response to Key Issues

PLDC accept the recommendations made by the EPA and Council as they are consistent with the proposed management regime for the works.

A suitably qualified Environmental Consultant will control and categorise the materials for consolidation. They will be quantified, and it has been agreed that a Scheme Management plan would be implemented to address all on site issues.

The consolidation area is located on a former quarry tailings deposit whose future intended land use is public open space.

The consolidation area will be subject to a future Site Audit Statement for the Southern Wetlands area (this includes the consolidation area) which will confirm suitability for the proposed future land use. This will be completed by an EPA accredited Site Auditor.

3.0 AGRICULTURE NSW

3.1 Summary of Key Issues

Agriculture NSW raises issues that are generally related to ensuring the future viability of the subject land for agricultural production, in the context of it being mapped as Biophysical Strategic Agricultural Land. Agriculture NSW indicates that the rehabilitation of the site should be to at least the previous existing level of agricultural potential and that the site post-rehabilitation should be capable of growing pasture.

3.2 Response to Key Issues

Whilst the land may be mapped as Biophysical Strategic Agricultural Land by NSW Agriculture, it is not currently used for agriculture and has been the subject of intensive extractive industrial activity for an extended period of time. The land the subject of the proposed residual materials consolidation is currently a quarrying void. As such, it is unlikely that the mapped Biophysical Strategic Agricultural Land, as shown in the submission, will ever be used for significant food production purposes.

The rehabilitation objectives for the site have been established under DA 350/81. The rehabilitation objectives are not focussed towards reinstating the land for agricultural activities, but rather towards creating a landform that reflects its future intended use as recreational public open space – as provided for under the Penrith Lakes Scheme, which is embodied within *State Environmental Planning Policy (Penrith Lakes Scheme) 1989* (the Penrith Lakes SEPP).

The future quality of the agricultural land, terms of its capacity to support pasture and cropping, is therefore not considered to be a relevant constraint for the residual materials consolidation project.

4.0 NSW OFFICE OF WATER

In addition to the issue of higher order reuse / recycling of the residual materials (see Section 1 above), NOW raise the following key issues:

- The entire consolidation area to be clay-lined to prevent any potential contamination of the local aquifer, unless evidence of isolation of the consolidation area from the aquifer can be provided.
- Due to its proximity to the Nepean River, the disturbed area may be impacted during periods of floods and high flows over the site.
- Works on waterfront land should be conducted in accordance with the NSW Office of Water's *Guidelines for Controlled Activities*.

4.1 Response to Key Issues

The Hydrogeological Assessment (provided at Appendix D of the EAR) includes a detailed description of the groundwater regime across the Penrith lakes site. The Hydrogeological Assessment includes inferred groundwater contours that are based on an analysis of monitoring bore data of up to 100 boreholes located on the Penrith Lakes site. The inferred groundwater level in the residual materials consolidation area is at approximately 11.5-12m AHD. Since the base of the consolidation void will be at approximately 22m AHD it can be safely concluded that there is a substantial vertical separation between the consolidation area void and the underlying groundwater system. The likely water entry point to the consolidation area is therefore from the surface. The clay capping to the consolidation area is a suitable and sufficient liner to prevent water from entering the consolidation area from the surface. As such, there will be insufficient infiltrating water to leach through the residual materials. Further, the residual materials to be placed in the consolidation area show no risk of leachate. On this basis, the PLDC do not consider that clay lining of the entire consolidation area to be necessary.

The proposed location of the consolidation area is approximately 200m away from the bank of the Nepean River (so the consolidation works area is not waterfront land), and is at a ground level elevation approximately 18m above the level of the bank (which is at approximately 10m AHD in this location). The final landform in this area has already been approved through the mechanisms established under DA 350/81. Analysis of the Molino Stewart Report prepared for Infrastructure NSW in relation to investigating the provision of flood mitigation capacity at Warragamba Dam, identifies that the residual materials consolidation area would not be inundated in a 1:100 year flood event, and is unlikely to be inundated except in an almost 1:1000 year flood event. This is well beyond a reasonable design standard for the landform.

Being approximately 200m away from the bank of the Nepean River the residual materials consolidation works area is not waterfront land, and so and it is not considered necessary or appropriate to require conformance with NOW's *Guidelines for Controlled Activities*.

5.0 ENVIRONMENT PROTECTION AUTHORITY

5.1 Summary of Key Issues

The EPA does not consider the proposed consolidation of residual materials to be best practice in terms of the management of waste generated during development of the Penrith Lakes Scheme. The EPA's preferred approach is for these materials to be disposed of at appropriate licenced waste disposal facilities in accordance with the EPA's Waste Classification Guidelines.

However, if the works are approved the EPA recommends a range of requirements, including that only materials generated from on-site activities are to be deposited in the consolidation area, as well as those listed in Section 2 above.

5.2 Response to Key Issues

The materials will be characterised prior to them being emplaced in the consolidation area. The residual materials that can be recycled and/or reused, including metal waste, timber, and combined materials suitable for reuse in construction of the landforms, will not be placed in the consolidation area.

