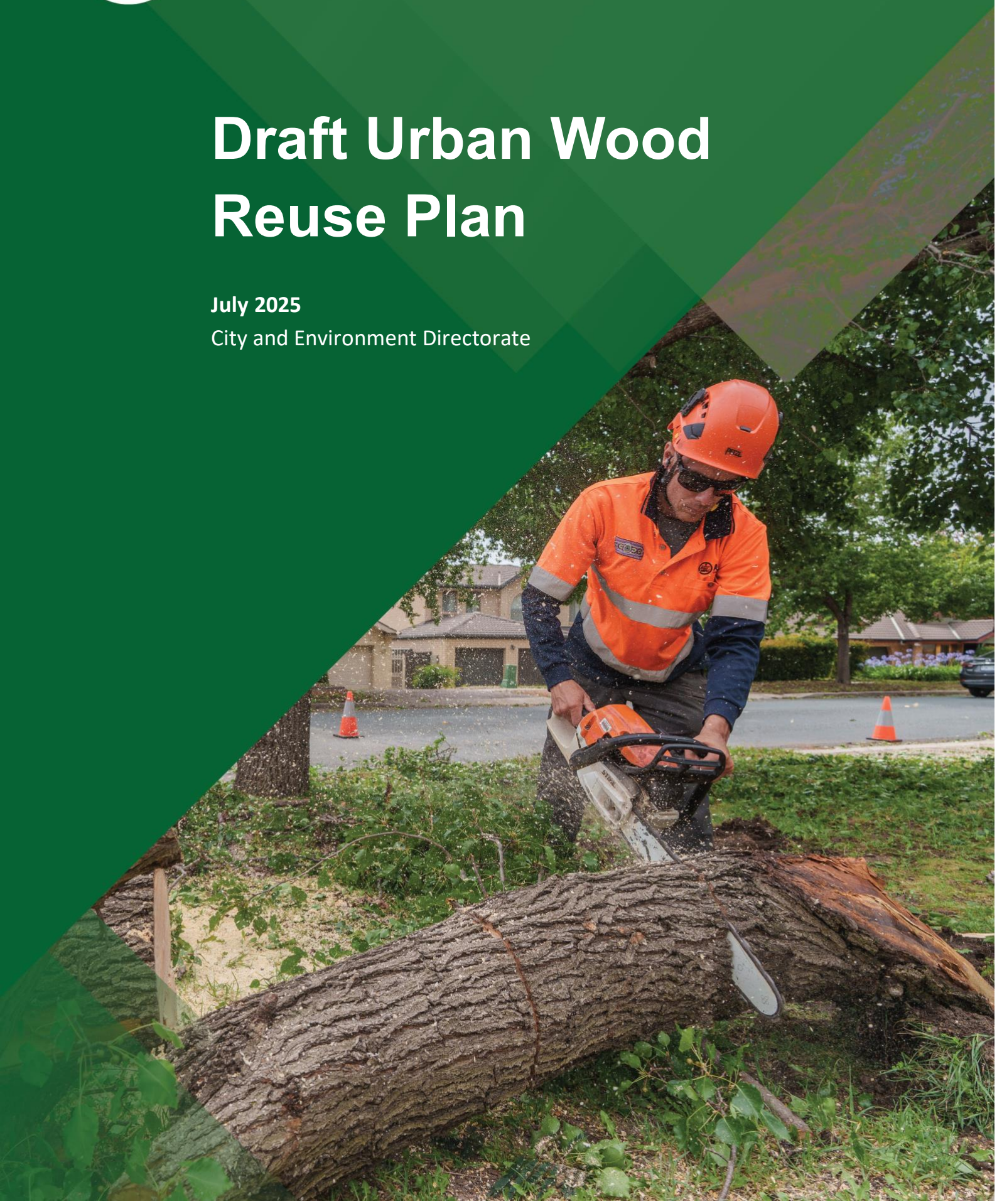
ACT Government

Draft Urban Wood Reuse Plan

July 2025

City and Environment Directorate



Contents

Urban Wood Reuse Plan 2025

Acknowledgement of Country

We acknowledge the Ngunnawal people as traditional custodians of the ACT and recognise any other people or families with connection to the lands of the ACT and region. We acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

Scope

This plan is the starting point of the journey towards our longer-term goal of sustainable reuse of felled urban trees. The plan identifies the actions needed for the reuse of urban wood generated from tree maintenance and removal work undertaken on unleased land, including street and parkland trees in the ACT. Wood from trees on private leased land (e.g. private residences and businesses) and public leased land (e.g. school grounds and hospitals) is not in scope as they have alternate management arrangements. This plan includes wood from trees growing on land managed by the National Capital Authority as part of a joint plan.

