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ITEM 4 DRAFT PLANNING PROPOSAL: LOT 100 DP 1123517, NO. 227 CORDEAUX ROAD, MT KEMBLA

On 12 March 2018, Council resolved to prepare a draft Planning Proposal for 227 Cordeaux Road, Mt Kembla (Lot 100 DP 1123517), which seeks to facilitate the subdivision of the land into two additional large residential lots, together with the establishment of a Conservation Agreement and funding mechanism administered by the Biodiversity Conservation Trust (OEH) to protect in perpetuity the identified environmental values on site. This site was considered in the Farmborough Heights to Mt Kembla Concept Plan that was endorsed by Council (9 December 2013) and the Department of Planning (20 March 2014) to guide future development potential for this area. The draft Planning Proposal was exhibited between 29 May and 27 June 2018 and 18 submissions were received, including three form letters.

The purpose of this report is to provide feedback on the exhibition and the advice of the Wollongong Local Planning Panel, and to finalise the Planning Proposal.

RECOMMENDATION

1 The draft Planning Proposal for 227 Cordeaux Road, Mt Kembla (Lot 100 DP 1123517) be progressed, following the registration of the Conservation Agreement on land title with the Office of Environment and Heritage, by finalising the Planning Proposal that seeks to amend the Land Zoning Map by:

   a rezoning 4.3 hectares of the site from E3 Environmental Management to E4 Environmental Living with a Minimum Lot Size of 5,000m² and Floor Space Ratio of 0.3:1; and

   b rezoning the remainder of the site (1.5 hectares) from E3 Environmental Management to E2 Environmental Conservation with a Minimum Lot Size of 39.99 hectares.

2 The final Planning Proposal be referred to the NSW Department of Planning and Environment for the making of arrangements for drafting to give effect to the final proposal, noting that the General Manager will thereafter proceed to exercise his delegation issued by the NSW Department of Planning and Environment under Section 69 in relation to the final proposal.

3 The Conservation Agreement for the riparian land be finalised and registered on land title with the Biodiversity Conservation Trust (OEH), funding obtained and active management underway, prior to the issuing of a subdivision development approval.

REPORT AUTHORISATIONS

Report of: David Green, Manager Environmental Strategy and Planning (Acting)
Authorised by: Andrew Carfield, Director Planning and Environment - Future City and Neighbourhoods

ATTACHMENTS

1 Concept Plan 2013 Map - Mount Kembla
2 Site Locality Map and Current Zoning
3 Indicative Subdivision Plan
4 Proposed Zoning, Minimum Lot Size and Floor Space Ratio Maps
5 Vegetation Management Plan
6 Petition received prior to Public Exhibition
7 Summary of Submissions
8 Wollongong Local Planning Panel Advice

BACKGROUND

On 13 April 2011, the NSW Department of Planning and Infrastructure (now Department of Planning and Environment) requested that Wollongong City Council prepare a Planning Strategy for the area between Farmborough Heights and Mt Kembla in order to develop a strategic framework to properly consider rezoning proposals, so that a lasting solution to the development potential and environmental management of the area could be identified. A working party comprising representatives from the Department and Council officers developed a Scope of Works and identified a study area boundary for the Planning Strategy, which were reported to Council at the 27 February 2012 meeting.

Council resolved to commit $171,527 to prepare the Farmborough Heights to Mt Kembla Concept Plan, in recognition of concerns raised by the community surrounding the need for an independent and up to date assessment of the environmental attributes of the area and the capacity to accommodate any increase in residential development. A comprehensive series of technical studies was conducted, including:

- Ecological and Riparian Assessment;
- Bushfire Constraints Analysis;
- Geotechnical and Topography Assessment;
- Contamination Assessment;
- Preliminary Assessment of Aboriginal and Non-Indigenous Heritage;
- Traffic and Transport Assessment;
- Stormwater Management, Drainage and Flooding Review;
- Visual Impact and Landscape Character Assessment;
- Utilities and Essential Services Review; and
- Strategic Planning Context Analysis.

The Department of Planning and Infrastructure (the Department) required the Concept Plan to be consistent with and complement the Illawarra Escarpment Strategic Management Plan (IESMP) and Illawarra Escarpment Land Use Review Strategy (IELURS). A significant objective of the Concept Plan was to identify the key environmental attributes to be enhanced, and require that any development be linked to the protection and enhancement of those environmental attributes. The environmental attributes were mapped, with areas identified for conservation and hence recommended for no residential development. The residual lands were identified as having potential to accommodate an appropriate scale of residential development on the basis of a lack of constraints (ie dominated by cleared land and exotic vegetation with little ecological value) and provided it could be demonstrated through a Planning Proposal that an improved environmental outcome could be achieved.

The Farmborough Heights to Mt Kembla Concept Plan (GHD 2013) identified:

- 231 hectares of proposed conservation areas;
- 100 hectares of potential residential development areas;
- An estimated maximum additional development potential of:
  - 78 dwellings in Farmborough Heights;
  - 107 dwellings in Cordeaux heights; and
  - 26 dwellings in Mount Kembla.

On 9 December 2013, Council considered a report on the outcomes of the studies and extensive community and stakeholder consultation, and resolved to adopt the Farmborough Heights to Mt Kembla Concept Plan and seek endorsement of the strategic document by the Department of Planning and Infrastructure to guide any future rezoning proposals. In a letter dated 20 March 2014, the Deputy Director General acknowledged the significant resources committed to the preparation of the Concept Plan by Council, and endorsed the Concept Plan as a strategic study to guide future Planning Proposals in the precinct.

The role of the Concept Plan is to guide development in the area in the context of active conservation, with individual Planning Proposals invited for specific land holdings identified in the Concept Plan, supported by updated and more detailed studies. The key objectives of the Concept Plan were to provide certainty for the community by identifying land suitable for conservation and potential development, and provide the opportunity to implement a number of mechanisms that will conserve and manage the environmental attributes of the area.

In January 2017, a Planning Proposal request was submitted by Cardno on behalf of the landowner for 227 Cordeaux Road, Mt Kembla, with additional information and revisions submitted between June 2017 and February 2018. This site was considered in the Farmborough Heights to Mt Kembla Concept Plan that was endorsed by Council (2013) and the NSW Department of Planning (2014). The Concept Plan identified potential for limited development at this site, provided (among other considerations) that in perpetuity conservation efforts supported by funding could be demonstrated (Attachment 1).

The original draft Planning Proposal request sought to facilitate an additional four residential lots on the site, however following feedback received during the preliminary consultation period in relation to access to the site, the draft Planning Proposal request has been revised down to two additional residential lots. The draft Planning Proposal request includes the establishment of a Conservation Agreement and funding mechanism administered by the Biodiversity Conservation Trust (Office of Environment and Heritage) to protect in perpetuity the identified environmental values on site associated with the riparian corridor.

The site is approximately 5.8 hectares in size and is currently zoned E3 Environmental Management. It is bounded by land zoned E4 Environmental Living to the north and south and E3 Environmental Management to the east and west. The site currently contains one residential dwelling and a shed, with a riparian corridor traversing the southern portion of the property. Vehicular access is provided via a single lane, right of way driveway, which also provides vehicular access to properties 1/227A and 2/227A Cordeaux Road (Attachment 2).

The endorsed Concept Plan identified potential to rezone this site at 227 Cordeaux Road, Mt Kembla to permit additional large lot residential development, subject to satisfying the accompanying Planning Principles and demonstration that an improved environmental outcome could be achieved for the land. The Concept Plan recommended an E4 Environmental Living zoning for the developable area with a minimum lot size of 5,000m², given the proximity to the escarpment and the desire for any development to be rural residential in character. This zoning controls for a more limited range of permitted land uses appropriate to the surrounding environmental setting and importantly this E4 Environmental Living zoning won't allow further subdivision for dual occupancies and multi dwelling houses. The Concept Plan identified the opportunity for the long term management, protection and enhancement of the riparian corridor on site, recommending an E2 Environmental Conservation zoning for the vegetated watercourse.

The development strategy contained in the Planning Proposal request seeks large lot residential development opportunity on land identified in the Concept Plan with little ecological value (areas dominated by cleared land, grazed areas and exotic vegetation), and proposes to undertake ecological conservation and rehabilitation works associated with the riparian corridor in the south identified as containing environmental values. The submitted Planning Proposal request included an indicative subdivision layout depicting two rural/residential large lots, seeking a rezoning to the recommended E4 Environmental Living with a minimum lot size of 5,000m² (Attachment 3). An E2 Environmental Conservation zoning is being proposed for 1.5 hectares of the site associated with the riparian corridor (Attachment 4).

The requirement in the Farmborough Heights to Mt Kembla Concept Plan to achieve a conservation outcome as the result of any Planning Proposal is proposed through the protection of the riparian corridor and vegetation in the south of the site with an E2 Environmental Conservation zoning and the establishment of a Conservation Agreement on land title for in perpetuity rehabilitation and management works. The Planning Proposal request is consistent with the Farmborough Heights to Mt Kembla Concept Plan.

Concept Plan recommendation	**Planning Proposal request**
Potential for six dwelling houses with E4 Environmental Living zoning with a minimum lot size of 5,000m² and E2 Environmental Conservation zoning for riparian corridor on site. Any Planning Proposal request must demonstrate active conservation - in perpetuity conservation efforts with funding.	Rezone part of the site as identified in the Farmborough Heights to Mt Kembla Concept Plan to E4 Environmental Living to facilitate two additional dwelling houses, with a minimum lot size of 5,000m²; and Rezone part of the site identified in the Farmborough Heights to Mt Kembla Concept Plan requiring environmental protection and restoration to E2 Environmental Conservation – an in perpetuity Conservation Agreement for the riparian corridor will be registered on land title, administered by the Biodiversity Conservation Trust (NSW Office of Environment and Heritage).

The Office of Environment and Heritage (OEH) support a long term conservation outcome being achieved for the site through establishing the proposed conservation areas. A Vegetation Management Plan (VMP EcoPlanning September 2017) details the management and restoration efforts for the areas designated as conservation zones, identifying an amount of $101,288 to provide on ground rehabilitation works over a five year period (Attachment 5). This VMP will provide the basis for a Conservation Agreement registered on land title and administered by the Biodiversity Conservation Trust (Office of Environment and Heritage) to ensure in perpetuity funding of conservation works. An in perpetuity Conservation Agreement will be required to be registered on land title, funding obtained and active management underway prior to the issuing of a subdivision development approval.

On 12 March 2018, Council considered a report on the draft Planning Proposal request and resolved:

1 *A draft Planning Proposal be prepared and submitted to the NSW Department of Planning and Environment for 227 (Lot 100 DP 1123517) Cordeaux Road Mount Kembla seeking a Gateway determination to:*

   a *Rezone (4.3ha) of the site from E3 Environmental Management to E4 Environmental Living with a Minimum Lot Size of 5,000m² and Floor Space Ratio of 0.3:1; and*

   b *Rezone the remainder of the site (1.5ha) from E3 Environmental Management to E2 Environmental Conservation.*

2 *The draft Planning Proposal be exhibited for 28 days.*

3 *The Department of Planning and Environment be requested to issue authority to the General Manager to exercise plan making delegations in accordance with Council's resolution of 26 November 2012.*

A favourable Gateway determination was subsequently received on 2 May 2018 and the draft Planning Proposal was placed on exhibition between 29 May and 27 June 2018.

PROPOSAL

The purpose of the draft Planning Proposal request is to facilitate a development strategy for the subject lands to allow large lot residential development on part of the site, together with the establishment of a Conservation Agreement and funding mechanism administered by the Biodiversity Conservation Trust (OEH) to protect in perpetuity the identified environmental values on site. This is consistent with the Farmborough Heights to Mt Kembla Concept Plan and associated planning principles (2013), where any rezoning on a property must lead to an overall conservation improvement.

The development strategy for this site has the potential to support, rehabilitate and improve the following important environmental functions of the riparian corridor on site:

- Providing a diversity of fauna and flora habitat resources;
- Providing connectivity between wildlife habitats;
- Providing bed and bank stability and reducing bank and channel erosion;
- Protecting water quality by trapping sediment, nutrients and other contaminants; and
- Conveying flood flows and controlling the direction of flood flows.

The Vegetation Management Plan (VMP) prepared for the site has identified the following standard and other management actions for the restoration and stabilisation of the riparian area, to improve biodiversity values:

- Reduce the abundance and cover of exotic species, including woody weeds, which are preventing the establishment and further succession of native plant species;
- Creating a revegetated riparian zone to buffer the watercourse from the impacts of the surrounding land use (eg nutrient enriched runoff);
- Revegetating the subject site with a combination of native mid storey, over-storey and occasional grasses/groundcovers;
- Increasing the complexity of the habitat within the riparian zone for macroinvertebrates and terrestrial fauna;
- Implementing a “top of catchment approach” by reducing the vegetative and propagule spread of exotic species further down the catchment.

This VMP will provide the basis for a Conservation Agreement registered on land title and administered by the Biodiversity Conservation Trust (Office of Environment and Heritage) to ensure in perpetuity funding of conservation works.

The Farmborough Heights to Mt Kembla Concept Plan identifies Mt Kembla as having a high scenic and environmental quality that will need to be maintained and refers to Council’s Development Control Plan (DCP) which has specific controls to preserve the historic identity and character of Mt Kembla village, as well as maintain a green corridor around the eastern approach to provide separation from the neighbouring suburbs of Cordeaux Heights and Unanderra. Consultation with the community during the development of the Concept Plan indicated a concern that, although recognised in the Illawarra Escarpment Management Plan (IESMP) and Council’s DCP, there was at the time no current strategy to improve vegetation management of this corridor. The community feedback at that time additionally centred on the need for any development to be low scale to prevent urban creep from Cordeaux Heights.

The long term effects of the abovementioned management actions outlined in the Vegetation Management Plan for this site will be to strengthen the green physical and visual corridor between Cordeaux Heights and Mt Kembla, in line with the community’s long standing vision to retain a unique historical identity, and secure a long term conservation outcome in association with the riparian corridor. Larger lot sizes were the recommendation of the Concept Plan in line with the environmental setting and the requirement to retain a green buffer around Mt Kembla.

CONSULTATION AND COMMUNICATION

The draft Planning Proposal was exhibited between 29 May and 27 June 2018 following the Gateway determination. The Gateway determination required that the following public authorities be consulted:

- NSW Roads and Maritime Services;
- NSW Rural Fire Service;
- NSW Office of Environment and Heritage;
- Department of Primary Industries – Water;
- Sydney Water.

The exhibition was advertised through Council's website and in the Illawarra Mercury (26 May 2018) and Advertiser (30 May 2018) newspapers. Copies of the suite of documents were available for viewing on Council's website, in Wollongong and Unanderra libraries, and at Council's Customer Service Centre in the Administration Building, Wollongong. Adjoining property owners, public authorities, and Neighbourhood Forum 5 were notified of the public exhibition by mail.

It should also be noted that Council received a petition signed by 91 residents prior to the Planning Proposal being considered at the 12 March 2018 meeting, and prior to the suite of documents being placed on exhibition (Attachment 6). Residents signing that petition were sent a letter advising of the exhibition period. All letters notifying the exhibition included a reference to the Farmborough Heights to Mt Kembla Concept Plan (GHD 2013), and the suite of exhibition material included a copy of the Concept Plan.

As a result of the exhibition the website page received 208 views, five public authority submissions, 10 community letters (with 12 signatures), and three community form letters (total of 22 signatures) (Attachment 7).

Public Authority Submissions

The *Office of Environment and Heritage (OEH)* attended a site visit in March 2017, identifying that the subject site represents a strategically important linkage opportunity, and contains a diversity of native flora species with good potential for rehabilitation and recovery. The OEH support the protection of the riparian corridor area by an in perpetuity Conservation Agreement registered on land title. The Biodiversity Conservation Act 2016 and associated reforms commenced in August 2017, which have now introduced the Biodiversity Conservation Trust (Office of Environment and Heritage) with a key role to support and encourage landholders to enter into Conservation Agreements to protect biodiversity on private land. Under the new Biodiversity Conservation legislation, some Conservation Agreements will be eligible for stewardship payments and a range of assistance, with landowners able to access the Landholder Support Program. The OEH submission additionally states that the property is identified in the Illawarra Shoalhaven Regional Plan (ISRP 2015) as occurring within a biodiversity corridor, with the proposal considered consistent with the ISRP provisions to look for opportunities to improve funding and resilience of corridors in strategic planning.

The focus of the Planning Proposal on riparian conservation to improve the ecological value of the watercourse is consistent with the Illawarra Biodiversity Strategy (2011), which highlights the degradation of native riparian vegetation and invasion of exotic weeds as major threats to biodiversity in the Illawarra, and identifies the importance of Council encouraging conservation and restoration efforts on private land in this regard. The value of landscape connectivity is well recognised by various state, regional and local policies, including Australia's Biodiversity Conservation Strategy (2009) and the Southern Rivers Catchment Action Plan (2013-23). Maintaining connectivity and enhancing existing connectivity within corridors by regenerating or revegetating missing links is also one of the three recommended approaches to managing biodiversity in the face of climate change.

The OEH submission during the preliminary consultation phase requested the completion of an Aboriginal cultural heritage due diligence assessment. A due diligence assessment was subsequently completed in accordance with OEH guidelines (Biosis 2017), involving a desktop analysis and archaeological survey. No new sites were discovered during the archaeological survey with the conclusion drawn that the entire study area is assessed as having low archaeological potential.

The original Planning Proposal request for four additional lots was forwarded to the *NSW Rural Fire Service (RFS)* for comment during the preliminary consultation phase. The RFS did not support the original Planning Proposal due to Planning for Bushfire Protection 2006 compliancy issues regarding access to the site. The RFS submission stated that the development of the site should be restricted to a maximum of two additional dwellings if reliant solely on the existing access (noting the potential for the site to accommodate more dwellings if alternative access could be arranged such as acquisition of other properties, as suggested in the Farmborough Heights to Mt Kembla Concept Plan). The Planning Proposal request was subsequently amended based on this advice, seeking an additional two lots (down from the four lots originally proposed) in order to meet access requirements.

The *Roads and Maritime Services (RMS)* raised no objections to the Planning Proposal, however noted that Council must be satisfied that the access arrangements are suitable for the proposed intensification/additional dwellings (including sight lines), and that suitable arrangements are in place for ongoing garbage pickup.