For residual materials that cannot be recycled and/or reused the proposal assists in ensuring that these materials can avoid entering the solid waste management system, reducing the amount of resources required to collect and transport the waste. This is a form of waste avoidance, which is at the top of the waste hierarchy (that is, it is the first preference). The on-site consolidation of residual materials will not impact on the ultimate delivery of the land for open space area as set out in the Penrith Lakes SEPP Structure Plan, and is not expected to result in any significant adverse environmental impacts.

It will result in less heavy vehicles on local roads due to the reduced number of vehicles importing VENM (to create final design surface levels), and the reduced number of vehicles required to export residual materials off-site for disposal. As such, the proposed on-site consolidation of residual materials is considered to deliver social and environmental benefits compared to off-site disposal options.

PLDC would accept the requirements of the EPA as conditions of approval, as they are consistent with the proposed management measures, and the intent of PLDC to validate the entire site prior to final handover of the land to the NSW Government for its intended future use.

6.0 PENRITH CITY COUNCIL

6.1 Summary of Key Issues

In addition to the issue of higher order reuse / recycling of the residual materials (see Section 1 above), Council raise a number of issues:

- Part 1 of Schedule 2 of the Penrith Lakes SEPP needs to be addressed.
- The development needs to be better justified in terms of the overall benefit of the proposal compared to feasible alternatives in the context of potential environmental, economic and social gains that may be achieved through alternative higher order reuse opportunities, such as the recycling and reuse of the residual materials.
- Landfilling should not occur on the land until its future use is known.

If the works are approved Council recommends a range of requirements, as generally described in Section 2.

6.2 Response to Key Issues

Attachment B of this letter includes an assessment of the proposal against the matters of consideration listed in Part 1 of Schedule 2 of the Penrith Lakes SEPP. The matters for consideration include justification of the proposed development in the context of potential environmental, economic and social impacts.

The EAR has assessed the potential environmental and social impacts of the proposed consolidation of residual materials, and concluded that there are no significant adverse impacts, whilst there are social and environmental benefits to the on-site consolidation approach. The EAR identifies that the on-site consolidation of residual materials is justified on environmental, social and economic grounds because it:

- Avoids the residual materials from entering the waste management system, reducing the amount of resources required to collect and transport the waste.

- Avoids the need to import fill materials from off-site for the filling the existing quarry void, and is therefore a legitimate reuse of the residual materials contributing to minimising resource use associated with rehabilitation of the quarried areas at the Penrith Lakes Site.
- Will not impact on the ultimate delivery of the land for open space area as set out in the Penrith Lakes SEPP Structure Plan.
- Results in fewer impacts associated heavy vehicles movements on local roads within Penrith LGA, improving local amenity and minimising impacts on the surrounding community.
- Is not expected to result in any significant adverse environmental impacts.

In terms of the future land uses, the residual materials consolidation area is on land in close proximity to the Nepean River frontage that is zoned Open Space Area under the Penrith Lakes SEPP. Under the terms of DA1, the area is subject of an approved final landform plan that incorporates walking tracks and a picnic area, and is adjacent to wetlands ponds C and D. The future intended use for this part of the site will clearly be for passive recreational uses (and not for residential uses), and it is not considered necessary to delay the consolidation of residual materials until future master planning is complete.

PLDC would accept the other recommendations made by Council, as they are consistent with the proposed management measures, and the intent of PLDC to validate the entire site prior to final handover of the land to the NSW Government for its intended future use.

7.0 CONCLUSION

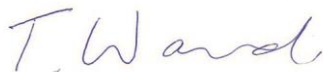
In accordance with Section 75H of the EP&A Act it is considered that detailed and thorough responses to all of the issues raised in submissions has been provided.

The response to submissions identifies that PLDC has actively sought reuse and recycling opportunities for the residual materials as part of the on-going rehabilitation of the Penrith Lakes Site, and will continue to do so in order to minimise the emplacement of reusable and/or recycling materials into the void. However, PLDC has exhausted all reasonable higher order reuse and recycling opportunities for the residual materials, and so is pursuing the reuse of the residual materials that cannot be feasibly reused or recycled to fill an existing quarry void. This represents a legitimate beneficial reuse of the residual materials that will avoid the need to import fill materials to fill the existing quarry void in order to create the approved final landform.

The proposed on-site consolidation of residual materials is a cost effective and low impact approach to the management of residual materials, which internalises within the site the residual materials management requirements, and avoids adverse off-site impacts associated with transport, handling, processing and disposing of waste materials.

I trust this is all the information you require at this stage, however should you have any queries regarding this matter or require any further particulars then please do not hesitate to contact me on 94094962 or tward@jbaurban.com.au.