Sydney Water raised no objections, noting that more detailed comments relating to servicing future residential developments will be provided when development applications are submitted to Council and referred to Sydney Water. Initial investigations show there is adequate capacity to service the proposed development, noting amplifications or extensions to the drinking water network may be required, however limited capacity exists in the trunk wastewater network system and a feasibility application will need to be lodged with Sydney Water.

The *Department of Primary Industries – Water* raised no objections, however stated that following a rezoning, appropriate protections would be required to ensure that the E2 Environmental Conservation zoned riparian area is protected from future activities such as hazard reduction measures to create Asset Protection Zones.

Community Submissions

As a result of the exhibition, a total of 13 submissions were received from the community, three of these submissions received as form letters (containing 22 signatures):

- Community Individual Letters (10, with 12 signatures);
- Community Form Letter 1 (10 signatures);
- Community Form Letter 2 (eight signatures); and
- Community Form Letter 3 (four signatures).

The key concern expressed in 26 community submissions centred on the need to retain the green corridor at the entrance to the village and running behind the existing houses up to the fire trail. The green corridor is valued by the community as a physical and visual separation between neighbourhoods, allowing the Mt Kembla village to maintain its unique historic character and identity, as a separate locality. Additional residential development and the potential for urban sprawl were cited as a threat to the green corridor, which could render Mt Kembla an extension of Cordeaux Heights and Unanderra. Related to this, 11 submissions questioned whether additional residential development could contribute to the rehabilitation of environmentally sensitive areas and result in an improved environmental outcome at the site. Submissions cited a concern about loss of vegetation and the impact on wildlife corridors at the foothills of Mt Kembla.

The Farmborough Heights to Mt Kembla Concept Plan identifies Mt Kembla as having a high scenic and environmental quality that will need to be maintained and refers to Council's Development Control Plan (DCP) which has specific controls to preserve the historic identity and character of Mt Kembla village, as well as maintain a green corridor around the eastern approach to provide separation from the neighbouring suburbs of Cordeaux Heights and Unanderra. The Concept Plan for the Mt Kembla precinct highlights the green corridor to be preserved (and for proposed rehabilitation) as "E2 Environmental Constraint" (Attachment 1).

The Vegetation Management Plan (VMP) prepared for the site responds to the Concept Plan, detailing the management and restoration efforts for the riparian corridor designated as a conservation zone. An amount of $101,288 has been identified to provide on ground rehabilitation works. This VMP will provide the basis for a Conservation Agreement registered on land title and administered by the Biodiversity Conservation Trust (OEH) to ensure in perpetuity funding of conservation works. This report is seeking a Council resolution that the Planning Proposal be finalised once the Conservation Agreement is registered on land title with OEH, and then the issuing of subdivision development approval being conditional on funding being obtained and active management underway. These measures are to ensure any development occurs in the context of active conservation, with the long term effects of the VMP management actions being to strengthen the green physical and visual corridor between Cordeaux Heights and Mt Kembla, in line with the community's long standing vision to retain a unique historical identity. The Office of Environment and Heritage (OEH) has identified this site as representing a strategically important linkage opportunity, containing a diversity of native flora species with good potential for rehabilitation and recovery. The OEH support the protection and rehabilitation of the riparian corridor area by an in perpetuity Conservation Agreement registered on land title.

A total of 26 submissions expressed concern that the properties had been purchased in the full knowledge of the planning restrictions and landowners therefore should not expect to have their properties rezoned. A further 25 submissions raised concerns that allowing these rezonings would set a precedent and encourage other rezoning and subdivision enquiries. The intent of developing the Concept Plan in 2013 was to provide the community with certainty, identifying areas that could potentially accommodate additional limited residential development, along with the areas of environmental quality to be protected and rehabilitated. Planning Proposals are now being considered for the sites identified in the Concept Plan and evaluated in relation to consistency with that Plan.

Concern about the safety and practicality of access to the site with the existing shared driveway was raised in four submissions, given the proximity to the existing houses and insufficient width for two vehicles to pass. The Planning Proposal was accompanied by a Desktop Traffic Assessment confirming that vehicular access to the site is currently provided via a single lane, two-way right of way driveway approximately 80 metres in length, which also provides access to properties No 1/227A and 2/227A Cordeaux Road. The Assessment also included a Vehicle Conflict Analysis in order to determine whether the existing single lane right of way will continue to operate satisfactorily with an increased number of traffic movements. The analysis concluded that the probability of two vehicles meeting along the driveway is negligible, and that in the rare occasion that a vehicle is seeking to enter or exit the driveway when it is already occupied by another vehicle travelling in the opposite direction, there is ample sight distance for two vehicles to see each other. The Rural Fire Service (RFS) and internal Traffic Division Council referrals recommended limiting the proposed subdivision to a maximum of two additional dwellings if reliant on the current access arrangements.

Overall nine submissions expressed the view that, given Council is a financial beneficiary of increased rates with these subdivisions, can they be trusted to act on the behalf of the community. The Council made the decision to invest significant funds in 2013 to engage independent professional advice to develop the Farmborough Heights to Mt Kembla Concept Plan in order to provide certainty to the community as to development potential of the area and identify areas of ecological significance to be protected.

The table below summarises the key findings from the public exhibition:

Submission	Submitter	Comment
Support exhibited draft Planning Proposal	Office of Environment & Heritage (OEH)	This support reflects acknowledgement that the riparian corridor represents a strategically important linkage opportunity and contains a diversity of native flora species with good potential for rehabilitation and recovery. The OEH support the protection of the riparian corridor area by an in perpetuity Conservation Agreement registered on land title and administered by the Biodiversity Conservation Trust (OEH). The OEH submission states the property is identified in the Illawarra Shoalhaven Regional Plan (2015) as occurring within a biodiversity corridor, with the proposal considered consistent with the ISRP provisions to look for opportunities to improve funding and resilience of corridors in strategic planning.
No objection	NSW Rural Fire Services (RFS) Roads and Maritime Services (RMS) Sydney Water Department of Primary Industries - Water	Noted
Concern about need to retain the green corridor at the entrance to the village and running behind the existing houses up to the fire trail.	26 community submissions	The Farmborough Heights to Mt Kembla Concept Plan identifies Mt Kembla as having a high scenic and environmental quality that will need to be maintained and refers to Council's Development Control Plan which has specific controls to preserve the historic identity and character of Mt Kembla village, as well as maintain a green corridor around the eastern approach to provide separation from the neighbouring suburbs of Cordeaux Heights and Unanderra.
Question whether additional residential development could contribute to the rehabilitation of environmentally sensitive areas and result in an improved outcome at the site.	11 community submissions	The Vegetation Management Plan prepared for the site responds to the Concept Plan, and will provide the basis for a Conservation Agreement registered on title and administered by the Biodiversity Conservation Trust (OEH) to ensure in perpetuity funding of conservation works. The long term effects of the VMP management actions will be to strengthen the green physical and visual corridor between Cordeaux Heights and Mt Kembla, in line with the community's long standing vision to retain a unique historical identity.

Submission	Submitter	Comment
		The OEH identified that the site represents a strategically important linkage opportunity and contains a diversity of native flora species with good potential for rehabilitation and recovery. The OEH submission states the property is identified in the Illawarra Shoalhaven Regional Plan (2015) as occurring within a biodiversity corridor, with the proposal considered consistent with the ISRP provisions to look for opportunities to improve funding and resilience of corridors in strategic planning. An amount of $101,288 has been identified in the VMP to provide on ground rehabilitation works.
Concern that the properties have been purchased in the full knowledge of the planning restrictions and landowners should not expect to have their properties rezoned	26 community submissions	The intent of developing the Concept Plan in 2013 was to provide the community with certainty, identifying areas that could potentially accommodate additional limited residential development, along with the areas of environmental quality to be protected and rehabilitated. Planning Proposals are now being considered for the sites identified in the Concept Plan and evaluated in relation to consistency with that Plan.
Allowing these rezonings will set precedent and encourage other rezoning and subdivision enquiries	25 community submissions	The Concept Plan identified potential to rezone this site to permit additional large lot residential development, subject to demonstration that an improved environmental outcome could be achieved.
Can Council be trusted to act on the behalf of the community; given Council is a financial beneficiary of increased rates with these subdivisions.	9 community submissions	Council made the decision to invest significant funds in 2013 to engage independent professional advice to develop the Farmborough Heights to Mt Kembla Concept Plan in order to provide certainty to the community as to development potential of the area and identify areas of ecological significance to be protected.
Concern about the safety and practicality of access to the site with the existing shared driveway, given proximity to existing houses and insufficient width for two vehicles to pass.	4 community submissions	A Vehicle Conflict Analysis was conducted to determine whether the existing single lane right of way will continue to operate satisfactorily with an increased number of traffic movements. The analysis concluded that the probability of two vehicles meeting along the driveway is negligible, and that in the rare occasion that a vehicle is seeking to enter or exit the driveway when it is already occupied by another vehicle travelling in the opposite direction, there is ample sight distance for two vehicles to see each other.

Submission	Submitter	Comment
		The Rural Fire Service and internal Council Traffic Division recommend limiting the proposed subdivision to a maximum of two additional dwellings if reliant on the current access arrangements, and the Planning Proposal request was modified (down from 4 additional dwelling sites to 2) to address the access issue. Concept Plan identified sufficient capacity within existing road network to accommodate estimated traffic generation from proposed development and sufficient capacity re utilities.

Internal feedback

Comment on the draft Planning Proposal request was received from four internal divisions of Council. Development Engineering indicated no objection from a stormwater and floodplain management perspective, noting that any future development of the land will be subject to the requirements of Wollongong DCP 2009 Chapters E13 and E14, Clause 7.3 of Wollongong LEP 2009 and the NSW Government's Floodplain Development manual 2009.

The feedback from the traffic division was that the proposed development of the site would need to be revised down to two additional lots (as opposed to the four initially sought) in order to comply with AS2890.1 in relation to the width of the driveway and the provision of passing opportunities.

The geotechnical review indicated that the building envelopes are considered feasible from a geotechnical perspective and encountered geotechnical constraints can readily be managed through routine earthworks.

The Environment division attended a site visit to confirm environmental values on site and indicated that the actions outlined in the VMP would result in a moderate to high level Biodiversity outcome being achieved. A key recommendation was that the indicative building envelopes be moved north to enable a 50 metre set back from the riparian corridor, to ensure all APZs are located in the E4 Environmental Living zoned land. A further recommendation was that an appropriate conservation agreement should be registered, funding obtained and active management underway prior to the issuing of a subdivision DA to ensure an improved biodiversity outcome, as envisaged by the new Biodiversity Conservation Act 2016.

Wollongong Local Planning Panel

On 31 October 2018, the Wollongong Local Planning Panel considered the Planning Proposal following a request from Ward 2 Councillors seeking the Panel's independent advice on the consistency with the Farmborough Heights to Mt Kembla Concept Plan.

The Panel agreed that the site has both strategic and site specific merit and is consistent with the Farmborough Heights to Mt Kembla Concept Plan. The Panel noted the submissions received and considered that the proposed E2 Environmental Conservation zoning would create a reasonable and satisfactory buffer, both visual and physical, to Mount Kembla village (Attachment 8).

PLANNING AND POLICY IMPACT

This report contributes to the delivery of Our Wollongong 2028 goal "*The natural environment is protected and enhanced*" under the Community Goal "*We value and protect our environment*". It specifically delivers on the following:

Community Strategic Plan	Delivery Program 2018-2021	Operational Plan 2018-19
Strategy	3 Year Action	Operational Plan Actions
1.6.1 Our urban environment minimises impacts on habitat and biodiversity and areas of high conservation value are protected	1.6.1.1 Review planning controls for environmentally sensitive locations	Continue to assess Planning Proposals against environmental strategies, including the Illawarra Biodiversity Strategy and the Illawarra Escarpment Strategic Management Plan.

The endorsed Farmborough Heights to Mt Kembla Concept Plan is consistent with and complements the Illawarra Escarpment Strategic Management Plan (IESMP 2015) and the Illawarra Escarpment Land Use Review Strategy (IELURS 2007). Succinctly, the IESMP and IELURS consider that limited development may be possible having regard to the environmental sensitivity of the receiving environment provided there are mechanisms in place to drive rehabilitation and restoration of the land and its surrounds. One of the principles of the IESMP is "recognition that the asset (the Escarpment) is in a degraded state and therefore continual improvement is required". The Farmborough Heights to Mt Kembla Concept Plan is also consistent with the objectives and targets of regional strategies including the Illawarra Biodiversity Strategy (2011) and Illawarra Regional Strategy 2006-31 (2007), with a focus on priority vegetation and important habitat corridors.

CONCLUSION

The Planning Proposal for 227 Cordeaux Road, Mt Kembla is consistent with the recommendations contained in the Farmborough Heights to Mt Kembla Concept Plan. The Office of Environment and Heritage has acknowledged the potential for net conservation gains at this site and support a long term conservation outcome being achieved. The establishment of a Conservation Agreement, registered on land title and administered by the Biodiversity Conservation Trust (OEH) will provide the legal and financial mechanism to achieve active conservation on this site, as required by the Concept Plan.

The in perpetuity protection of ecologically constrained land with funding in association with low density limited residential development will provide a suitable development outcome for this site whilst significantly enhancing the biodiversity values of an important riparian and habitat corridor. Registration of the Conservation Agreement on land title with the Office of Environment and Heritage will be required prior to finalisation of the Planning Proposal, as evidence of the active conservation required by the Concept Plan. The management actions outlined in the Vegetation Management Plan, including extensive revegetation works, will strengthen the green physical and visual corridor between Cordeaux Heights and Mt Kembla, in line with the community's long standing vision to retain the unique historical identity of Mt Kembla village.

It is recommended that Council resolve to finalise the exhibited Planning Proposal for 227 Cordeaux Road, Mt Kembla.

wollongong
city of innovation

Concept Plan 2013: Farmborough Heights to Mt Kembla
(Mount Kembla)

Legend

- Sites assessed for potential additional Residential Development
- Ecology Constraint-E2 (Green Corridor)
- 0 = No additional dwellings recommended
- 3-5-6 = Maximum number of potential additional dwellings

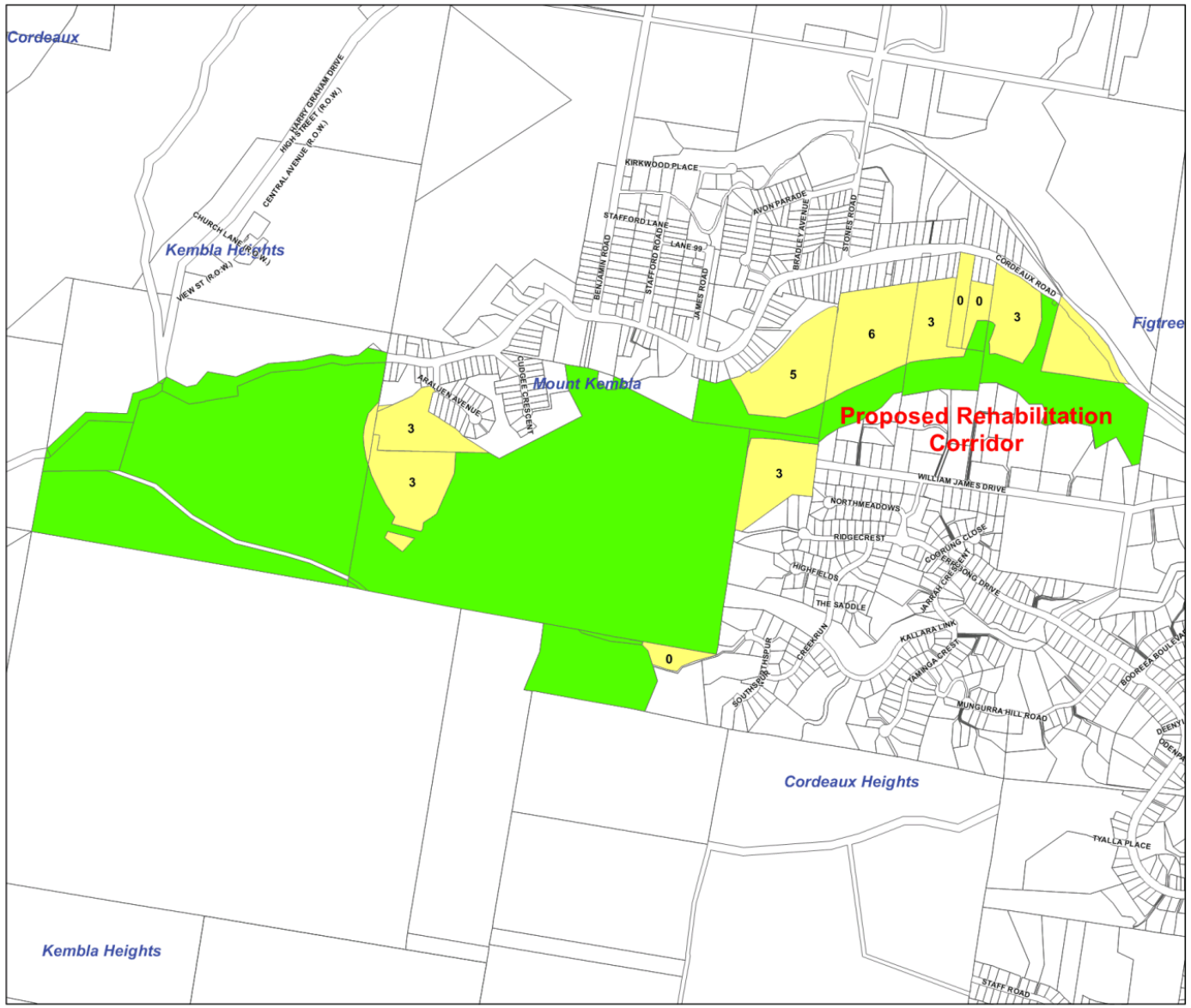
Potential Additional Dwellings : 26

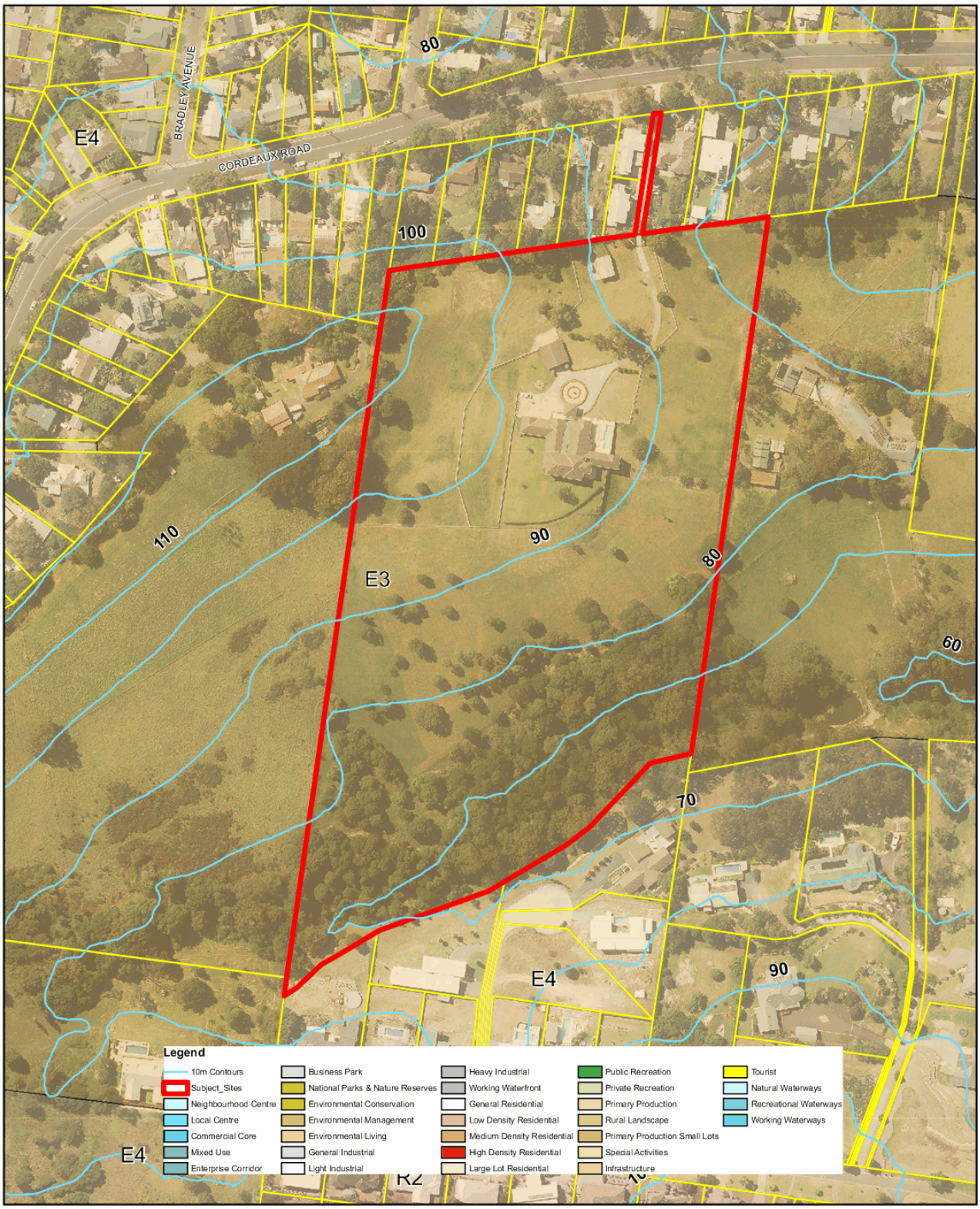
NB: Accompanying Planning Principles to be addressed

N W E S

0 400
Meters

Date of Aerial Photography: 2016
Drawn By: H. Jones
Date: 09 July 2018
Gis ref: Farmborough Heights A3 GHD 3 09-07-18.mxd





wollongong
city of innovation

Site Location And Current Zoning for
227 Cordeaux Rd
Mt Kembla

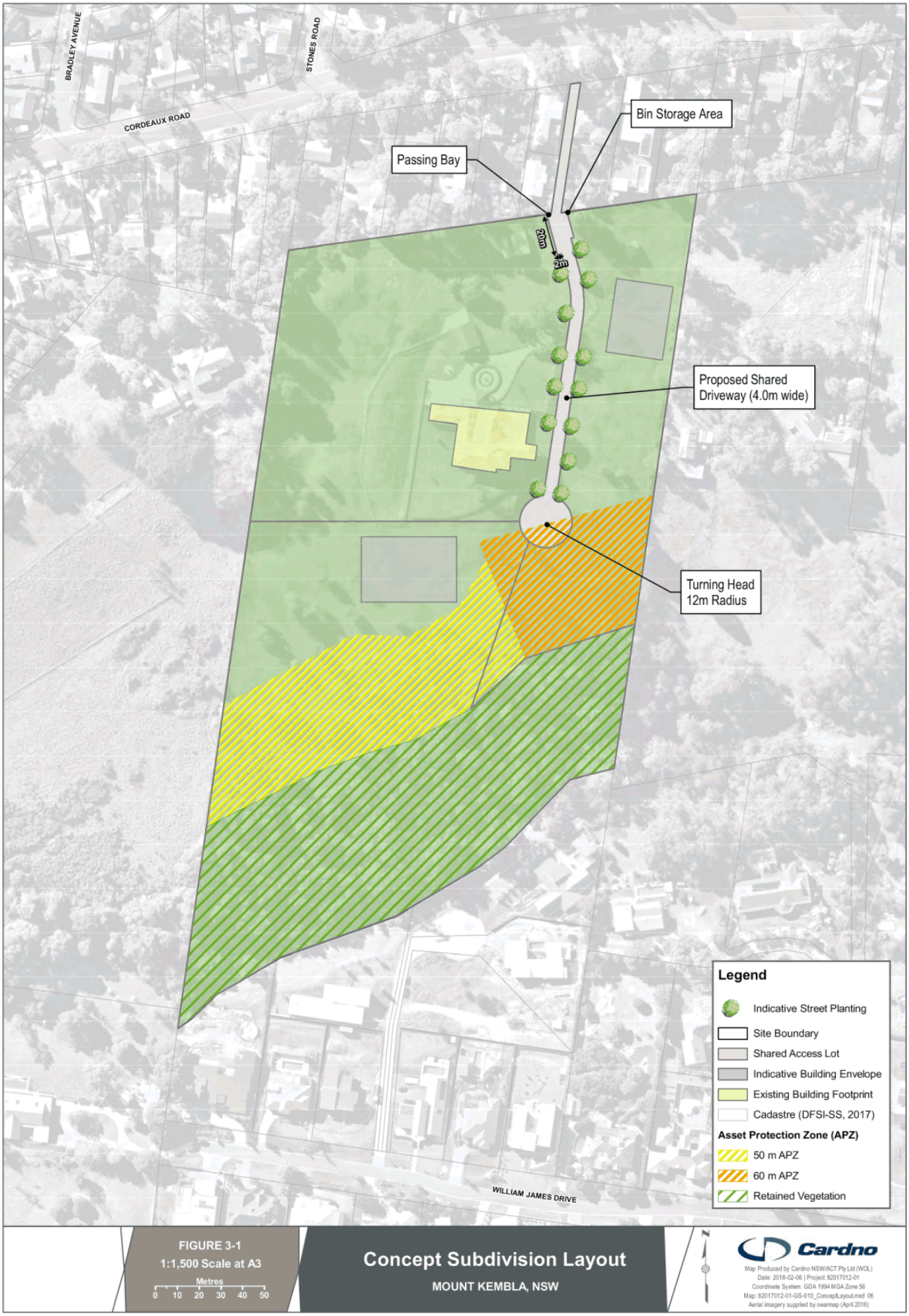
10m Contours
Subject_Sites

N
Projection: GDA 1994
MGA Zone 56

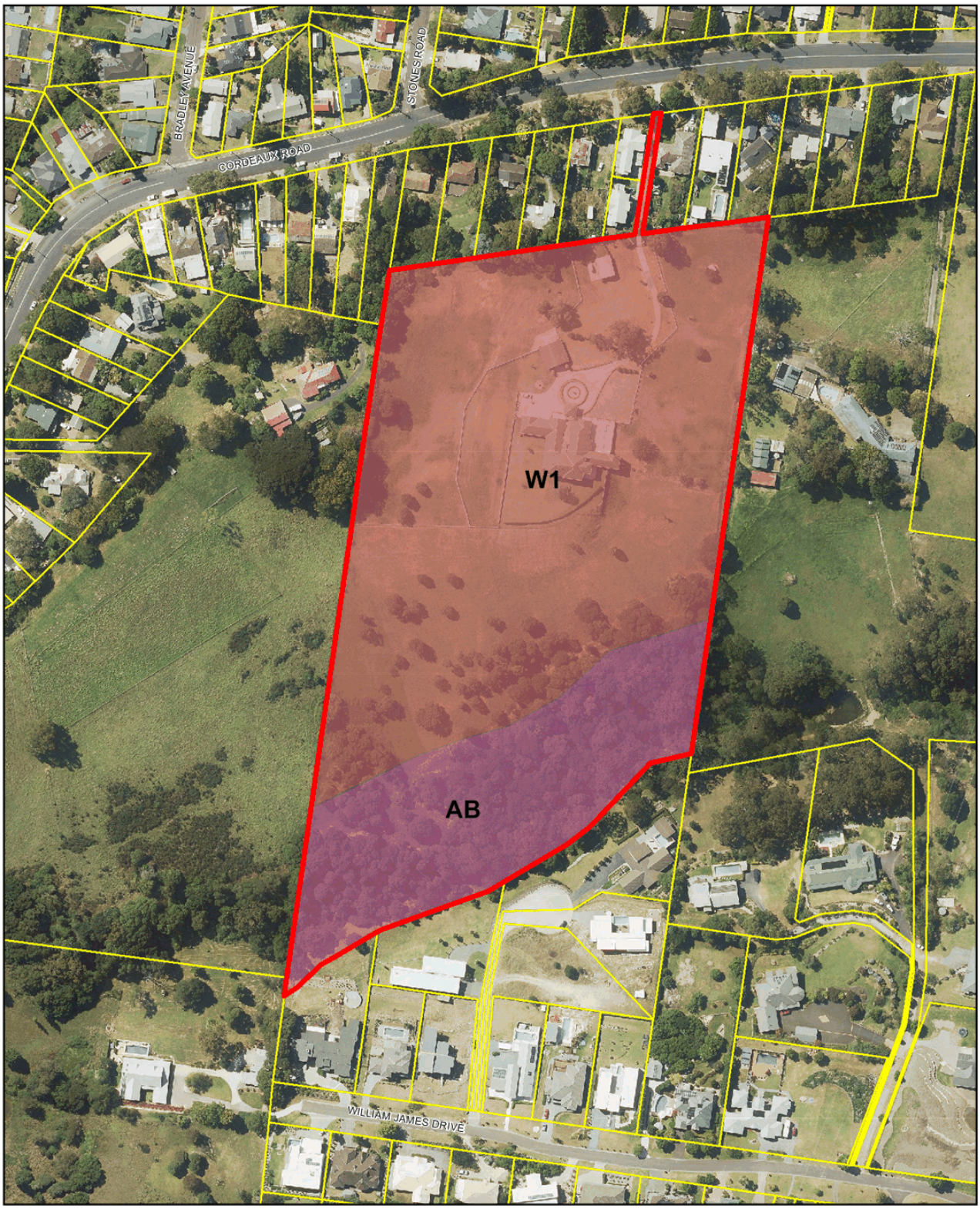
0 50
Meters

Scale 1:2500 @ A4

Map Identification number:
227 Cordeaux Rd_LEP2009.mxd


BRADLEY AVENUE
STONES ROAD
CORDEAUX ROAD
Bin Storage Area
Passing Bay
20m
2m
Proposed Shared Driveway (4.0m wide)
Turning Head 12m Radius
WILLIAM JAMES DRIVE
Legend
Indicative Street Planting
Site Boundary
Shared Access Lot
Indicative Building Envelope
Existing Building Footprint
Cadastre (DFSI-SS, 2017)
Asset Protection Zone (APZ)
50 m APZ
60 m APZ
Retained Vegetation
FIGURE 3-1
1:1,500 Scale at A3
Metres
0 10 20 30 40 50
Concept Subdivision Layout
MOUNT KEMBLA, NSW
Cardno
Map Produced by Cardno NSW/ACT Pty Ltd (WOL)
Date: 2018-02-06 | Project: 82017012-01
Coordinate System: GDA 1994 MGA Zone 56
Map: 82017012-01-GS-010_ConceptLayout.mxd 06
Aerial Imagery supplied by nearmap (April 2016)


BRADLEY AVENUE
STONES ROAD
CORDEAUX ROAD
E4
E2
WILLIAM JAMES DRIVE
wollongong
city of innovation
Proposed Zoning for
227 Cordeaux Rd
Mt Kembla
Subject_Sites
E2 Environmental Conservation
E4 Environmental Living
N
Projection: GDA 1994
MGA Zone 56
0
50
Meters
Scale 1:2500 @ A4
Map Identification number:
227 Cordeaux Rd_PP Zoning.mxd



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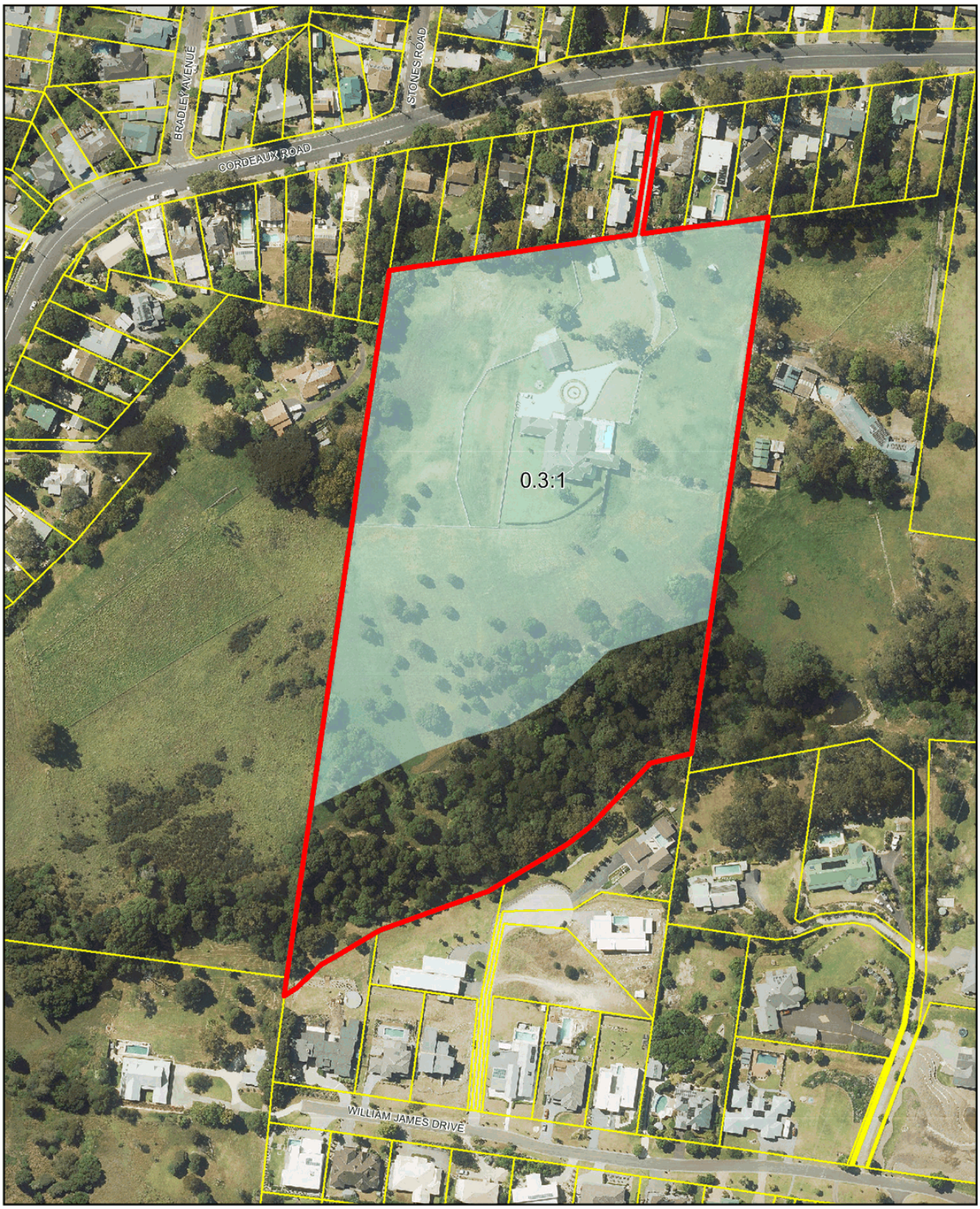
Proposed Minimum Lot Size for
227 Cordeaux Rd
Mt Kembla

Subject_Sites
AB 39.99ha
W1 4999sqm

N
Projection: GDA 1994
MGA Zone 56
0 50
Meters
Scale 1:2500 @ A4

Map Identification number:
227 Cordeaux Rd_PP MLS.mxd



wollongong
city of innovation

Proposed Floor Space Ratio for
227 Cordeaux Rd
Mt Kembla

Subject_Sites
0.3:1

N
Projection: GDA 1994
MGA Zone 56

0 50
Meters

Scale 1:2500 @ A4

Map Identification number:
227 Cordeaux Rd_LEP2009.mxd

ecoplanning
ecology | planning | offsets

Vegetation Management Plan – Riparian Corridor

Lot 100 // DP 1123517

227 Cordeaux Road, Mount Kembla, NSW 2526

Proposed residential subdivision

Prepared for Cardno Pty Ltd

5 September 2017

PROJECT NUMBER	2016-054		
PROJECT NAME	Vegetation Management Plan – Riparian Corridor		
PROJECT ADDRESS	Lot 100 // DP 1123517, Cordeaux Road, Mount Kembla, NSW, 2526		
PREPARED FOR	Cardno Pty Ltd		
AUTHOR/S	Thomas Hickman		
REVIEW	Bruce Mullins		
VERSION	**Version**	**Draft/Final**	**Date to client**
	1.0	Draft	25/07/17
		Final	5/09/2017

This report should be cited as: '*Ecoplanning (2017). Vegetation Management Plan – Riparian Corridor, Lot 100, DP 1123517, 227 Cordeaux Road, Mount Kembla. Prepared for Cardno Pty Ltd.*'

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Glossary and abbreviations

ABBR./TERM	DESCRIPTION
*	Denotes exotic species
APZ	Asset Protection Zone
DA	Development Application
DCP	Development Control Plan
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
ha	Hectares
IPA	Inner Protection Area
LCA	Local Control Authority
LGA	Local Government Area
TEC	Threatened ecological community, listed as vulnerable, endangered or critically endangered under either the TSC Act or EPBC Act
ToB	Top of Bank
TSC Act	NSW *Threatened Species Conservation Act 1995*
VMP	Vegetation Management Plan
VRZ	Vegetated Riparian Zone
WLEP	Wollongong Local Environmental Plan 2009
WM Act	NSW *Water Management Act 2000*
WoNS	Weeds of National Significance

Contents

Figures

Tables

1. Introduction

1.1 Description of project and purpose of Vegetation Management Plan

Ecoplanning were commissioned by Cardno Pty Ltd to prepare a Vegetation Management Plan (VMP) for the riparian corridor contained within Lot 100, DP 1123517, 227 Cordeaux Road, NSW, 2526 (**Figure 1.1**) on land that is currently zoned E3 – Environmental Management under the Wollongong Local Environmental Plan 2009 (WLEP). At present, the Lot (hereafter referred to as the 'study area') is proposed to be sub-divided into five (5) lots, including the existing residential property. This VMP relates to a Vegetated Riparian Zone (VRZ) of an unnamed 2nd order stream in the south of the study area (the 'subject site'). A majority of the subject site occurs on the northern bank of the watercourse. However, a small portion is also situated on the southern side. A 1st order stream flows in a northerly direction, and joins the 2nd order stream on the southern boundary of the subject site (**Figure 1.2**).