Yours faithfully



Tim Ward
Associate

Attachments:

- Attachment A: Submissions Issues Summary and Responses Table, JBA
- Attachment B: Assessment against Part 1 of Schedule 2 of the Penrith Lakes SEPP, JBA



Attachment A: Summary of Submissions and Responses to Issues Raised in Submissions

Issue no.	Key Issues Summary	PLDC Response
Department of Primary Industries (DPI)		
<i>NSW Agriculture</i>		
1	The land is near or within mapped Biophysical Strategic Agricultural Land (Attachment).	Whilst the Penrith Lakes Scheme lands may be mapped as Biophysical Strategic Agricultural Land by NSW Agriculture, the area intended for the management of residual materials is not currently used for agriculture and has been the subject of intensive extractive industrial activity. The land the subject of the proposed residual materials consolidation is currently a quarrying void. Whilst the Penrith Lakes Scheme lands elsewhere are used for Agricultural purposes, it is noted that this is true for much of the land shown in the map provided in the submission. Land that has not been subject of extractive industries generally comprises vegetation fronting the Nepean River. As such, it is unlikely that the mapped Biophysical Strategic Agricultural Land, as shown in the submission, will ever be used for significant food production purposes.
2	The rehabilitation of the site should be to at least the previous existing level of agricultural potential. The use of tyres for filling land is not a recommended or common technique for rehabilitating agricultural land. The Department has no field experience on the practice. There are a number of potential impacts. ▪ The benefits in terms of improved drainage and subsoil aeration would depend strongly on the particle size of the rubber material. Buried whole tyres would retain large air gaps and be of limited use for water retention and root growth. Drainage through such a zone would not occur until the topsoil was saturated, limiting the benefits and restricting root growth to the topsoil zone. However, under supersaturated conditions the zone may assist in reducing extended waterlogging, provided that a high water table did not develop in the zone. The benefits might be greater if the tyres were more finely shredded and	Responses to listed issues are provided below: ▪ The rehabilitation objectives for the lands the subject of this submission have been established under DA 350/81. The rehabilitation objectives are not focussed towards reinstating the land for agricultural activities, but rather towards creating a landform that reflects its future intended use as recreational public open space. It is highlighted that the residual materials consolidation area will be capped with a clay layer to minimise the infiltration of rainwater. As such, the consolidation area is purposefully designed not to store water for root growth, and to limit root growth to the topsoil zone. ▪ The residual materials consolidation area will be capped with a clay layer to minimise the infiltration of rainwater. As such, the consolidation area is purposefully designed not to store water for root



Issue no.	Key Issues Summary	PLDC Response
	mixed with soil. ▪ If the zone of buried tyres contains little interspersed soil, it would create a layer of low soil fertility and contribute little to plant growth. ▪ Any large air gaps would make the zone susceptible to rapid movement of saturated flow, containing any soluble material. The zone would transmit readily any water table movements. ▪ During saturated conditions, any air pockets in the tyres may cause the tyres to rise over time. Whether this occurs would depend on how effectively they have been 'laced'. ▪ Over the very long term, some breakdown of the tyres may occur. There may be some potential for contaminant release and movement. It is unlikely that this would affect plant growth noticeably.	growth, and to limit root growth to the topsoil zone. ▪ The residual materials consolidation area will be capped with a clay layer to minimise the infiltration of rainwater. As such, little or no infiltration of rainwater is expected in the consolidation area, and little or no leachate to the groundwater system is expected. The material has also been assessed as stable/benign and not susceptible to leachate. ▪ The residual materials consolidation area will be capped with a clay layer to minimise the infiltration of rainwater. As such, little or no infiltration of rainwater is expected in the consolidation area, and saturated conditions under the capped layer are not expected to occur. ▪ Any breakdown of the tyres would occur underneath the clay layer cap, and so would not impact on any vegetation growth relying on the topsoil.
3	Any weed management should be in line with State, regional or local weed management plans or strategies, in particular, it should be consistent with the Hawkesbury River County Council Weed Management Plan.	Weed management will be carried out in accordance with approved final landform and rehabilitation plans currently in place under DA 350/81.
4	Topsoil should remain on-site for the final landform rehabilitation.	As the subject land has been intensively modified by previous quarrying activities, the original topsoil layer is not available for rehabilitation. Any existing topsoil layer that is deemed to be useful will be retained for reuse on-site.
5	The site post tyre fill should be capable of growing pasture. Shredding of tyres and mixing with soil would most likely be better for soil drainage and limit creating a zone of soil infertility. The use of car waste products as landfill is not an economically or environmentally sustainable solution and alternative-recycling options should be investigated. Although the Department of Primary Industries does not formally object to this proposal, Agriculture NSW does not support in principle the use of tyres as landfill unless it improves the quality of the agricultural land.	The land has no current agricultural potential as it has historically been subjected to intensive quarry activities, and currently comprises a quarry void. The land will ultimately be returned to a landform that reflects its future intended use as recreational public open space. As such, it is unlikely that the land will ever be used for significant food production purposes. The future quality of the agricultural land, terms of its capacity to support pasture and cropping, is therefore not considered to be a relevant constraint for the residual materials consolidation project.