A review of aerial imagery from 1948/51, 1977, 2006, 2012 and 2014 reveals that the extent and density of vegetation in the subject site has varied over the years (**Appendix C**). The aerial imagery from 1948/51 shows the subject site to be mostly cleared, with a few patches of vegetation directly along the watercourse. However, since the early 2000's, there has been an increase in cover, particularly between the years of 2006 – 2012. The increase in vegetation cover in the subject site coincides with the revegetation of *Eucalyptus* spp. and *Acacia* spp. outside the northern boundary of the subject site. It is possible that revegetation has occurred in the subject site itself, although appears to be unlikely.

This VMP outlines management methods for the restoration and stabilisation of the riparian zone within the subject site with consideration of the recommendations outlined in Chapter E23 of the Wollongong Development Control Plan (DCP) 2009. A majority of the land intended for management retains a moderately intact native groundlayer with occasional midstorey and canopy species. Woody weeds, including *Lantana camara* (Lantana), *Solanum mauritianum* (Wild Tobacco) and *Senna pendula* var. *glabrata* occur in dense patches, in niches that native plant species would otherwise occupy. Therefore, primary removal of woody weeds will be the main management focus to achieve the VMP's primary objectives, including:

- Reduce the abundance and cover of all exotic species, particularly woody weeds, which are preventing the establishment and further succession of native plant species,
- Creating a revegetated riparian zone to buffer the watercourse from the impacts of the surrounding land use (e.g. nutrient enriched runoff). This will contribute to the health of the watercourse in the subject site and the overall catchment,
- Revegetating the subject site with a combination of native midstorey, overstorey and occasional grasses/groundcovers,
- Increasing the complexity of the habitat within the riparian zone for macroinvertebrates and terrestrial fauna,
- Implementing a 'top of catchment approach' by reducing the vegetative and propagule spread of exotic species further down the catchment.

Wollongong Local Government Area (LGA) requires the submission of a VMP with any Development Application (DA) lodged for any proposed development within 40 metres from the top of bank of any watercourse, lake or estuary in accordance with the Wollongong Development Control Plan (DCP) (2009). As indicated in **Figure 1.2**, the subject site incorporates additional areas outside of the minimum 20 m buffer from the 2nd order watercourse in the north of the site. This report includes a proposal for staging of works to guide the weed management, revegetation and general restoration of the subject site by a qualified bush regeneration company. This VMP is intended to be implemented over a five-year period.

Figure 1.1: The study area and VMP subject site, including the proposed lot layout and APZs.

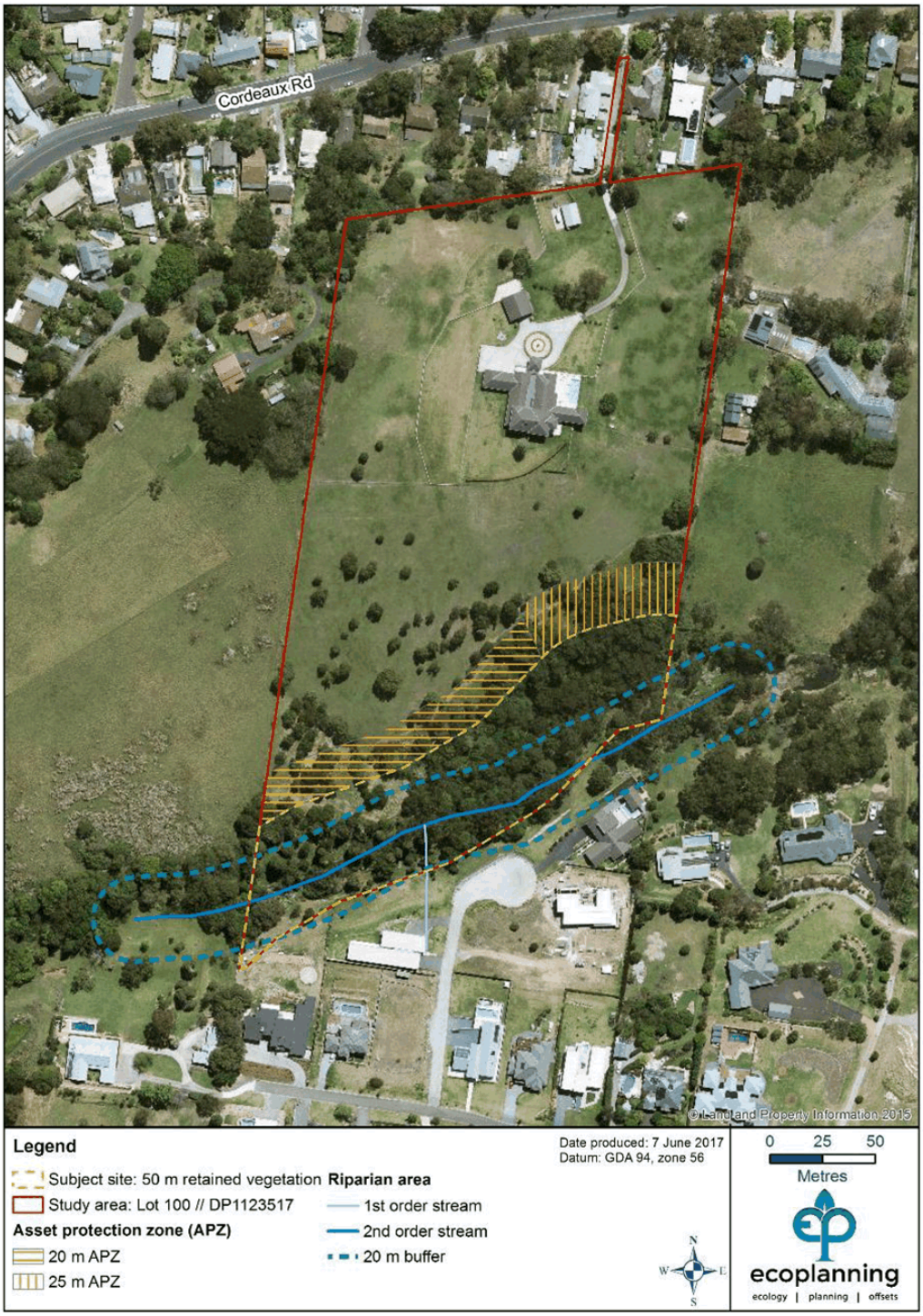

Figure 1.2: Strahler stream order and associated VRZ buffer.

1.2 Site description

The ***study area*** is situated in Wollongong LGA and includes all land contained within Lot 100, DP 1123517, 227 Cordeaux Road, Mount Kembla, NSW, 2526. The surrounding land is mostly zoned E4 – Environmental Living (WLEP 2009). The suburb of Mount Kembla is situated on the lower - mid slopes of the Illawarra Escarpment, with Mount Kembla situated approximately 1.5km to the south west of the study area. The northern portion of the study area consists of cleared land 'exotic grassland with scattered trees' and 'existing infrastructure'. Cleared areas of the site are regularly mown, including amongst the planted vegetation in the south of the study area. An unnamed 2nd order watercourse runs in a north easterly direction through the south of the study area, which subsequently joins American Creek, a 3rd order stream.

The VMP ***subject site*** includes all land 50 m south from the southern boundary of the Lot, which incorporates a 20 m buffer from the Top of Bank (ToB), with additional areas of vegetation in the north. The subject site retains connectivity with the large expanse of vegetation to the west of the site, as well as the vegetation to the east of the subject site (**Figure 1.3**). The vegetation to the east mostly consists of vegetation associated with American Creek and Brandy and Water Creek, and is substantially more fragmented than the vegetation to the west. The subject site consists of a mixture of regenerating natives and exotic species, with a reasonably intact native groundlayer. As this site was once extensively cleared, there are few mature – over mature canopy species, however a few individuals remain, including *Eucalyptus saligna* x *botryoides* (Wollongong Woollybutt) and *Eucalyptus quadrangulata* (White-topped Box) (**Figure 1.4**). Revegetation of native midstorey and canopy species is occurring through the site, including *Acacia melanoxylon* (Blackwood), *Alphitonia excelsa* (Red Ash), *Backhousia myrtifolia* (Grey Myrtle), *Rhodamnia rubescens* (Scrub Turpentine), *Clerodendrum tomentosum* (Hairy Clerodendrum) and *Melicope micrococca* (Hairy-leaved Doughwood).

The composition of native flora in the subject site reflects the vegetation community, Moist Box-Red Gum Foothills Forest (MU13) (NPWS 2002), which occurs through the full extent of the subject site (Ecoplanning 2016). The vegetation to the north of the subject site consists of plantings, including *A. melanoxylon, Acacia maidenii* (Maiden's Wattle)*, Acacia mearnsii* (Black Wattle) and *Acmena smithii* (Lilly Pilly). Due to the mapping of the subject site as Moist Box-Red Gum Foothills Forest (MU13), the recommended species for planting (**Appendix B**) mostly consist of species representative of this community. Further discussion of the vegetation classification is included in **Section 2.2.1**.

Asset Protection Zone

An asset protection zone (APZ) will be situated between the northern boundary of the VMP subject site and the proposed residential properties in the north (**Figure 1.1**). The western portion of the APZ will be 20 m wide, whereas the eastern portion will be 25 m. The difference in APZ widths reflects two slope classes; '15-18 degrees downslope' for the eastern third of the corridor, and '10-15 degrees downslope' for the western two thirds of the corridor. Slight modifications to the vegetation mapped as Moist Box-Red Gum Foothills Forest (MU13) within the riparian corridor will be necessary to decrease the width of the corridor to a maximum of 50 m, whilst complying with Inner Protection Area (IPA) standards (**Figure 1.5**). This will reduce the bushfire risk for the proposed lots to a 'low hazard', whilst also accommodating the 40 m riparian corridor required under the NSW *Water Management Act 2000* (WM Act).

The proposed APZ incorporates some of the planted vegetation to the north of the VMP subject site, which will be managed within the APZ. The APZ containing the Moist Box-Red Gum Foothills Forest (MU13) and 'planted native vegetation' should comply with the following IPA requirements:

- Trees are to be thinned to prevent a continuous canopy by achieving gaps between crowns and to the roofline of a dwelling of 2 to 5 m minimum. A clump (e.g. two or three smaller trees) may be retained as 'one crown'. Preference for removal is to be given to trees with lower SULE rating and with least ecological benefit;
- Understorey shrubs and saplings should not be retained within the APZ;
- Ground covers are to be regularly slashed or mowed, and ground fuels are to be reduced by removing all dead material and removing leaf litter and other fine fuels.

The planted native vegetation to the north of the VMP subject site contains few native midstorey species and mostly consists of exotic grasses and herbaceous weeds and is currently mown. Given the cover of the plantings is sparse and the understorey is managed, it is likely that a majority of the vegetation currently meets IPA requirements. Future management of the APZ area mapped as 'planted native vegetation' should be achieved by regular mowing, with the aim of preventing the propagule spread of herbaceous weeds and grasses into the subject site. The Moist Box-Red Gum Foothills Forest within the APZ should be managed to reduce the cover and abundance of exotic species, whilst meeting the requirements of the IPA. Revegetation will not be conducted in this area, and vegetation removal should be in accordance with the above requirements.

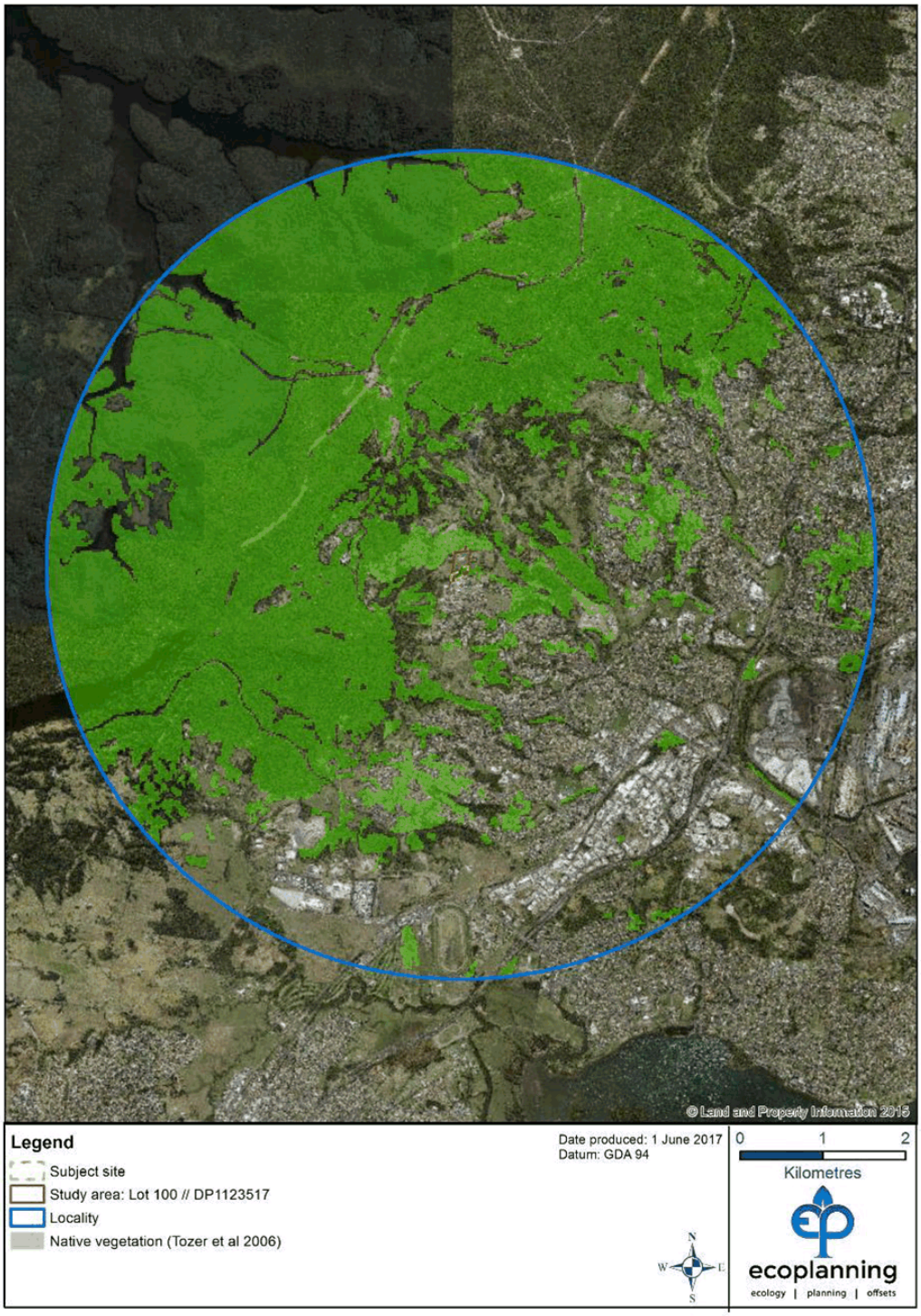

Figure 1.3: Locality of the VMP subject site and connectivity to surrounding native vegetation (Tozer et al. 2010).

Figure 1.4: Hollow bearing mature – over mature *E. saligna* x *botryoides* in the VMP subject site.

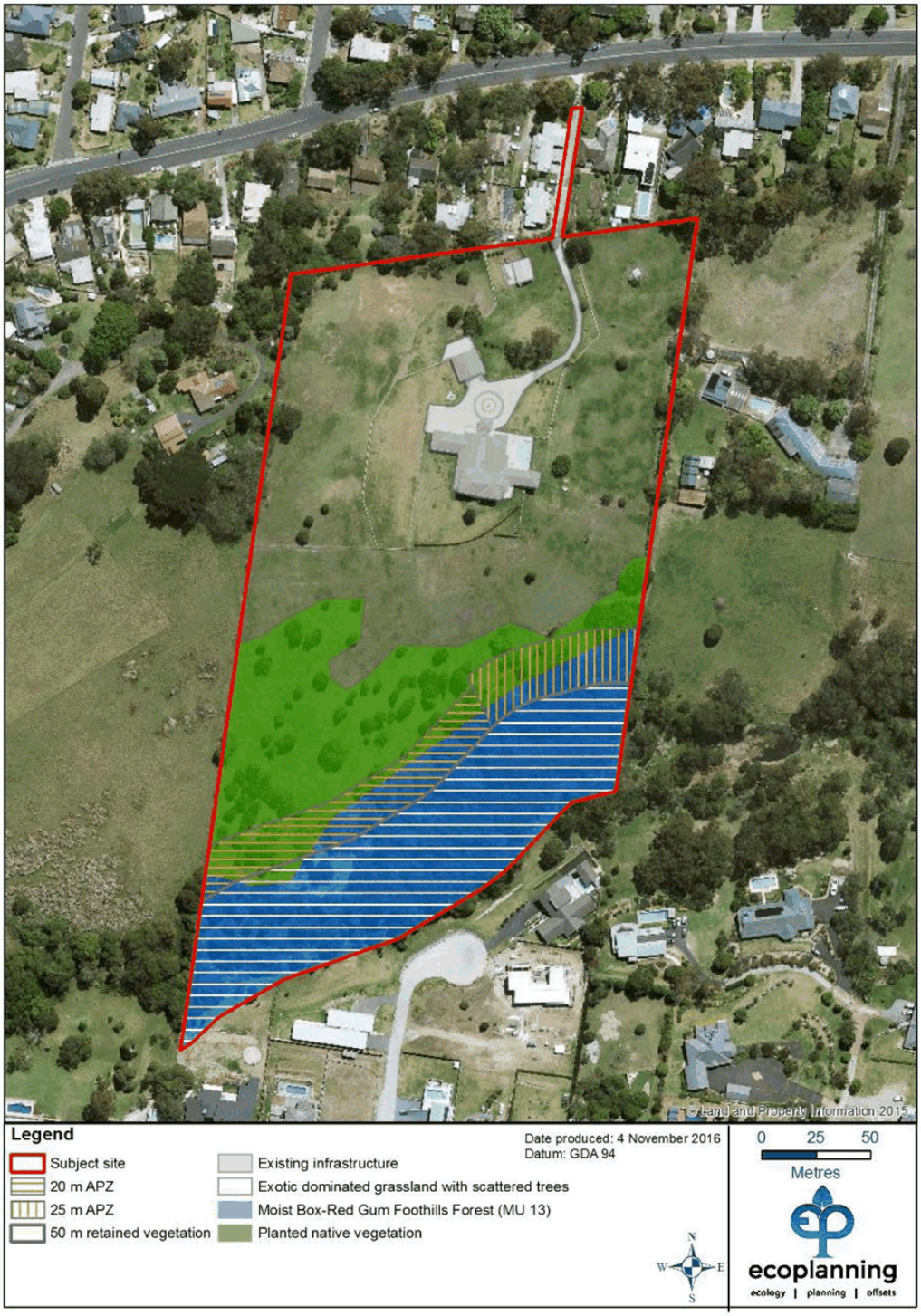

Figure 1.5: Retained vegetation and MU13/'planted native vegetation' within the APZ.

2. Site assessment

2.1 Methods

A field survey was undertaken on 26 May 2017 by Thomas Hickman (Ecologist, Ecoplanning). The study area and subject site were traversed by foot on either side of the unnamed creek. The weather conditions on the day were cool – warm with clear skies (**Table 2.1**).

Table 2.1. Daily weather observation at Albion Park (Wollongong Airport)– station 068241 (15 km north-east of the development site)

Date	Temp (°C)		Rainfall (mm)[1]	Max wind	
	Min	Max		Direction	Speed (km/h)
26/05	5.7°C	20.8°C	0mm[1]	SSE	24

The field assessment aimed to determine the overall resilience of the subject site, thus its capacity to respond to regeneration works. Appropriate management methods were considered, with the aim of identifying areas of the site requiring revegetation, as opposed to assisted natural regeneration. The site was surveyed to determine the problematic exotic species onsite, and aimed to identify all noxious species and Weeds of National Significance (WoNS). During the survey, appropriate weed control techniques were considered, for the dominant exotic species onsite. All vegetation patches were assessed to determine their location and extent, and to confirm their structure and floristics.

2.2 Results

2.2.1 Plant communities

Regional vegetation mapping (NPWS 2002) of the study area was reviewed, with Moist Box-Red Gum Foothills Forest (MU13) being the only mapped native vegetation type in the study area (**Figure 2.1**). Additional vegetation was mapped by NPWS (2003) in the study area, including *Acacia* Scrub (MU56a), Cleared Land (MU56d) and Weeds and Exotics (MU56c). Regional vegetation mapping of the study area by Tozer et al. (2010) indicates three vegetation communities within the study area (**Figure 2.2**), including:

- South Coast Grassy Woodland (p.34)
- Subtropical Dry Rainforest (p.111)
- Warm Temperate Layered Forest (p.110)

Field assessment confirmed the presence of Moist Box-Red Gum Foothills Forest in the VMP subject site (MU13) (Ecoplanning 2016) (**Figure 2.3**). No Threatened Ecological Communities (TECs) listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or *Threatened Species Conservation Act 1995* (TSC Act) were identified in the subject site or study area during field assessment.

2.2.2 Moist Box-Red Gum Foothills Forest (MU13)

As a result of past logging and underscrubbing only a small portion of the original suite of native species representative of Moist Box-Red Gum Foothills Forest (MU13) are present in the subject site. This community is the only mapped native vegetation community in the subject site, and occurs as a moderately intact area of vegetation in a stage of regrowth. The dominant canopy species include *E. quadrangulata* and *E. saligna* x *botryoides*, of which few mature – over mature species are present. Some sections of the site contain a moderately dense native midstorey, including *Alphitonia excelsa*, *Backhousia myrtifolia*, *Clerodendrum tomentosum, Melaleuca styphelioides* (Prickly-leaved Tea Tree), *Melicope micrococca*, *Pittosporum multiflorum* (Orange Thorn) and *Rhodamnia rubescens* (Scrub Turpentine). Sections of the site retain a high species richness and cover of native grasses and groundcovers, including *Carex appressa* (Tall Sedge), *Tylophora barbata* (Bearded Tylophora), *Stellaria flaccida* (Forest Starwort), *Gymnostachys arvensis* (Settlers Twine), *Dichondra repens* (Kidney Weed), *Veronica plebeia* (Trailing Speedwell), *Microlaena stipoides* var. *stipoides* (Weeping Grass) and *Pellaea falcata* (Sickle Fern).

Exotic species have become established across approximately 80 – 90% of the subject site, particularly in the midstorey, where woody weeds, such as *Lantana camara, Ligustrum lucidum* (Large-leaved Privet), *Solanum mauritianum* and *Senna pendula* var. *glabrata* have become established. *Lantana camara* is the most abundant weed issue on site and will require a substantial amount of primary work (**Figure 2.4**). Groundlayer exotic species include *Ageratina adenophora* (Crofton Weed), *Cirsium vulgare* (Spear Thistle), *Senecio madagascariensis* (Fireweed), *Sida rhombifolia* (Paddy's Lucerne), *Axonopus fissifolius* (Carpet Grass), *Solanum pseudocapsicum* (Jerusalem Cherry) and *Ehrharta erecta* (Panic Veldt Grass) (**Figure 2.5**). The vegetation has a reasonable resilience, with a good potential to recover with the removal of exotic species, such as *Lantana camara* and *Ageratina adenophora*.

2.2.3 Site resilience

Field assessment determined that a large portion of the VMP subject site has a moderate – high potential for natural regeneration to occur. This is mostly relevant to the groundlayer, which is well established through the site, particularly where *Lantana camara* is low (**Figure 2.6**). It is anticipated that native groundcovers will rapidly populate cleared areas following the primary removal of woody and herbaceous weeds. In degraded areas, natural regeneration may be dependent on the deposition of seed from native patches surrounding the area, as opposed to an established native seedbank. The overall aim should be to improve and consolidate resilient areas of native groundlayer species through the site.

Revegetation of midstorey and canopy species will be necessary. This can occur at relatively low densities given that establishing canopy species and areas of dense midstorey are already present (see **Section 3.4**). It may be necessary to install native grasses and groundcovers in areas that show little potential for natural regeneration following primary and secondary works. Ample time should be allowed to determine the ability for areas of the site to regenerate naturally, prior to resorting to revegetation. Revegetation is scheduled mid-way through the second year of the contract, which will allow sufficient time for natural recruitment to occur following the completion of primary woody and herbaceous works at the end of year one.

Figure 2.1: Regional vegetation mapping of the VMP subject site and study area (NPWS 2002).

Figure 2.2: Regional vegetation mapping of the VMP subject site and study area (Tozer et al. 2010).

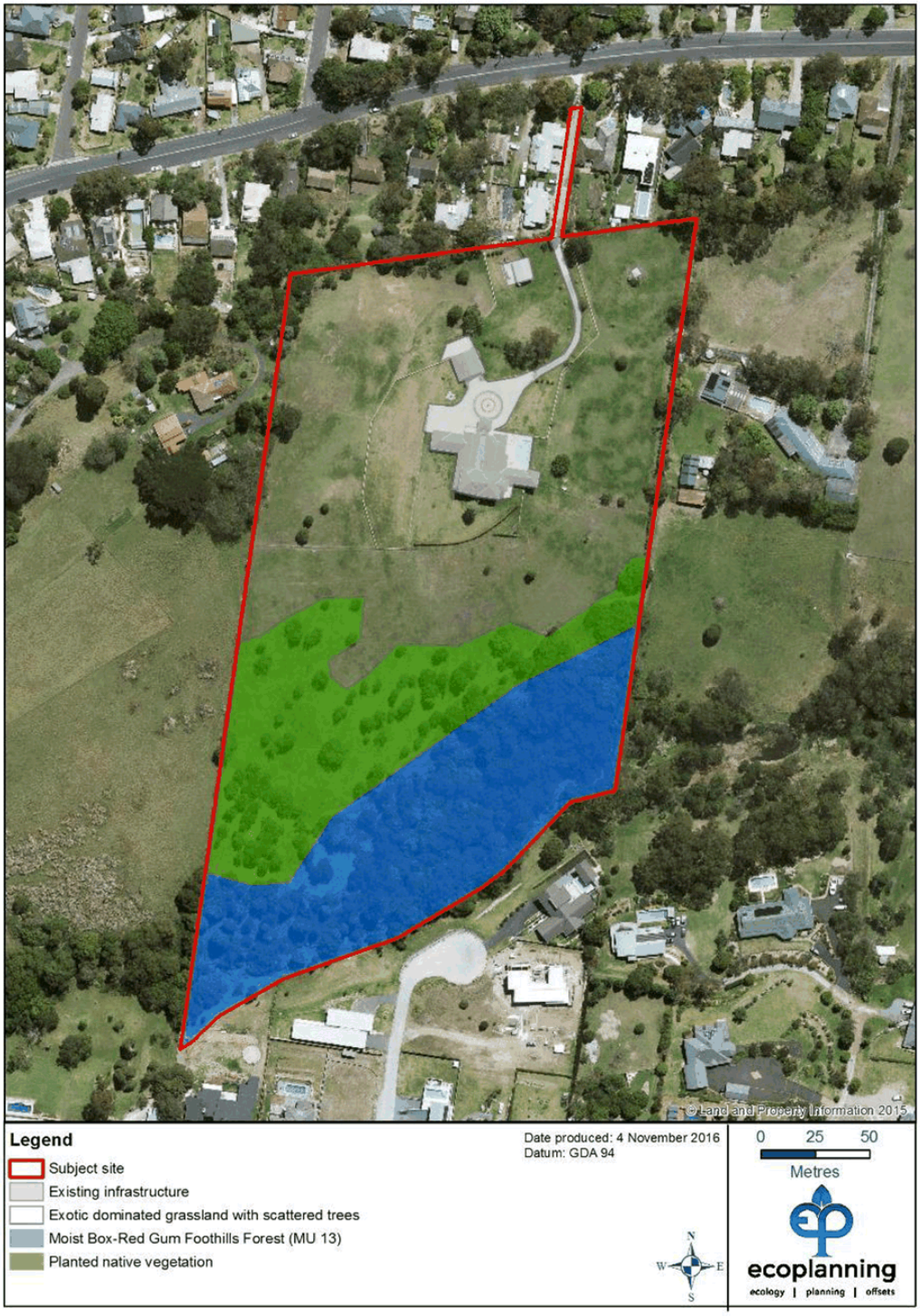

Figure 2.3: Vegetation within the VMP subject site Ecoplanning (2016).

Figure 2.4: Dense patch of *Lantana camara** in the VMP subject site.

Figure 2.5: Patch of *Ageratina adenophora** in the west of the VMP subject site.

Figure 2.6: Area with intact native groundcover and relatively low cover/abundance of woody and herbaceous weeds.

Flora species

A total of 79 flora species were identified within the subject site, of which 32 are exotic species (**Appendix A**). Three weeds listed under the NSW *Noxious Weeds Act 1993* in accordance with the Wollongong Local Control Authority (LCA) are known within the subject site and study area (**Table 2.2**). All three of these species are WoNS.

Table 2.2. Noxious weeds under the Wollongong LCA and Weeds of National Significance (WoNS).

Common name	Scientific name	WONS	Class	Requirement
Asparagus Fern	*Asparagus aethiopicus*	Y	4	**Locally controlled weed** The growth of the plants must be managed in a manner that continuously inhibits the ability of the plant to spread and the plants must not be sold, propagated or knowingly distributed.
Lantana	*Lantana camara*	Y	4	
Fireweed	*Senecio madagascariensis*	Y	4	

No threatened flora species listed under the TSC Act or EPBC Act were recorded in the study area or subject site.

3. VMP weed management and revegetation

Vegetation management works outlined below should be implemented for the subject site. Weed management should begin upon the initiation of works proposed under the DA. A suitably qualified and experienced bush regeneration contractor as per **Section 4.3** must be engaged to carry out vegetation management works.

3.1 Preliminary works

Seed collection

Seed collection will be required to ensure indigenous species are available for revegetation works; species identified for revegetation are outlined in **Appendix B**. All plantings should be of local provenance, collected from adjacent patches of vegetation. However, nurseries that supply indigenous seedling stock, (not horticultural varieties), may also be used to supplement the plantings.

Seed collection zones can extend within a radius of 3 km for groundcover, shrubs and trees and up to 10 km for grasses. The collection site should reflect the natural conditions that exist for the area being regenerated.

Record keeping of seed collection and planting locations is to be as per the Flora Bank guidelines (Mortlock 2000), the bush regeneration contractor is responsible for recording this information. A Section 132C licence under the NSW *National Parks and Wildlife Act 1974* will be required to undertake seed collection works.

Fencing

Cyclone fencing currently surrounds a substantial portion of the VMP subject sites perimeter. All fencing should be regularly maintained and monitored for damage and entry points of introduced herbivores (e.g. rabbits and deer). Field assessment identified several gaps along the bottom of the fence where rabbits and/or deer could access the site (**Figure 3.1** and **Figure** 3.2). Grazing by introduced herbivores will prevent the establishment of native species and contribute to the further degradation of the site.

Signage

Signage in accordance with WCC standardised signs for conservation areas will be installed at each lot.

3.2 Weed management techniques

Weed management will be carried out using primary and secondary weed control followed by ongoing maintenance. Weed control will include mechanical removal techniques, herbicide application and natural shading techniques. Disturbance of the soil during the weed management process should be minimised at all times (Buchanan 2000, Bradley 2002). Weed control objectives and treatment techniques are outlined below (**Appendix C**) in accordance with weed type.

Primary Weed Control

Primary weed control is the initial removal of weed species. Mechanical removal techniques relevant to the weed being removed (Buchanan 2000; Bradley 2002; DPI 2015) should be used for all woody weeds and herbaceous plants. Herbicide application, such as backpack spraying should be avoided where off target loss of native species is likely to occur.

Secondary Weed Control

Secondary weed control involves follow-up weed control to remove seedlings that have emerged after primary control and treatment of any existing plants that reshoot. Any new weed infestation areas identified must also be treated.

Maintenance

Maintenance is the long-term management of a site to prevent weeds from becoming re-established after primary and secondary work. Substantial effort should be focussed on reducing the weed seed bank, eradicating problematic weeds and supporting the growth of native vegetation. Areas of high resilience should be the focus of intensive maintenance works, which will include fine hand weeding. A structured maintenance regime following primary and secondary work will reduce the time taken for the site to reach a reasonable level of stability.

Weed Disposal

All seeding herbaceous/grass material and tubers should be bagged, removed from site and disposed of at an appropriate green waste facility. Woody weeds, such as *Lantana. camara*, *Solanum mauritianum*, *Senna pendula* var. *glabrata* and *Olea europaea* subsp. *cuspidata* can be neatly piled in small quantities as fauna habitat. However, some woody weed material should be removed offsite, given the relatively small size of the site, its potential to flood and the large volume of *L. camara* in some areas of the site.

3.3 Vegetation Management Zones

The VMP subject site has been classified as one management zone, due to its small size and the homogeneity of weed species and management actions across the site (**Figure 3.3** and **Appendix C**).

3.3.1 Management Zone 1 – Regeneration and supplementary revegetation

This zone encompasses the full extent of the VMP subject site, which includes all vegetation 50 north of the southern boundary of Lot 100, DP 1123517 (**Figure 3.3**), and is partly defined by a length of cyclone fencing. Fencing also defines the east and west of the subject site. As previously mentioned, the dominant weed issues in the subject site are woody weeds, including *Lantana camara*, *Ligustrum lucidum, Olea europaea* subsp. *cuspidata* and *Senna pendula* var. *glabrata*. *Lantana camara* forms dense thickets in some sections of the site, where it has become established in the midstorey, and is currently inhibiting the germination and establishment of native species. Treatment of *Lantana camara* will be achieved by cut and painting the stems at ground level with neat Roundup Biactive®, and skirting all biomass from the midstorey. Smaller individuals should be hand removed, only if minimal soil disturbance will occur. Most of other woody weeds in the subject site, such as *Solanum mauritianum* and *Senna pendula* var. *glabrata* are present in low abundance and cover, thus little effort will be required to eradicate them from the site.