Issue no.	Key Issues Summary	PLDC Response
		Residual metal materials are being recycled as much as practicable, including all residual metals from cars. Prior to their containment in the residual material consolidation area the tyres will be cut into smaller pieces to reduce their mass and integrate them with the other materials being consolidated.
<i>NSW Office of Water</i>		
1	Many of the materials proposed to be consolidated on-site are able to be recycled, which is preferable to onsite burial where this is a viable option. The EPA should be consulted in this regard. No cost-benefit analysis of recycling/reuse of these materials appears to have been provided.	PLDC has actively sought reuse and recycling opportunities for the residual materials. The process of recovery of residual materials has identified a number of opportunities to reuse and recycle. The materials identified for recycling consist of: ▪ Residual metal products totalling approximately 220m³, equivalent to approximately 2,200 tonnes (t). ▪ Residual concrete materials including concrete ballast, footings and pipe supports totalling approximately 500m³. ▪ Residual timber products totalling approximately 100m³. ▪ Residual soils recovered from the sieving process. Approximately 10,000m³ has been recycled and reused with a total forecast of 20,000m³ to be recycled and reused on site following completion of the sieving process. The recycling of tyres is generally possible at significant cost, including transport costs and emissions to the environment during the recycling process. However, the tyres in question are generally heavy haulage truck tyres of a size not readily recyclable in Australia. Recent experience by PLDC is that recycling of these types of tyres would require shipping them to Asia. Prior to their placement in the residual material consolidation area the tyres will be cut into smaller pieces using heavy duty industrial sheers to reduce their mass and integrate them with the other materials being consolidated including road base materials.



Issue no.	Key Issues Summary	PLDC Response
		The EPA has identified that stockpiling of tyres in the open, either at a recycling facility or on a premises is a significant environmental issue in regard to potential tyre stockpile fires. The placement of tyre pieces integrated within the layers of the consolidation area would mitigate this risk.
2	The report claims that as the base of the proposed residual materials consolidation area is at a minimum of 10m above the level of the Nepean River, and similarly above the water-level that will be created in nearby lakes system and the underlying groundwater level, the proposed modification is unlikely to impact on existing groundwater flows. Evidence of groundwater levels relevant to the proposed consolidation area should be provided to substantiate this claim.	The Hydrogeological Assessment (provided at Appendix D of the EAR) includes a detailed description of the groundwater regime across the Penrith lakes site. Figure 5 of the Hydrogeological Assessment shows inferred groundwater contours, that are based on an analysis of monitoring bore data of up to 100 boreholes located on the Penrith Lakes site that have been intermittently monitored since the late 1980s. The inferred groundwater level in the residual materials consolidation area is at approximately 11.5-12m AHD. Since the base of the consolidation void will be at approximately 22m AHD it can therefore be safely concluded that there is a substantial vertical separation between the consolidation void and the underlying groundwater system.
3	I note that the physical barrier of the residual materials consolidation area would include a 500mm thick highly impervious clay seal, which will minimise the amount of water infiltrating into the residual materials consolidation area and so will minimise the amount of water coming into contact with buried residual materials. While it is claimed that the inert dry materials proposed to be consolidated are relatively stable in the natural environment and are not characteristic of products that generate contaminated leachate, the NSW Office of Water would prefer the entire consolidation area to be clay-lined to prevent any potential contamination of the local aquifer, unless evidence of isolation of the consolidation area from the aquifer can be provided.	PLDC do not consider clay lining of the entire consolidation area (including its walls and base) to be necessary for the following reasons. ▪ There has been a number of ground water monitoring wells established in the vicinity of the residual materials consolidation area, which show that the groundwater is significantly lower than the base of the consolidation area, and the nearest water body. As such, there is unlikely to be any infiltration of groundwater into the residual materials consolidation area. ▪ A possible water entry point to the consolidation area is therefore from the surface, although this is unlikely under normal conditions given its elevated finished surface level and the gradient of the completed land surface. The clay capping seal over the consolidation area is an added interception component that will prevent water entry from the surface



Issue no.	Key Issues Summary	PLDC Response
		occurring. ▪ The residual material is not of a liquid nature and has been identified as suitable for on-site consolidation due to its negligible risk to the environment. This determination has been made following a Multiple Extraction Procedure (MEP) toxicity test to allow an assessment of any potential leachate under expected environmental conditions at the Site.
4	The proposed location of the consolidation area appears to be on the outside bend of the Nepean River, making it more susceptible to erosion during floods. As such, the geomorphic implications of this proposal need to be explored to ensure that the disturbed area will not be significantly impacted during periods of floods and high flows over the site.	The proposed location of the consolidation area is approximately 200m away from the bank of the Nepean River, and is at a ground level elevation approximately 18m above the level of the bank (which is at approximately 10m AHD in this location). The final landform in this area has already been approved through the mechanisms established under DA 350/81. This final landform shows a swale taking surface water from within the Penrith Lakes Site (and including from the finished surface overlying the consolidation area) northwards towards the internal lakes. A Molino Stewart Report prepared for Infrastructure NSW in relation to investigating the provision of flood mitigation capacity at Warragamba Dam, identifies likely worst case flood events at Penrith, as follows: ▪ Probable Maximum Flood – 32.1m AHD ▪ 1:1000 flood event – 28.5m AHD ▪ 1:100 year event - 26m AHD With a finished surface level at approximately 28m AHD, the residual materials consolidation area would not be inundated in a 1:100 year flood event, and is unlikely to be inundated except in an almost 1:1000 year flood event.
5	While the proponent is exempt from the need to obtain a Controlled Activity Approval in relation to this proposal, any works on waterfront land should still be conducted in accordance with the NSW Office of Water's <i>Guidelines for Controlled Activities</i>.	The residual materials consolidation works are proposed to take place approximately 200m from the Nepean River. The proposed works will take place on land that has been subject of historical quarrying activities, and outside of the vegetated riparian corridor associated with