Herbaceous weeds and grasses occur through the site in moderate densities, including *Cirsium vulgare* (Spear Thistle), *Senecio madagascariensis, Conyza* sp., *Ehrharta erecta*, *Solanum pseudocapsicum, Sida rhombifolia, Verbena bonariensis* (Purpletop), *Ageratina adenophora*

and *Cenchrus clandestinus* (Kikuyu Grass). In most instances, these species occur at manageable levels. However, this is not the case for *Ageratina adenophora*, which occurs extensively through the site. Substantial effort should be focussed on the removal of *Ageratina adenophora*, which will be removed using a combination of hand weeding and cut and painting with neat Roundup Biactive®. The removal of herbaceous weeds should be conducted prior to seeding where possible, with all material bagged and removed from site. Spraying of herbaceous weeds and grasses should be avoided, due to the high proportion of native grasses, groundcovers, sedges and ferns in the groundlayer across a majority of the site. However, it may be possible to carefully spray grasses, such as *Cynodon dactylon* (Couch), where few native species occur, such as along the northern perimeter of the subject site.

Exotic vines and scramblers, including *Delairea odorata* (Cape Ivy) and *Araujia* sericifera (Moth Vine) occur sporadically through the subject site. No established and seeding *Araujia sericifera* were noted during field survey and *Delairea odorata* appears to be a relatively minor issue onsite. Nevertheless, regeneration work should focus on eradicating these species prior to their further establishment.

Figure 3.1: Rabbit diggings under the subject sites northern fence line.

Figure 3.2: Deer scats in the subject site.

Figure 3.3: Management zone within the VMP subject site.

3.4 Revegetation

Revegetation of native midstorey and canopy species will be necessary in the subject site once ample time has been allowed to determine site resilience. A small amount of grasses and groundcovers should also be installed, depending on the response of restoration work. The site has not been divided into revegetation zone, given its small size and the relative homogeneity of resilience across the site.

Staging and logic

Native canopy and midstorey species will be planted on the subject site following the completion of primary works, whilst allowing ample time to determine whether natural recruitment is likely. All primary work on woody weeds, including *Lantana camara* will have been completed by the end of the first year of the contract. Revegetation will be conducted approximately 6 months – one year after the completion of primary woody weed works. This will allow enough time to determine where revegetation will need to occur at lower or higher densities, given the recruitment of native midstorey and canopy species. Supplementary revegetation should be conducted if more than 10% attenuation occurs and will be conducted one year after the initial planting.

Planting densities and species

Plantings will be installed at a density resembling the vegetation community Moist Box-Red Gum Foothills Forest (MU13) in an 'unmodified' condition. Planting densities should achieve quick vegetative cover and root mass to maximise bed and bank stability along the subject watercourse. The native species used for revegetation should be consistent with the planting palette provided (**Appendix B**), with the aim of reconstructing the floristics of the site to be representative of Moist Box-Red Gum Foothills Forest (MU13) (see NSW NPWS 2002 for list of representative species). Planting densities have been determined based on site condition, and guided by the Wollongong LGA DCP (Chapter E23), as follows:

- 1 shrub species per 10 m^2
- 1 canopy per 20 m^2
- 1 groundcover (grass, fern, forb or sedge) at a density of 1 per 5 m^2

The planting densities above are based on site resilience and are an estimate of plants required to achieve a cover representative of Moist Box-Red Gum Foothills Forest (MU13). Field assessment determined the subject site to have a moderate resilience, therefore, a reasonable capacity for native species to recruit following primary works. Should native midstorey and canopy species recruit extensively through the site the densities listed above can be altered to reflect a desirable number of plants for revegetation.

Table 3.1. Planting density table for revegetation works.

Zone	Area (ha)	No. of plants			Zone total
		G	S	C	
1	1.38	2,760	1,380	690	4,830

G = groundcover, S = shrubs and C= canopy.

Equipment, installation and timing

Plantings should be planned for late winter leading up to spring when regular rainfall is naturally occurring and growth conditions are ideal. Planting of tube-stock (tree and shrub species) and Hiko or Viro cells (grasses and other groundcover species) will be favoured over broad scale seed application, such as direct seeding or brush matting.

A water retaining and fertilising product (e.g. Terraform™) should be applied to each hole, to assist in the establishment of the plants. Each plant should be sufficiently watered on the same day as installation and regular watering should continue *in lieu* of rainfall for a period of 6 weeks, or until plantings have taken.

3.5 Concurrent Works

Vegetation management works will be carried out concurrently with civil construction works, therefore planning between the bush regeneration contractor and civil works supervisor must be undertaken.

The civil works team will install environmental management controls across the site including exclusion zone fencing and erosion and sediment control. It is the responsibility of the bush regeneration contractor not to damage these controls and if any damage is observed or inadvertently caused it must be notified to the civil works supervisor immediately.

3.6 Maintenance

The maintenance phase must continue for 4 years, following an initial year of primary and secondary works. Regular inspections of site condition will be conducted, including general site monitoring for potential new infestation areas and subsequent weed control of any identified weed species. Inspections and site monitoring must occur every 3 months during winter and autumn and every month during summer and spring. This schedule could be revised depending on performance criteria recorded.

Weed maintenance works will include:

- Removal of all exotic species prior to establishment and seeding.

Re-vegetation maintenance works will include:

- Replacement of poorly growing or diseased individuals consistent with the prescribed planting
- Management of insect damage, if necessary
- Watering during dry periods
- Augmenting past planting areas where attenuation has occurred.

3.7 Cost of implementation

The costing for the VMP has been calculated over a five-year period and is estimated at a total of $101,288 (**Table 3.2**), including the cost of monthly and annual reporting. This figure reflects a first year cost of $29,000, second year costs of $26,475, third year costs of $15,613, fourth year costs of $9,600 and fifth year costs of $9,600. Monthly and annual reporting costs over the five year period add up to a total of $11,000. The costs have been calculated based on the employment of trained bush regenerators at a rate of $400 pp/day ($50 pp/hr for an 8 hour working day), which covers crew and supervisor wages, equipment, herbicides, and all other associated business costs.

The costing indicates how many crew members are required to attend monthly visits over the five year contract, based on the size of the site, extent of weed infestation and expected timeframes for the completion of primary, secondary works and initiation of maintenance works. The costs are indicative of commercial bush regeneration charge out rates, and some variation

is excepted depending on the bush regeneration company used and their associated charge out rates.

Plantings

The cost of revegetation is a reasonable onsite expense, which is incurred in the second year of the contract. Additional plantings may be required to augment previous plantings if some are lost to natural attenuation. The cost of revegetation was based on $2.50 per plant, including purchasing and installation costs (see **Section 3.7b**). Supplementary plantings have been calculated based on a 10% attenuation rate from original installation numbers.

Table 3.2: Cost of VMP implementation over the five year contract period.

Timing	Task	Cost
Year 1	Primary and secondary weed control based on the cost of employing a team of 5 bush regenerators at $400 ($50 per hour for 8 hours) pp/day to attend site monthly.	$24,00
Initiation of contact	Repair existing fencing and install where not present along the perimeter of the VMP subject site. Fencing should inhibit the access of deer and rabbit into the site, whilst considering the importance of the riparian corridor for dispersing native fauna, particularly mammals.	$5,000
	Year 1 total	***$29,000***
Year 2	Maintenance weed control throughout based on the cost of employing a team of 3 bush regenerators at $400 ($50 per hour for 8 hours) pp/day monthly.	$14,400
Mid-way through year 2	Revegetation of the site with 4,830 plants (see **Table 3.2**) at $2.50 per plant.	$12,075
	Year 2 total	***$26,475***
Year 3	Maintenance weed control based on the cost of employing a team of 3 bush regenerators at $400 pp/day on a monthly basis.	$14,400
Mid-way through year 2	Revegetation of the site based on a ~10% attenuation of the initial plantings (~485 plants) at $2.50 per plant.	$1,213
	Year 3 total	***$15,613***
Year 4	Maintenance weed control based on the cost of employing a team of 2 bush regenerators at $400 pp/day on a monthly basis.	$9,600
	Year 4 total	***$9,600***
Year 5	Final year of maintenance weed control based on the cost of employing a team of 2 bush regenerators at $400 pp/day on a monthly basis.	$9,600
	Year 5 total	***$9,600***
Monthly	Cost of monthly reporting over the 5 year contract period. Report should consist of a one - two page report detailing the works conducting onsite ($100 per month).	6,000
Annually	Annual report detailing all works conducted onsite, weed treatment methods, planting success and failures etc. (1,000 annually)	5,000
	Reporting costs total	***$11,000***
Grand Total		***$101, 288***

4. Performance criteria and monitoring

4.1 Performance criteria

The progress and compliance with the VMP will be monitored and reviewed annually. This process will involve the bush regeneration contractor and land manager. The performance criteria listed in **Table 4.1** below are considered to be best practice and are not linked with any specific legislation. The bush regeneration contractor, in consultation with Wollongong City Council can adapt these criteria as required in response to the success of restoration works. Based on the success of the management works, further performance criteria may need to be developed for the maintenance phase.

Table 4.1. Revegetation performance monitoring criteria.

Treatment Zones	Year 1	Year 2	Year 3	Year 4	Year 5
All Zones	Commencement of all tasks outlined in the VMP or evidence of planning for their implementation.				
	A demonstrated increase in native cover and diversity and a demonstrated decrease in exotic species cover and diversity by the end of the 3rd year.				
	A minimum of 90% survival rate of all revegetation.				
	A visible improvement of soil stability along the riparian zone.				
	A 60% reduction in exotic vine cover.	An 80-95% reduction in exotic vine cover.	Exotic vines maintained at <5% cover.	Exotic vines maintained at <5% cover.	No exotic vines >5 cm in length with low abundance and cover (<5%) throughout the site.
	A 50% reduction in herbaceous weeds and exotic grass cover.	A 50-70% reduction in herbaceous weeds and exotic grass cover.	A 70-90% reduction in herbaceous weeds and exotic grass cover.	Herbaceous weeds and exotic grasses maintained at <5% cover.	Herbaceous weeds and exotic grasses maintained at <5% cover.
	A 95% reduction in woody weed cover.	Woody weeds retained at low levels (<5% cover).	Woody weeds retained at low levels (<5% cover).	Woody weeds retained at low levels (<5% cover).	No woody weeds >10 cm in height remaining, with low cover (<5%) and abundance throughout the site.

4.2 Monitoring reports

The bush regeneration contractor and the land manager will monitor the vegetation for changes over time. The objective of the monitoring and reporting program is to record changes to the vegetation as a result of vegetation management works. Monitoring works will require liaison with the land manager, the bush regeneration contractor and Wollongong Council.

Monthly monitoring and reporting must be documented and compiled into an annual report to determine the effectiveness of the works undertaken. Site conditions should be recorded on the work plan template at the beginning and end of on-ground works. This data should be included in the annual report. Monitoring photo points should be established at 3 permanent reference points.

An example report is detailed in **Table 4.2**, the report should include:

- Works carried out, including weed species targeted and their location
- An approximation of the time spent on each task
- Any observations, such as the occurrence of new weed species
- Rates of regeneration of native species
- A description of any problems encountered and how they were overcome
- A summary of how the site-specific objectives have been met (or not)
- Herbicide and other chemicals used, including quantity, dilution rate and other relevant information
- Weed control mechanisms used during the period
- Climatic conditions which may have influenced weed germination and growth
- Performance criteria and success; and
- If required, maps of weed distribution and density.

4.3 Bush regeneration contractors

Suitably qualified and experienced bush regeneration contractors that are members of the Australian Association of Bush Regenerators or fulfil the membership criteria must undertake all vegetation management works. In addition to this, team leaders should hold a Certificate III in Conservation & Land Management or possess equivalent field experience and certification. The contractor should carry out best practice bush regeneration techniques as described by Buchanan (2009).

Table 4.2. Example monitoring report template.

Date			
Name of Contractor:			
Hours worked on site since last monitoring report:			
Site Condition:	Zone		
	Weed cover %		
	Seedling survival %		
	Planting numbers		
	Herbicide used (in Litres)		
	Other		
Describe relevant weed management techniques:			
Describe problems; e.g. weed invasions, damage to planted material, etc.:			
Photographic evidence:			
Planned work before next monitoring report:			

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Appendix A: Flora inventory

Family name	Scientific name	Common name	Native/Exotic
Apiaceae	*Centella asiatica*	Indian Pennywort	Native
Apocynaceae	*Araujia sericifera*	Moth Vine	Exotic
Apocynaceae	*Gomphocarpus fruticosus*	Narrow-leafed Cotton Bush	Exotic
Apocynaceae	*Marsdenia* sp.		Native
Apocynaceae	*Tylophora barbata*	Bearded Tylophora	Native
Araceae	*Gymnostachys anceps*	Settler's Twine	Native
Asparagaceae	*Asparagus aethiopicus*	Asparagus Fern	Exotic
Asparagaceae	*Eustrephus latifolius*	Wombat Berry	Native
Asteraceae	*Ageratina adenophora*	Mist Flower	Exotic
Asteraceae	*Cirsium vulgare*	Spear Thistle	Exotic
Asteraceae	*Conyza* sp.	Fleabane	Exotic
Asteraceae	*Delairea odorata*	Cape Ivy	Exotic
Asteraceae	*Hypochaeris radicata*	Catsear	Exotic
Asteraceae	*Senecio linearifolius*	Fireweed Groundsel	Native
Asteraceae	*Senecio madagascariensis*	Fireweed	Exotic
Bignoniaceae	*Pandorea pandorana*	Wonga Wonga Vine	Native
Caesalpiniaceous	*Senna pendula* var. *glabrata*	Cassia	Exotic
Cannabaceae	*Celtis* sp.		Exotic
Caryophyllaceae	*Cerastium glomeratum*	Mouse-ear Chickweed	Exotic
Caryophyllaceae	*Stellaria flaccida*	Forest Starwort	Native
Commelinaceae	*Commelina cyanea*		Native
Convolvulaceae	*Dichondra repens*	Kidney Weed	Native
Cyperaceae	*Carex appressa*	Tall Sedge	Native
Fabaceae	*Acacia maidenii*	Maiden's Wattle	Native
Fabaceae	*Acacia mearnsii*	Black Wattle	Native
Fabaceae	*Acacia melanoxylon*	Blackwood	Native
Fabaceae	*Glycine clandestina*		Native
Fabaceae	*Indigofera australis*	Australian indigo	Native
Fabaceae	*Trifolium repens*	White Clover	Exotic
Fabaceae	*Vicia* sp.	Vetch	Exotic
Geraniaceae	*Geranium homeanum*		Native
Juncaceae	*Juncus* sp.		Native
Lamiaceae	*Clerodendrum tomentosum*	Hairy Clerodendrum	Native
Liliaceae	*Lilium formosanum*	Formosa Lily	Exotic
Malvaceae	*Hibiscus heterophyllus*	Native Rosella	Native
Malvaceae	*Sida rhombifolia*	Paddy's Lucerne	Exotic
Menispermaceae	*Stephania japonica*	Snake Vine	Native
Myrtaceae	*Acmena smithii*	Lilly Pilly	Native
Myrtaceae	*Backhousia myrtifolia*	Grey Myrtle	Native
Myrtaceae	*Callistemon salignus*	Willow Bottlebrush	Native
Myrtaceae	*Eucalyptus quadrangulata*	White-topped Box	Native
Myrtaceae	*Eucalyptus saligna x botryoides*	Wollongong Woolybutt	Native
Myrtaceae	*Melaleuca styphelioides*	Prickly-leaved Tea Tree	Native
Myrtaceae	*Rhodamnia rubescens*	Scrub Turpentine	Native
Myrtaceae	*Syncarpia glomulifera*	Turpentine	Native

Family name	Scientific name	Common name	Native/Exotic
Oleaceae	*Ligustrum lucidum*	Large-leaved Privet	Exotic
Oleaceae	*Ligustrum sinense*	Broad-leaf Privet	Exotic
Oleaceae	*Olea europaea* subsp. *cuspidata*	African Olive	Exotic
Oxalidaceae	*Oxalis perennans*	Haw	Native
Pittosporaceae	*Pittosporum multiflorum*	Orange Thorn	Native
Pittosporaceae	*Pittosporum undulatum*	Sweet Pittosporum	Native
Plantaginaceae	*Plantago lanceolata*	Plantain	Exotic
Plantaginaceae	*Veronica plebeia*	Trailing Speedwell	Native
Poaceae	*Axonopus fissifolius*	Narrow-leafed Carpet Grass	Exotic
Poaceae	*Cynodon dactylon*	Cooch Grass	Exotic
Poaceae	*Ehrharta erecta*	Panic Veldt Grass	Exotic
Poaceae	*Entolasia marginata*	Bordered Panic	Native
Poaceae	*Eragrostis tenuifolia*	Elastic Grass	Exotic
Poaceae	*Microlaena stipoides*	Weeping Grass	Native
Poaceae	*Oplismenus imbecillis*	Creeping Beard Grass	Native
Poaceae	*Paspalum dilatatum*	Paspalum	Exotic
Poaceae	*Pennisetum clandestinum*	Kikuyu	Exotic
Poaceae	*Poa labillardierei*	Tussock	Native
Polygonaceae	*Rumex* sp.	Dock	Exotic
Pteridaceae	*Adiantum formosum*	Common Maidenhair	Native
Pteridaceae	*Pellaea falcata*	Sickle Fern	Native
Ranunculaceae	*Clematis aristata*	Old Man's Beard	Native
Ranunculaceae	*Ranunculus repens*	Creeping Buttercup	Exotic
Rhamnaceae	*Alphitonia excelsa*	Red Ash	Native
Rosaceae	*Rubus parvifolius*	Native Raspberry	Native
Rosaceae	*Rubus rosifolius*	Rose-leaf Bramble	Native
Rutaceae	*Melicope micrococca*	Hairy-leaved Doughwood	Native
Santalaceae	*Exocarpos cupressiformis*	Cherry Ballart	Native
Solanaceae	*Solanum mauritianum*	Wild Tobacco	Exotic
Solanaceae	*Solanum pseudocapsicum*	Jerusalem Cherry	Exotic
Urticaceae	*Urtica incisa*	Stinging Nettle	Native
Verbenaceae	*Lantana camara*	Lantana	Exotic
Verbenaceae	*Verbena bonariensis*	Purpletop	Exotic
Vitaceae	*Cayratia clematidea*	Native Grape	Native

Appendix B: Planting palette

Planting palette for the vegetation community Moist Box-Red Gum Foothills Forest, as described in the Native Vegetation of the Illawarra Escarpment and Coastal Plain (NPWS 2002).