Issue no.	Key Issues Summary	PLDC Response
		the Nepean River. As such, no works will occur on waterfront land (as defined under the <i>Water Management Act 2000</i>) and it is not considered necessary or appropriate to require conformance with the NSW Office of Water's Guidelines for Controlled Activities.
Environment Protection Authority (EPA)		
1	The EPA does not consider the burying and capping of over 23,500m³ of various waste materials as best practice for the management of waste generated during development of the Penrith Lakes Scheme. The EPA's preferred approach is for these waste materials of varying types to be disposed of at appropriate licenced waste disposal facilities in accordance with the EPA 's Waste Classification Guidelines (Nov, 2014).	The materials will be characterised prior to them being emplaced in the consolidation area. The residual materials that can be recycled and/or reused, including metal waste, timber, and combined materials suitable for reuse in construction of the landforms, will not be placed in the consolidation area. The proposal avoids the residual materials from entering the solid waste management system, reducing the amount of resources required to collect and transport the waste. This is a form of waste avoidance, which is at the top of the waste hierarchy (that is, it is the first preference). It will also avoid the need to import fill materials from off-site for filling the existing quarry void to the approved final landform. Consolidation of the residual materials would therefore contribute to minimising resource use associated with rehabilitation of the quarried areas at the Penrith Lakes Site, and is a legitimate beneficial reuse of the residual materials that cannot be reused or recycled. The on-site consolidation of residual materials will not impact on the ultimate delivery of the land for open space area as set out in the Penrith Lakes SEPP Structure Plan, and is not expected to result in any significant adverse environmental impacts. It will result in less heavy vehicles on local roads due to the reduced number of vehicles importing VENM (to create final design surface levels), and the reduced number of vehicles required to export residual materials off-site for disposal. Appropriate mitigation and management measures have been set out, including standard noise, air quality and water management controls and monitoring during the works. Additional measures include:



Issue no.	Key Issues Summary	PLDC Response
		- Ensuring that the residual materials emplaced in the consolidation area are recorded in a report to be prepared by a suitably qualified environmental consultant so as to inform future rezoning and development decisions. - Existing groundwater monitoring bores will continue to be monitored during the course of the residual materials consolidation works, and the results recorded in the post construction report to be prepared by the environmental consultant. As such, the proposed on-site consolidation of residual materials is considered to deliver social and environmental benefits compared to off-site disposal options.
2	However, if the proposal is approved by the DPE, the EPA would require the following: - PLDC to demonstrate that the only waste to be deposited in the containment cell is waste generated from on-site activities; - PLDC to advise the final quantity of residual materials to be contained; - PLDC to prepare a long-term Environmental Management Plan (EMP) for the containment cell; - A statement by a Site Auditor, accredited under the Contaminated Land Management Act 1997, certifying that the on-site containment plan (including the EMP) is in accordance with relevant guidelines including the EPA's Environmental Guidelines: Solid Waste Landfills (1996), and is adequate to: - protect human health and the environment; and - will ensure that after the completion of the proposed containment cell the site will be suitable for the proposed future land use.	PLDC accept the EPA's recommendations as they are consistent with the proposed management regime for the works. A suitably qualified Environmental Consultant will control and categorise the materials for consolidation. They will be quantified, and it has been agreed that a Scheme Management plan would be implemented to address all on site issues. The consolidation area is located on a former quarry tailings deposit whose future intended land use is public open space. The consolidation area will be subject to a future Site Audit Statement for the Southern Wetlands area (this includes the consolidation area) which will confirm suitability for the proposed future land use. This will be completed by an EPA accredited Site Auditor.