Scientific Name	Common Name
Tree	
Alphitonia excelsa	Red Ash
Eucalyptus quadrangulata	White-topped Box
Eucalyptus saligna x botryoides	Wollongong Woollybutt
Eucalyptus tereticornis	Forest Red Gum
Small Tree	
Acmena smithii	Lilly Pilly
Elaeodendron australe var. *australe*	Red Olive Plum
Melaleuca styphelioides	Prickly-leaved Tea Tree
Melicope micrococca	Hairy-leaved Doughwood
Pittosporum undulatum	Native Daphne
Rapanea variabilis	Muttonwood
Rhodamnia rubescens	Scrub Turpentine
Streblus brunonianus	Whalebone Tree
Wilkiea huegeliana	Veiny Wilkiea
Shrub	
Backhousia myrtifolia	Grey Myrtle
Clerodendrum tomentosum	Hairy Clerodendrum
Croton verreauxii	Green Native Cascarilla
Notelaea venosa	Veined Mock-olive
Pittosporum multiflorum	Orange Thorn
Pittosporum revolutum	Wild Yellow Jasmine
Backhousia myrtifolia	Grey Myrtle
Grasses	
Entolasia marginata	Bordered Panic
Microlaena stipoides var. *stipoides*	Weeping Grass
Oplismenus imbecillis	Creeping Beard Grass
Panicum pygmaeum	Pygmy Panic
Poa labillardierei	Tussock
Fern	
Adiantum formosum	Black Stem
Asplenium flabellifolium	Necklace Fern
Doodia aspera	Prickly Rasp Fern
Doodia australis	Common Rasp Fern
Pellaea falcata	Sickle Fern

Scientific Name	Common Name
Climber	
Eustrephus latifolius	Wombat Berry
Geitonoplesium cymosum	Scrambling Lily
Marsdenia rostrata	Milk Vine
Morinda jasminoides	Sweet Morinda
Pandorea pandorana subsp. *pandorana*	Wonga Wonga Vine
Parsonsia straminea	Monkey Rope
Smilax australis	Lawyer Vine
Other	
Dichondra repens	Kidney Weed
Gymnostachys anceps	Settlers' Twine
Nyssanthes diffusa	Barbwire Weed
Pseuderanthemum variabile	Pastel Flower

Appendix C: Weed treatment methods

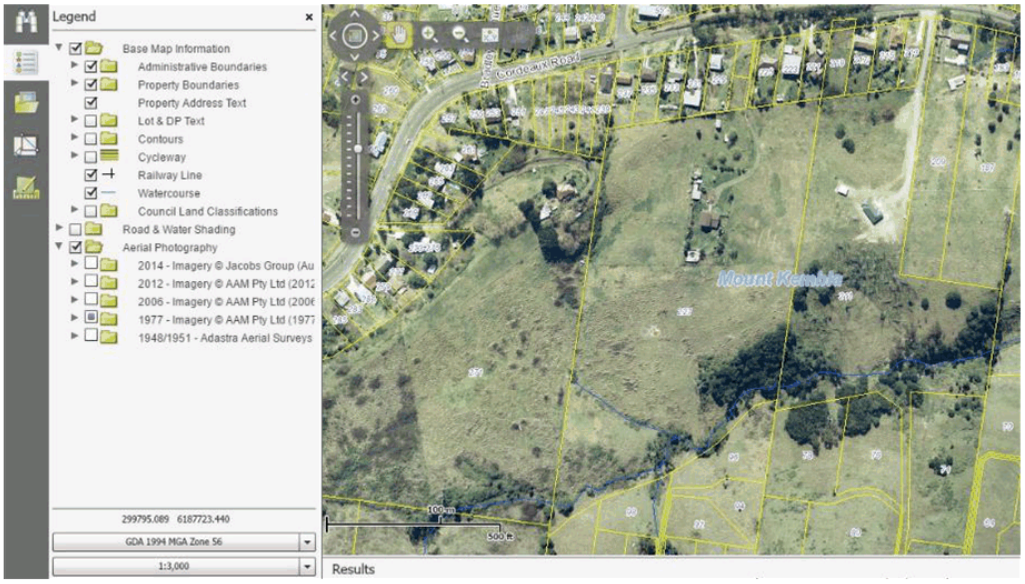
Zone	Objective	Main Weeds	Method	Key Performance Indicators (KPI)
All	• Control and suppress exotic grass species and herbaceous weeds.	• *Ageratina adenophora, Conyza* sp., *Cynodon dactylon, Cirsium vulgare, Ehrharta erecta, Gomphocarpus fruticosus* (Narrow-leaved Cotton Bush), *Lilium formosanum* (Formosa Lily), *Senecio madagascariensis*, *Sida rhombifolia* and *Verbena bonariensis*.	• Primary and secondary treatment of herbaceous weeds and exotic grasses will occur in the first year of the contract. This will be achieved by hand weeding, as spraying will not be possible across most of the site without resulting in off target damage to native groundcover and grass species. Established tall herbaceous weeds with a woody habit, including *Ageratina adenophora* and *Sida rhombifolia* should be cut and painted with neat Roundup Biactive®. Herbaceous weeds will be treated prior to seeding, bagged, removed from site and disposed at a licensed green waste facility. • Maintenance works will consist of detailed hand weeding amongst developing patches of native groundcovers and grasses, with the aim of consolidating these patches. Areas of high resilience should initially be the focus of detailed maintenance work, followed by more degraded areas of the site. *Ehrharta erecta* occurs in relatively low abundance and should be targeted during the maintenance phase. *Cynodon dactylon* should be sprayed where off target damage to native species is unlikely (i.e. along the northern boundary of the site).	• A 50% reduction in cover by the end of year one. • A 50-70% reduction by end of year two. • A 70-90% reduction by the end of year three. • <5% cover by the end of year four.
	• Deseeding, skirting and eventual eradication of exotic vine species.	• *Araujia sericifera* and *Delairea odorata*.	• All exotic vines species should be deseeded and skirted in the first three months of the contract. Subsequent primary and secondary work will focus on the gradual eradication of exotic vines through the VMP subject site, beginning with more manageable infestations. Exotic vines should be treated using a combination of hand removal and scrape and painting with neat Roundup Biactive®. All primary and secondary exotic vine	• A 60% reduction in cover by the end of year one. • An 80-95% reduction in cover by the

			treatment will have been conducted in the first year of the contract. • Maintenance sweeps will be conducted to prevent the establishment of exotic vines species, particularly *Araujia sericifera,* which is likely to have viable seed stored in the weed seed bank.	end of year two. • Exotic vines maintained at <5% cover by the end of year 3. • No vines >5cm in length and maintained at <5% cover by end of year 5.
	• Treatment of all woody weeds.	• *Lantana camara, Solanum mauritianum, Senna pendula var. glabrata*, *Ligustrum lucidum* and *Ligustrum sinense.*	• Primary and secondary woody weed removal will be conducted in the first year of the contract. Scattered woody weeds with a low abundance will receive primary treatment within the first 3 months of the contract. *Lantana camara* will be targeted on a monthly basis and systematically removed from the site. Treatment methods include hand removal, or cut and painting with neat Roundup Biactive®. A majority of the woody weed piles should be removed from site and taken to a licensed green waste facility. • Maintenance woody work will consist of sweeps through the VMP subject site to prevent woody weeds from becoming re-established. Maintenance work should be conducted regularly, with a focus on removing woody weeds before reaching >50 cm, or prior to seeding.	• A 95% reduction in woody weed cover by the end of year one. • Woody weeds maintained at <5% cover by end of year 2. • No individuals >10cm remaining and maintained at <5% cover by end of year five.

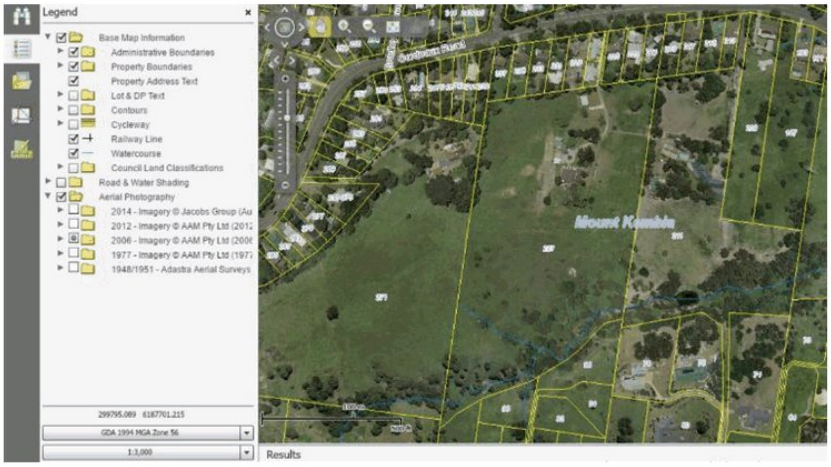
Appendix C – Historical aerial imagery (courtesy WCC).

1948/51

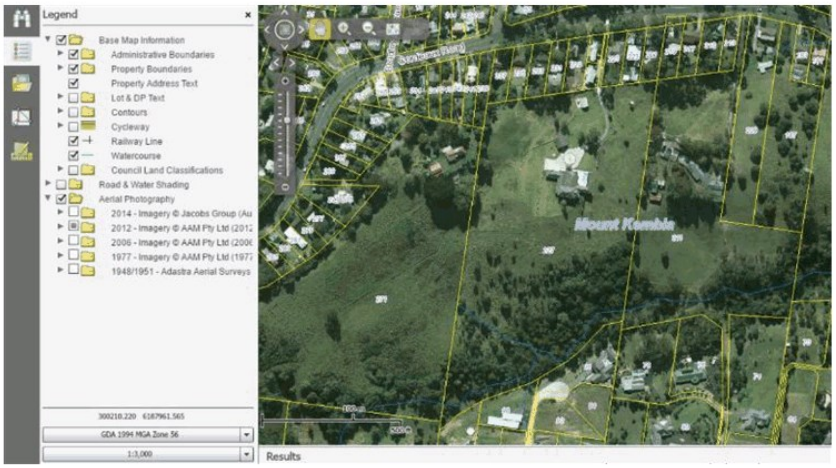
1977



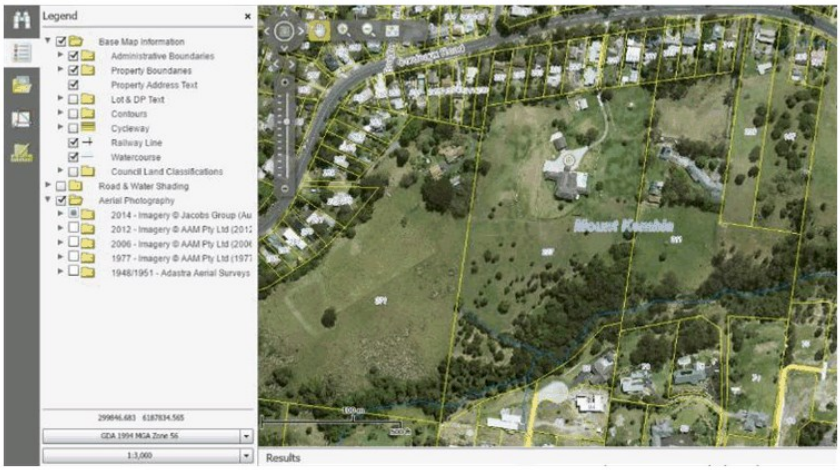
2006



2012



2014



369 Cordeaux Road
MT KEMBLA NSW 2526

March 9, 2018

Councillor Gordon Bradbery AM, Lord Mayor
Councillor David Brown, Deputy Lord Mayor
Councillor Cath Blakey
Councillor Tania Brown
Councillor Leigh Colacino
Councillor Chris Connor
Councillor Mithra Cox
Councillor John Dorahy
Councillor Dom Figliomeni
Councillor Janice Kershaw
Councillor Vicky King
Councillor Jenelle Rimmer
Councillor Cameron Walters

Wollongong City Council
Locked Bag 8821
Wollongong DC NSW 2500

Dear Councillors

We are writing on behalf of a number of Mount Kembla residents to advise you of our serious concerns about two recent proposals to rezone lots on Cordeaux Road:

1. Lot 100 DP 1207784 Cordeaux Road, Mount Kembla
2. 227 Cordeaux Road (Lot 100 DP 1123517) Mount Kembla

Our concerns are:

1. Both these rezoning proposals relate to properties that have changed hands over the past two years. The recent purchasers of both properties would have been aware of the constraints on development of the properties they purchased. One can only assume that their motivation for purchase was the potential of subdividing their properties to make money, despite the existing planning constraints.

2. These proposals, at least to some degree, contravene the intention of the Farmborough Heights to Mt Kembla Concept Plan endorsed by Council and the State Government in 2013/14. This plan aimed to provide certainty for the community on potential development sites and established larger lot developments such as the two, and others around them, that are the subjects of these rezoning proposals.

3. If these properties are rezoned, there will be no certainty about further developments in the same area, and within a relatively short time, the unique village character of Mt Kembla will be compromised.

4. Wollongong City Council in the 1980s promoted a long term strategy to keep Mount Kembla a village. They achieved this then by working with the community in many public meetings and directly with the developer of Cordeaux Heights subdivision. One of the conditions imposed on the Cordeaux Heights developers was that a minimum five acre lot size was maintained in certain areas of the subdivision and building envelopes designed that have provided separation from Mount Kembla allowing it to retain its village atmosphere.

5. The Concept Plan also sought to ensure the conservation and management of the environmental attributes of the foothills of the Illawarra Escarpment. It recognised the contribution that appropriately scaled and located residential development could make to conserving land of high ecological value, restoring degraded lands and providing an overall community benefit in terms of creating conservation opportunities.

Our questions for Council are:

• Is the current Council still promoting its long term strategy of protecting Mt Kembla's village atmosphere and mining heritage?

• If not, can we please learn about, and have input into, any new strategy for the future of Mt Kembla and Kembla Heights?

• If this strategy is still supported by the current Council, what is the reason for Council officers recommending these rezonings?

We ask that Councillors consider carefully the implications of these rezoning proposals on the future of Mt Kembla village, and vote against them.

Attached is a list of those residents who, in the short time available, have shared the concerns that are outlined in this letter. Past experience tells us that within the village there are many others who will support our initiative in writing to Council.

Yours respectfully,

Elizabeth Roberts
Chairperson, Mt Kembla Mining Heritage Inc.

Vivien Twyford
Convenor of 2017 Community Meeting

Cc: Mr David Farmer – General Manager
Mr Andrew Carfield – Director of Planning

SUMMARY OF SUBMISSIONS – DRAFT PLANNING PROPOSAL 227 CORDEAUX ROAD, MT KEMBLA (LOT 100 DP 1123517)

Community

Submitter	Comment
Resident Mt Kembla	Objection: • Inconsistent with the Farmborough Heights to Mt Kembla Concept Plan. • Fail to understand how any residential development on these foothills would actually conserve and manage the environmental attributes of the foothills - supporting residential development is in direct contrast. • Allowing any further residential development would destroy the only remaining distinct historical village in the Wollongong LGA – any development that does not reserve a discrete physical and visual separation between neighbourhoods will destroy the character of the village of Mt Kembla, rendering it an extension of Cordeaux Heights and Unanderra. Council will lose its last opportunity to maintain a heritage sector to preserve the site of the most significant mining disaster in Australia – Mt Kembla is a valuable and critical historical asset to Council but this has not been considered – no heritage assessment has been made. • Planning approvals have led to inadequate and disappointing results across the city – many housing developments and in particular high density housing in the city are architecturally lacking and detracting from the character of the surrounding structures and the city as a whole – I have no confidence in your ability to limit developments to remain within their boundaries nor do I have any confidence that you will ensure any construction will be consistent with environmental and heritage concerns. Ardent supporter of good planning that sustains healthy living and community engagement. • Would be keen to understand how additional development would benefit the quality of life of those of us who currently live in Mt Kembla – increased housing on the approach to the village would render our neighbourhood less attractive with reduced vegetation surrounding us, limiting the movement of many of the native animals that live and move across the two areas under consideration. • Council has spent many millions of rate payer funds to develop the “Blue Mile” but there are equally valuable community and cultural assets, such as the village of Mt Kembla, that warrant attention in order that they retain their distinct characteristics and can be enjoyed by all residents of the city, but it seems to have been completely overlooked. • The walking and cycle pathway leading into Mt Kembla is an attribute enjoyed by many residents, particularly as it leads to green open areas and to grazing cattle in the paddocks as you enter Mt Kembla. Housing on the foothills would destroy these features. • Believe Wollongong Council has a vested interest in supporting further development as the Council will always make a financial gain and it is impossible for you to be an objective arbiter of any development submission. It appears that Council will always look favourably on these types of proposals.

Submitter	Comment
Resident Mt Kembla	Writing to express concern about potential developments and subdivisions: • Community letter signed by almost 100 residents who object to the rezoning of rural land that would allow for subdivision. Mt Kembla is a valued locality by residents and visitors for its unique village and heritage atmosphere. Tourists enjoy scenic rural views on way to historic village and heritage listed sites. It is the open paddocks and remaining heritage cottages and buildings that make Mt Kembla an attractive tourist destination and home. • Council recently invested heavily in a shared pathway at the entrance to Mt Kembla that looks over these rural paddocks and is very well utilised and valued – to now add some modern housing on the slopes would destroy the character of this asset. • The letter Council sent in response to the community letter showed a lack of regard for the communities strong views opposing these developments - disappointing to read Council ignoring the longstanding agreements, consultations and plans they have engaged with our community over many years to preserve our unique character. • To suggest that this development would aid the rehabilitation of land by adding more houses, exotic trees and domestic predatory animals to the area is simply unbelievable. Wollongong is fast losing its open grassland habitat to extensive development at the foothills of the escarpment. This patch of open space had been set aside as a 5 acre buffer zone around Mt Kembla that achieves the following outcomes for the community: • Serves as a buffer to the encroaching Wollongong suburban sprawl. • Maintains the unique historic village atmosphere of Mt Kembla as a separate locality and tourist destination and gate way to the escarpment. • Maintains open grass lands essential to species biodiversity in conjunction with adjoining rainforest habitat. • Provides a wildlife corridor for wildlife to move freely from the escarpment to the foothills of Mt Kembla as they have always been able to do. • Maintains a much loved historic rural view being in the James family from pioneering days until recently. • Urge Council to see the short sightedness of this proposal and to put value on what is a unique locality and asset to the Wollongong LGA. With the loss of the only remaining pioneer home in Mt Kembla recently along with these rezoning proposal the community is reeling at the erosion of what we've held dear and fought for for decades.
Resident Mt Kembla	• Recently moved to Mt Kembla – purchased based on unique nature of the Mt Kembla village, semi-rural feel, heritage value of village. Felt confident Council would also value the attributes that make Mt Kembla so unique. • Deeply concerned and upset at recent events in Mt Kembla as well as the current proposals for rezoning.