Issue no.	Key Issues Summary	PLDC Response
Penrith City Council		
1	Insufficient Justification for on-site burial proposal and inadequate address of feasible alternatives: - Part 1 of Schedule 2 of SEPP (Penrith Lakes Scheme) requires the statement of environmental effects to, amongst other things, 'Justify the proposed development in terms of environmental, <i>economic and social considerations</i>' and to include "<i>any feasible alternatives to the carrying out of the proposed development and the reasons for choosing the latter</i>" [Schedule 2, 1 (j)]. The EAR does not address Schedule 2 of the SEPP in entirety, focussing only on those matters listed in Part 2 of the schedule and omitting Part 1 matters. Given the nature of the proposal it is considered imperative that the matters listed in Part 1 of Schedule 2 be addressed, particularly in regard to justifying the proposal and investigating and assessing feasible alternatives which would be a more appropriate resolution rather than creating a land fill scenario where post quarrying use is yet to be established. - Whilst the EAR states that the proposed works will result in fewer impacts associated with heavy vehicle movements on local roads within the Penrith LGA, the EAR does not adequately demonstrate or justify the overall benefit of the proposal compared to feasible alternatives and it does not investigate the potential environmental, economic and social gains that may be achieved through alternative higher order reuse opportunities, such as the recycling and reuse of the recyclable materials. The proposed land filling approach is considered unsatisfactory, particularly given that a significant proportion of the residual materials identified for on-site burial are recyclable with extensive reuse and recycling opportunities, both on and off site.	The EAR, in general, addresses the matters listed in Part 1 of Schedule 2 of the Penrith Lakes Scheme SEPP. For completeness, a table has been provided in Attachment B of the Response to Submissions Report (of which this is Attachment A) that sets out the outcomes of the assessment, against the matters listed in Part 1 of Schedule 2.
2	Inconsistency with the objectives of environmental legislation and ecologically sustainable principles The objectives of the Protection of the Environment Operations (POEO)	Since the residual materials are not being taken off-site they are not considered to be waste. Notwithstanding this, it is highlighted that: The generation of the residual materials is historical, associated with



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	Act include the "reuse, recovery or recycling of materials" and "to assist in the achievement of the objectives of the Waste Avoidance and Resource Recovery Act 2001 (WARR Act)". In turn, the objectives of the WARR Act are to encourage the most efficient use of resources and to ensure that resource management options are considered against a hierarchy whereby resource recovery (through reuse, recycling, reprocessing and energy recovery) is considered above the least favourable option being disposal. The proposal to bury the residual (waste) materials on site, has not sufficiently considered opportunities available for the resource recovery of the recyclable materials and therefore does not address the hierarchy of considerations of the WARR Act whereby disposal is recognised as the last and least favourable option. Consequently, the proposal is inconsistent with environmental legislative objectives and contemporary ecologically sustainable development principles. It is considered that the proposal is seeking consent for the easiest and cheapest waste disposal methodology without sufficiently considering the potential environmental and social impacts of the works as outlined above. This is not an approach that should be supported by the Department.	long term historical quarrying and agricultural uses at the site. - The proposal avoids the residual materials from entering the solid waste management system, reducing the amount of resources required to collect and transport the waste. This is a form of waste avoidance, which is at the top of the waste hierarchy (that is, it is the first preference). - The proposed residual consolidation area is located within an existing quarry void. As such, in order to create the approved landform filling of this void will be required. Consolidation of the residual materials into the void will avoid the need to import fill materials from off-site for the filling. Consolidation of the residual materials would therefore contribute to minimising resource use associated with rehabilitation of the quarried areas at the Penrith Lakes Site, and is a legitimate reuse of the residual materials. Reuse of resources is the second most preferable option in the waste hierarchy. - PLDC has actively sought reuse and recycling opportunities for the residual materials. The process of recovery of residual materials has identified a number of opportunities to reuse and recycle. The materials identified for recycling consist of - Residual metal products totalling approximately 220m³ equivalent to approximately 2,200 t. - Residual concrete materials including concrete ballast, footings and pipe supports totalling approximately 500m³. - Residual timber products totalling approximately 100m³. - Residual soils recovered from the sieving process. Approximately 10,000m³ has been recycled and reused with a total forecast of 20,000m³ to be recycled and reused on site following completion of the sieving process.



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		▪ If the residual materials were taken off-site for resource recovery, then some residual component of the materials would ultimately end up in a landfill, thereby occupying valuable landfill space. The EAR has assessed the potential environmental and social impacts of the proposed consolidation of residual materials, and concluded that there are no significant adverse impacts, whilst there are social and environmental benefits to the on-site consolidation approach.
3	Master Planning for the Future Recreational and Residential Occupation of the Penrith Lakes Development ▪ It is understood that the applicant has enacted requests with the DP&E to commence a master planning process for the future development of the Penrith Lakes Scheme. It is also understood that the Office of Penrith Lakes in collaboration with the DP&E has been preparing a "Vision Document" for the development of the Penrith Lakes Scheme. Until such time as it can be established what is agreed to be developed for residential development, what is to be dedicated to the state government as recreational open space and where key infrastructure requirements will be delivered, a land fill scenario should not be entertained.	The residual materials consolidation area is on land in close proximity to the Nepean River frontage that is zoned Open Space Area under the Penrith Lakes SEPP. Under the terms of DA1, the area is subject of an approved final landform plan that incorporates walking tracks and a picnic area, and is adjacent to wetlands ponds C and D. Given the above, the future intended use for this part of the site will clearly be for passive recreational uses (and not for residential uses), and it is not considered necessary to delay the consolidation of residual materials until future master planning is complete.
4	Concurrence and Licencing Requirements ▪ The proposal for waste material to be used as fill may trigger various regulatory requirements such as the need to hold an environment protection licence or pay the waste and environment levy. Under the POEO (Waste) Regulation 2014, the EPA has the power to exempt waste material from some of these requirements where it can be demonstrated that the use of the waste is a "bona-fide, fit for purpose reuse opportunity" rather than a cheaper method of waste disposal. This issue will require consideration by DP&E in determining this application.	Since the residual materials are not being taken off-site they are not considered to be waste for the purposes of regulation under POEO (Waste) Regulation 2014. As such, the consolidation of the residual materials is not considered to be subject to the waste and environment levy. The PLDC operate under EPL 2956 which applies to the Penrith Lakes Scheme area. EPL 2956 will be amended, as required, and in consultation with the EPA, to account for changes in on-site operational activities associated with the residual materials consolidation activities.



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5	Determination ■ In the event that the DP&E do not pursue Council's requests for an alternate disposal methodology and associated recycling and re-use, it is requested that the Department ensure that all works (including design, construction and ongoing monitoring) be carried out in accordance with relevant NSW EPA contaminated land and waste management guidelines, ANZECC and NHMRC Guidelines and the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 and be supervised and validated by a suitably qualified environmental consultant, demonstrating that the site is suitable for the proposed end use. ■ It is also requested that, upon completion of site validation works and reporting, Council be furnished with a copy of the validation report for the works. Council will record the validation report on its property information system in accordance with the Penrith Contaminated Land Development Control Plan and SEPP 55- Remediation of Land. In approving site validation works, the Department will need to ensure that appropriate mechanisms are in place to manage the long-term and ongoing integrity of the on-site containment and capping. This may require, subject to site validation findings, the development of a long-term management plan for the site in addition to appropriate property notations and covenants.	The whole area will be subject to a future Site Audit Statement for the Southern Wetlands area which will confirm its suitability for the proposed future use. Site Validation will be provided to the consent authority as a part of the dedication process. The suitability of the site for the intended future land uses, in the context of the residual materials consolidation area, will be assessed as part of the key stages in the future land use planning processes for the land, including the future rezoning process, and as part of future development applications for specific works and/or developments at the site. However, as described in the EAR, a report will be developed by the site hygienist for the purpose of recording the contents of the residual materials consolidation area, limitations on the land use, and any ongoing maintenance requirements or management controls. This report would inform future rezoning and development decisions, and could be made available to Penrith City Council.
Roads and Maritime Services		
1	No objection	Noted
Sydney Catchment Authority		
1	No comment	Noted
Private Submission		
1	The billabong on the rear fence line (near intersection of Castlereagh Road	The billabong is located over 4.5km north of the proposed residual



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	and Church Lane) appears to have altered the water table on the submitter's site.	materials consolidation area. PLDC will address the submitter's issues separately.
2	The billabong is causing erosion issues on the adjoining property.	The billabong is located over 4.5km north of the proposed residual materials consolidation area. PLDC will address the submitter's issues separately.
3	Does not want to lose existing views westward facing of the lakes and the water.	The nominated views are from a residence over 4.5km north of the proposed residual materials consolidation area. The proposed residual materials consolidation area will have no impact on the submitter's westerly views.

Attachment B: Penrith Lakes SEPP Assessment

A summary of the matters listed in Part 1 of Schedule 2 of the Penrith Lakes SEPP is provided below.