Submitter	Comment
	• Feel it is short sighted not to preserve the grazing paddocks when entering Mt Kembla – these paddocks set whole scene for the village and set it apart from the surrounding suburbs. To replace it with houses would mean that Mt Kembla would no longer be separate and unique. • The idea that building houses would somehow help rehabilitate the land seems bizarre and contradictory. • Mt Kembla's unique character and heritage values have great untapped tourism potential - once the village feel is lost so too will this potential. • People who purchase properties purchase with the zoning stipulated and should not expect to have their properties rezoned for profit at the expense of the community. • Urge Council to reject these proposals and preserve a unique part of Wollongong that once lost will not be able to be regained.
Resident Mt Kembla	• Oppose this development as it destroys the notion of a "green corridor" established in the late 1980s. • Mt Kembla retains its distinct identity because there is a visual separation between the village and suburbia – any building that is placed within this space will remove the separation – there will be visual disturbance. • Easy to see the ways that the planning rules and regulations can be manipulated by property owners – the "quasi" 3 story house/meeting hall at 223 Cordeaux Road – three single story residences are connected and climb the sloping block. A second example is the removal of a 100 year old tree because it was too close to a house thus conforming to Council's tree removal plan – then the house is demolished days later, one hundred and twenty five years of history gone. We have been seriously let down by the Council and the State government in this example. • The property has been bought in the full knowledge of the existing planning restrictions. • The community has been consulted twice for its input regarding the development of Mt Kembla – in the 1980s and more recently. The community does not want Mt Kembla to be swallowed up by the suburban sprawl. • You asked us what we thought. We told you what we thought. Will you hear us or will you let us down again?
Resident Mt Kembla	• Have written to you about the proposed rezonings – the concerns I raised in that letter were supported by 91 Mt Kembla residents all of whom are worried about the suburbs encroaching on the amenity of the village of Mt Kembla. • Sad that Council officers have recommended that these proposals be approved – since 1973 have enjoyed unique community. Fear Mt Kembla will be replaced by a suburb that uses up every inch of land for new housing. We all thought that the Mt Kembla Concept Plan drawn up 20 years ago would protect the village and create a green barrier between it and Unanderra/Cordeaux Heights – it would appear that that

Submitter	Comment
	is not the case. Council officers have responded to all our concerns in planning speak, negating them all. • Ask that you consider what happens after these zonings are approved – several other land owners waiting to see the outcome of these rezoning applications so they get confirmation that if they invest in applications to rezone their land their investments are likely to be rewarded even though they knew when they bought the property that there were development constraints. • Thin edge of the sword – people need homes and Mt Kembla is a desirable residential area – however its very desirability may well be its undoing and be the reason for it transformation into just another Wollongong suburb • Ask you to think about the need for oases within the urban sprawl and the importance of not losing the few we still have.
Resident Mt Kembla	Write to express my disgust in the proposed rezoning of Mt Kembla – we have a unique heritage and it needs to be preserved and is highly cherished by residents.
Resident Mt Kembla	• See change as a necessary part of the evolution of a place, however change must be to address an emerging need, not just a mercenary one. Change must improve – object when the essential qualities of Mt Kembla, the very things that make people want to live here, are being lost. • Mt Kembla is a village separated from other developments by a green "buffer" at the entrance to the village and running behind the existing houses up to the fire trail – this application jeopardises that corridor. • Owner has bought the property with the full knowledge of the subdivision restrictions. If approval is given for 2 houses then it is probable that these will be further subdivided in the future. Once 2 houses are in place they could be used to support an argument that the green corridor no longer exists – it is the thin edge. • Nothing has changed since the purchase of this property that would justify this development application – no new need is being addressed. • Please do not compound the lack of commitment to the village evidenced by the recent demolition of a 125 year old house in the historical precinct. Mt Kembla's unique industrial history necessitates a specific development strategy that allows change without sacrificing heritage and village life. The community of Mt Kembla thought this had been done (Community Consultative Committee of the 1980s and the more recent Farmborough Hts to Mt Kembla Plan).
Resident Mt Kembla	Objection: • Clear violation of previous plan put in place to protect the individual character of the village of Mt Kembla. • When William James Drive rezoning was allowed this land was to be kept as one parcel to maintain a buffer to the village – allowing this land to be subdivided is a clear violation of the trust the Mt Kembla residents

Submitter	Comment
	put in Council that this would be maintained in perpetuity. • Allowing a subdivision with lots up to 5000m² with a 30% plot ratio is outrageous – could have houses of 1500m² in size which is the size of a small factory – what is to say these lots would not be further subdivided in the future – WCC is setting a precedent. • Object that developer bought this property with the current zoning, allowing further subdivision just gives that developer a windfall profit at the expense of the community – cannot see how this could be justified.
Resident Mt Kembla	• Support letter of concern dated 9 March 2018. • The proposed subdivision does not highlight the two existing properties currently using the common drive which also services the property at 227 Cordeaux Road – does the width of the proposed driveway entering off Cordeaux Road to the subdivision comply with Council rules? • The amount of traffic to possibly use the proposed driveway only increases risk of any emergency which may occur. • The infrastructure is currently OK for the number of people we currently have but to start adding density to the village with the increase in traffic is not. • People who live in the village live here because that have invested their time and money to create a village atmosphere as a neighbourhood - why must it be developed to destroy what now exists. • We elect our city councillors to represent we the public interests - this development is not in the public interest.
Resident Mt Kembla	As next door residents we wish to register our objection to the proposed rezoning and subdivision. Our objection is on safety grounds in regard to the existing access driveway – the increase in traffic will pose extreme safety risks to residents: • On at least 2 occasions cars have reversed from 1/227 and 2/227 dwellings on the driveway and into our log wall – these incidents have occurred less than a metre from and above where our grandchildren frequently play in our backyard. On another occasion a truck using the existing driveway took out a pole that was holding up the carport on the 1/227 dwelling and damaged the guttering. • The edge of the driveway is between 0.5m and 0.9m from our boundary. • Our house is built 1.9m from the edge of the driveway and 1.2m below the driveway i.e. a 1.2m vertical drop just within our boundary. This places all access traffic along this driveway less than 3m from the main internal living spaces in our house. • The driveway is also a serious safety risk for residents and children of 1/227 and 2/227 accessing and playing outside their front door only 2m from the driveway. • The driveway of length 60m and width 2.8m does not allow for two vehicles to pass.

Submitter	Comment
	• There is no available space for a passing bay to be built along the driveway. • The proposal does not address limiting the speed of vehicles travelling in very close proximity to adjacent residences. • The proposal does not address the potential risk of vehicles driving off the eastern edge of the driveway and injuring children and residents in the backyard of house located at 225 Cordeaux Road. • The issue of safety of sight distance when exiting on to Cordeaux Road is a concern. • The issues previously raised by the NSW RFS regarding the width and length of access are still of concern for the proposed two new dwellings. We believe strongly that the 2.8m wide driveway is inadequate to take the present traffic load, let alone the increased traffic for an extra two dwellings.
Form Letter 1: Ten Mt Kembla Resident signatures	As long term residents we are concerned about the proposed zoning changes to properties: • Feel these properties have been purchased with sole intent on developing them at substantial profit. • These developments will destroy the unique character of Mount Kembla. • These developments will set a precedence for future development along the fragile escarpment area.
Form Letter 2: Eight Mt Kembla Resident signatures	As a resident, extremely opposed to paddocks being rezoned and subdivided for following reasons: • Reduction of green buffer around Mt Kembla erodes unique village character. Mt Kembla in one of the last distinct villages within the LGA – these subdivisions endanger it from being part of the suburban sprawl. • The green open spaces are a valued community asset. The new shared pathway into Mt Kembla takes in these historic green views, people love looking across paddocks at cows and wildlife – they do not want these views interrupted by modern housing. • Council going back on long standing promises to community to protect Mt Kembla from the suburban sprawl. • These rezonings have potential to encourage further subdivisions in Mt Kembla. • Properties were recently purchased with current zonings and restrictions in place – should not be changed for individuals seeking to profit at the expense of community concerns. • More housing on the foothills of Mt Kembla can in no way be seen as contributing to the rehabilitation of environmentally sensitive areas – absurd and contradictory. • Loss of wildlife corridors at the foothills of Mt Kembla – concerns of further strains on local wildlife with the induction of more housing, exotic plants and domestic animals.

Submitter	Comment
	• Loss of open grasslands impact on some animals – grasslands being reduced at an alarming rate. • Council's focus and investment on the "Blue Mile" as a tourist attraction while ignoring the green spaces and heritage tourism Mt Kembla provides is short sighted and limiting the tourism growth of the LGA. • As Council is a financial beneficiary of increased rates with these subdivisions can they be trusted to act on the behalf of the community.
Form Letter 3: Four Mt Kembla Resident signatures	As long term residents concerned about the proposed zoning changes: • Concerned people are buying properties at a price that reflects its "not for development zoning" and then applying to have the zoning changed to allow for development, thus making a sizable profit on their investment. Suggest these purchasers are developers, interested in profits and not concerned with maintaining Mount Kembla's unique village atmosphere. • Will set precedence for future rezoning/developments and Mount Kembla will cease to exist as a unique village with links to our mining heritage.

State Authorities

Submitter	Comment
Office of Environment and Heritage (OEH)	• This site represents a strategically important linkage opportunity and the proposed revegetation and active conservation within the riparian corridor will contribute to this if undertaken and managed appropriately. • Site inspection noted that the area contained a good diversity of native flora species with good potential for rehabilitation and recovery. • The proposed community title provisions outlined are supported for the riparian corridor and access road. Support the protection of the riparian corridor area by an in perpetuity Conservation Agreement registered on title. • The Illawarra Shoalhaven Regional Plan (ISRP 2015) identifies the property as occurring within a biodiversity corridor. The proposal is considered generally consistent with the ISRP provisions to look for opportunities to improve funding and resilience of corridors in strategic planning and proposed land uses need to maintain or enhance connectivity – minor changes to the indicative building envelopes would ensure a better conservation outcome resulting from the proposal. To minimise removal and/or ongoing modification of vegetation on site (e.g. through 10/50 Vegetation Clearing Code of Practice for NSW) it is recommended that building envelopes be set back a minimum 50 metres from the outside edge of the vegetation boundary – would allow optimal enhancement of the riparian corridor area and therefore better meet the objectives within the Concept Plan and ISRP • The Planning Proposal is considered to be generally consistent with the Concept Plan intent and provisions.

Submitter	Comment
	• A Vegetation Management Plan (VMP) should be prepared for the riparian corridor prior to the amending LEP being publicly exhibited. The VMP will need to demonstrate appropriate costings for works and provisions for funding ongoing management. Key considerations for management include weed control, supplementary planting, appropriate management of feral deer and monitoring of works to ensure conservation outcomes are achieved. • The proposal should include a due diligence assessment at planning proposal stage in accordance with OEH guidelines, before any ground disturbance works that may result from the proposed subdivision of this land. The due diligence process should determine whether a more detailed Aboriginal cultural heritage assessment is required.
NSW Rural Fire Service (RFS)	• The development of the site should be restricted to a maximum of 3 lots, which may have access by a 4m wide right of way. • Do not support the proposed 4 lots due to *Planning for Bushfire Protection 2006 (PBP)* compliancy issues regarding access: I. Access to the property does not comply with PBP – "access to a development comprising more than 3 dwellings have formalised access by dedication of a road and not by right of way" II. The road access would be required to be 6.5m in width as per Table 4.1 of PBP – existing access handle from Cordeaux Road is only 4.5m in width III. Dead end roads are not recommended, but if unavoidable, dead ends are not to be more that 200m in length – the length of this driveway is indicated as 230m • If the proposal for 4 dwellings is to proceed it will be necessary to acquire land outside of the lot for a 6.5m wide road or development of the site in conjunction with adjoining land(s) also nominated in the Farmborough Heights to Mt Kembla Concept Plan as potentially developable.
Sydney Water	• No objection. Adequate capacity in water trunk system to service the proposed development – amplifications or extensions may be required. • Limited capacity in trunk wastewater network system. Latest hydraulic model indicates there may be surcharges from the wastewater system under extreme wet weather conditions at ground levels below approximately 39 metres. A feasibility application will be required to be lodged with Sydney Water. • 227 Cordeaux Road is burdened by Easement for Water Supply 2.5 Wide and Easement for Access and Drainage purpose variable Width – this easement is not to be built over or encroached in without the consent of Sydney Water.
Roads and Maritime Services (RMS)	• No objection in principle as it is unlikely to have a significant impact on the state road network, noting: I The Planning Proposal is consistent with the endorsed Farmborough Heights to Mt Kembla Concept Plan which, in part, identifies potential for additional residential development on this site.

Submitter	Comment
	II The total number of residential allotments to be created by the rezoning will be 3 (i.e. the existing dwelling and two additional lots). • Council needs to be satisfied that: I Sufficient space is available for two vehicles to pass on the existing right of way and that access arrangements are suitable for the proposed intensification/additional dwellings without adversely impacting upon the local road network. II Suitable arrangements are in place for ongoing garbage pick-up noting the length of the right of way and where bins will be placed for pickup. III Sufficient sight lines are available/not restricted at the site's access point with Cordeaux Road.
Department of Primary Industries - Water	• No objection to the rezoning. Once rezoned appropriate protections should be included to ensure that the E2 zone is protected from future activities. It is suggested that physical structures be incorporated along the E2 zone to ensure that no hazard reduction activities to create Asset Protection Zone (APZ) encroach into the riparian corridor.

Internal Consultation

Submitter	Comment
Flooding Issues	• Development Engineering Section has no objection to the rezoning of this land for the purpose of subdividing from a stormwater and floodplain management perspective. • Any future development on the land will be subject to the requirements of Chapters E13 and E14 of Council's Wollongong DCP 2009, Clause 7.3 of the Wollongong LEP 2009 and the NSW Government's Floodplain Development Manual 2009. • Noted that the proposed Lot 2 may require the acquisition of an interallotment drainage easement over downslope properties to facilitate the disposal of stormwater from any development.
Access Issues	• The proposed access arrangement for a further four lots would not comply with Clause 3.2.2 of AS2890.1 – specifically the width of the driveway and the spacing of passing bays. A 3 metre wide driveway with appropriately spaced passing opportunities under Clause 3.2.2 can only be permitted for "domestic properties" – definition in AS2890.1 (Clause 1.3.12) is a property comprising three or less domestic units. The development needs to either revise down the number of dwellings or upgrade the access to allow passing. • Waste collection form the street would not be supported – private waste collection will need to be arranged in line with WDCP 2009.
Geotechnical Issues	• A high geotechnical constraint is noted in the north western corner – it is located west of the existing dwelling and remote from any of the proposed building envelopes. The building envelopes are considered feasible from a geotechnical perspective and encountered geotechnical constraints can readily be managed through routine earthworks.

Submitter	Comment
	Supplementary geotechnical advice will be required to support the engineering design for the subdivision as well as for the development of the lots created by the subdivision.
Environment Issues	• Vegetation community MU13 Moist Box-Red Gum Foothills mapped and confirmed. • Do not support removal/thinning of MU13 and planted native vegetation to create APZ buffers. Recommend building envelopes set back 50m from riparian corridor/E4 boundary and APZs be moved north to be within E4 zone. This will allow the retention of all moderate constraint area/MU13 and some of the native plantings/propagation area to achieve a moderate to high biodiversity outcome. • Riparian corridor requires 40m buffer to protect core riparian zone with APZ requirements to be maintained outside this area. Need to move building envelopes north. • The Ecological Constraints Assessment (2017) states the site contains no threatened species habitat or hollow bearing tees – site inspection identified several hollow bearing trees which have potential to provide habitat for a number of threatened species. No additional survey or assessment required at this stage as all areas of potential habitat are proposed to be retained within the riparian corridor area/E2 zoning. • Rezoning from E3 to E2/E4 will result in a low level conservation and improvement outcome as outlined in the IESMP 2015 and Farmborough Heights to Mt Kembla Concept Plan (2013) • The proposed E2 zoning area is too small for a BioBanking Agreement. Not recommended that E2 zone have minimum lot size of 5,000m². • The successful implementation of a Vegetation Management Plan through a Property Vegetation Plan would result in a moderate to high level Biodiversity outcome being achieved – an appropriate Conservation Agreement will need to be administered/registered, funding obtained and active management underway prior to the issuing of a subdivision DA to ensure an improved biodiversity outcome (new Biodiversity Conservation Act 2016). • To ensure high level conservation and improvement outcome, preference for area proposed for E2 zone to be dedicated to Council with VMP and funding. If the landowner does not wish to dedicate to Council, recommended all proposed E2 land to be contained within one separate lot to be owned and managed through Community Title.

ADVICE

WOLLONGONG CITY COUNCIL – WOLLONGONG LOCAL PLANNING PANEL (WLPP)

DATE OF HEARING	31 October 2018
PANEL MEMBERS	Sue Francis (Chair), Mark Carlon, Larissa Ozog, Bernard Hibbard (Community Representative)

MATTER
PP-2017/3 – 227 Cordeaux Road, Mount Kembla.

PROPONENT SUBMISSION2
The Panel was addressed by the proponent and experts.

PANEL CONSIDERATION AND ADVICE
The Panel considered the matters listed in the Council officer's report, and the material presented at the meeting and the matters observed at the site inspection.

The Panel agrees the site has both strategic and site specific merit and is consistent with the Farmborough Heights and Mount Kembla Concept Plan.

The Panel has noted the submissions received and considers that the proposed E2 Conservation Zone would create a reasonable and satisfactory buffer, both visual and physical, to Mount Kembla Village.

VOTING
The voting in respect of this matter was unanimous.