No.	Matter for Consideration	Assessment
(a)	justification of the proposed development in the context of State Environmental Planning Policy (Penrith Lakes Scheme) 1989,	Section 4.2.1 of the EAR addresses Penrith Lakes SEPP. The proposed consolidation of residual materials will not impact on the ultimate delivery of the land as open space area as set out in the Penrith Lakes SEPP Structure Plan. In particular, consolidation of the residual materials will be carried out so that the land will comply with the criteria established as 'Health Investigation Levels C – Recreational' under the NEPM and is not expected to compromise future use of the Site for recreational land uses, as is provided for in the Penrith Lakes Scheme.
(b)	a full description of the proposed development,	Section 3 of the EAR provides a full description of the proposed development.
(c)	a statement of the objectives of the proposed development,	Section 1.1 of the EAR sets out the purpose of the modification – being to manage the large range of residual materials derived from previous agricultural and extractive industries at the Site.
(d)	a full description of the existing environment likely to be affected by the proposed development if carried out,	Section 2 of the EAR describes the site location and its context, provides a description of the site in terms of its biophysical characteristics as well as existing development and site functions.
(e)	identification and analysis of the likely environmental interactions between the proposed development and the environment,	Section 5 of the EAR provides an assessment of the likely interactions of the proposed development and the environment.
(f)	analysis of the likely environmental impacts or consequences of carrying out the proposed development (including implications for use and conservation of energy),	Section 5 of the EAR provides an assessment of the likely environmental impacts of carrying out the proposed development. In terms of the implications for use and conservation of energy, it is highlighted that the proposed consolidation of residual materials will have negligible impact on the use of energy across all of the rehabilitation works at Penrith Lakes. It is also reasonable to expect that the on-site consolidation of residual materials will use less energy than the off-site processing and/or disposal of these materials due to the higher energy requirements to transport, handle and process the materials away from the site.
(g)	justification of the proposed development in terms of environmental, economic and social considerations,	The EAR has assessed the potential environmental and social impacts of the proposed consolidation of residual materials, and concluded that there are no significant adverse impacts, whilst there are social and environmental benefits to the on-site consolidation approach. The EAR concludes that the consolidation of residual materials: - Will avoid the need to import fill materials from off-site for the filling the existing quarry void, and is therefore a legitimate reuse of the residual materials contributing to minimising resource use associated with rehabilitation of the quarried areas at the Penrith Lakes Site. - Will not impact on the ultimate delivery of the land for open space area as set out in the Penrith Lakes SEPP Structure Plan. - Will result in fewer impacts associated heavy vehicles movements on local roads within Penrith LGA, improving local amenity and minimising impacts on the surrounding community. It is a cost effective and low impact approach to the management of site-generated residual materials, which internalises within the site the management requirements and avoids adverse off-site impacts associated with transport, handling, processing and disposing of the materials.
(h)	measures to be taken in conjunction with the proposed development to protect the environment and an assessment of the likely effectiveness of those measures,	Section 5 identifies a range of additional mitigation and management measures that will be applied to protect the environment, including: - Standard noise, air quality and water management controls as are currently in place for ongoing quarrying and rehabilitation works across the Penrith Lakes Site. - Noise, dust and water monitoring as is currently in place for ongoing quarrying and rehabilitation works across the Penrith Lakes Site.

No.	Matter for Consideration	Assessment
		- Ensuring that the residual materials emplaced in the consolidation area are recorded in a report to be prepared by a suitably qualified environmental consultant so as to inform future rezoning and development decisions. - Obtaining a Site Audit Statement from an EPA accredited Site Auditor that confirms the site will be (or can be made) suitable for the proposed future uses. The nature of the residual materials management works are not significantly different from the ongoing quarrying and rehabilitation taking place at the Penrith Lakes Site. As such, the proposed environmental protection measures have been demonstrated to be sufficient and effective in the context of the nature of the works and the nature of the surrounding / receiving environment.
(i)	energy requirements of the proposed development,	The proposed consolidation of residual materials will have negligible energy requirements in the context of the use of energy across all of the rehabilitation works at Penrith Lakes. It is reasonable to expect that the on-site consolidation of residual materials will use less energy than the off-site processing and/or disposal of these materials due to the higher energy requirements to transport, handle and process the materials away from the site.
(j)	any feasible alternatives to the carrying out of the proposed development and the reasons for choosing the latter, and	PLDC has actively sought reuse and recycling opportunities for the residual materials. The process of recovery of residual materials has identified a number of opportunities to reuse and recycle. The materials identified for recycling consist of: - Residual metal products totalling approximately 220m³, equivalent to approximately 2,200 tonnes (t). - Residual concrete materials including concrete ballast, footings and pipe supports totalling approximately 500m³. - Residual timber products totalling approximately 100m³. - Residual soils recovered from the sieving process. Approximately 10,000m³ has been recycled and reused with a total forecast of 20,000m³ to be recycled and reused on site following completion of the sieving process. The recycling of tyres is generally possible at significant cost, including transport costs and emissions to the environment during the recycling process. However, the tyres in question are generally heavy haulage truck tyres of a size not readily recyclable in Australia. Recent experience by PLDC is that recycling of these types of tyres would require shipping them to Asia, and this has proved to be unfeasible. The proposed on-site consolidation of residual materials has been selected as the preferred approach to their management for the following reasons: - It avoids the residual materials from entering the waste management system, reducing the amount of resources required to collect and transport the waste. - It is a legitimate beneficial reuse of the residual materials that cannot be reused or recycled as it will avoid the need to import fill materials from off-site for filling the existing quarry void, therefore contributing to minimising resource use associated with quarry rehabilitation. - It will result in less heavy vehicles on local roads due to the reduced number of vehicles importing fill and the reduced number of vehicles required to export residual materials off-site for disposal. - It will not impact on the ultimate delivery of the land for open space area as set out in the Penrith Lakes SEPP Structure Plan, and is not expected to result in any significant adverse environmental impacts.
(k)	the consequences of not carrying out the proposed development.	If the on-site management of residual materials does not proceed then the residual materials would need to be disposed off-site into a licenced facility, requiring additional handling and transport of the materials, and resulting in the unnecessary occupation of some 23,500m³ of metropolitan landfill capacity.