Terms and definitions

Key term	Definition
Urban forest	Trees growing in Canberra's urban environment including planted and naturally occurring trees that are managed and regulated in some way.
Tree trunk	Main woody part of a tree emanating from the ground, extending to the first group of lateral branches.
Tree branch	Primary lateral woody stems emanating from the tree trunk.
Tree canopy	Primarily made up of secondary branches and foliage.
Barrel	A section of a tree trunk.
Burl	Part of a tree in which the grain has grown in a deformed manner, commonly a rounded outgrowth on a tree trunk or branch that is filled with small knots. Sought after by wood turners.
Root-ball	Underground part of the tree, salvaged from fallen trees.
Mulch	Woody material that has been processed through a woodchipper or tub grinding machine.
Woodchip	See mulch.
Wood by-product	Barrels, logs, root-balls and mulch derived from tree maintenance and felling operations.
Woodyard	Stockpile facility primarily used to store wood by-product.
Processed timber	Wood that has been milled, treated, and cured.
CED	City and Environment Directorate.

Policy context

The ACT Urban Forest Strategy commits to the development of an urban wood reuse plan as a short-term action (4.3.1) to support Objective 4 (Take an ecological approach and support biodiversity) and states:

> *The reuse of urban forest material (by-product) at end of life is currently receiving attention from industry, academics and urban forest managers in jurisdictions in Australia and internationally. This widespread interest represents an opportunity to tap into local and international expertise to efficiently and economically develop systems that will transform what is currently a 'waste stream' for the Territory into a 'value stream'*.

The ACT Circular Economy Strategy and Action Plan 2023-2030 has also incorporated the reuse of urban wood under the section 'Manage resources to preserve the value of goods and materials'.

Action 3.17 Develop an urban wood reuse plan for trees removed from public land, states:

> *'The reuse of urban forest material (by-product) at end of life has the potential to transform what is currently a 'waste stream' for the Territory into a 'value stream'. Higher value salvaged wood can be processed into sawn timber for use by local schools, community organisations, and businesses, while low value urban wood is processed into new products such as soil and compost, soft fall mulch, biochar and wood pellets.'*

The people of Canberra benefit economically, climatically, environmentally, aesthetically, and socially from Canberra's urban trees. This benefit comes from many years of caring for these assets and allowing them to grow through watering and pruning. The sustainable reuse of urban wood can continue such benefits by realising the highest value afterlife of these trees.

The ACT Government is committed to the sustainable reuse and repurposing of harvested wood to increase resource efficiency and decrease the carbon footprint. The reuse of urban wood can significantly reduce costs associated with dumping and purchasing new materials for the maintenance and development of Canberra's built and landscaped environment. The practice of repurposing wood by-product contributes to Canberra's circular economy and carbon is permanently locked up in solid timber by-product.

Sustainable wood reuse

The ACT differs from other jurisdictions in that the ACT Government has the responsibility for the management of all trees on public land in the urban environment, while elsewhere in Australia it is a local government responsibility. It is therefore possible for the ACT to develop good policy for the sustainable reuse of material from urban trees across the entire city compared to other jurisdictions in Australia.

Sustainable reuse of felled urban trees should consider the best possible environmental, economic and social outcomes for the ACT. This includes an examination of what currently occurs in the ACT and other jurisdictions, and possible new usages.

Our definition of sustainable reuse of felled trees is therefore:

the use of material from those trees which provides the best environmental, economic and social outcomes, including the minimum practical carbon footprint.

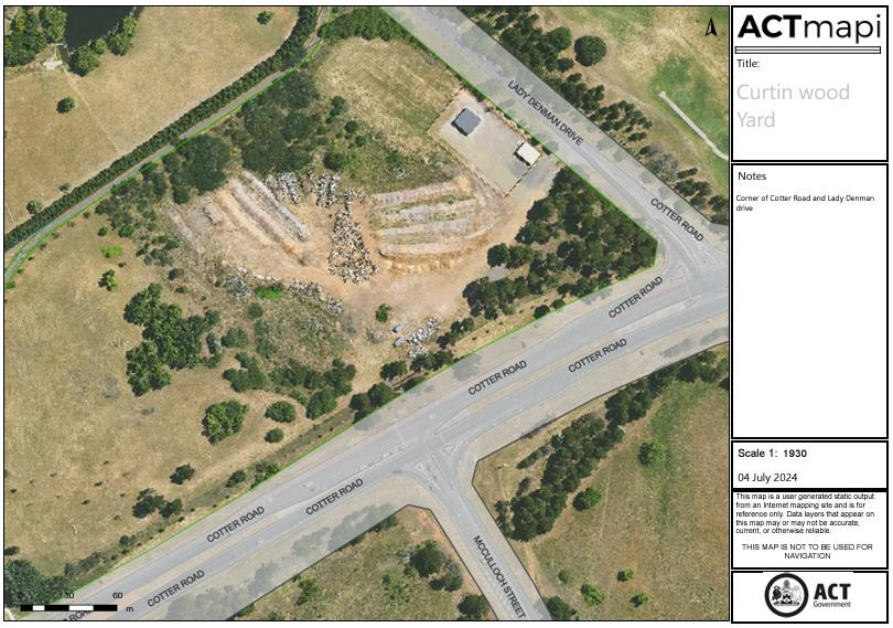
Guiding principles

The Urban Wood Reuse Plan has the following guiding principles on the reuse of felled trees to ensure the best environmental, economic and social outcomes:

- reuse material from urban trees locally, where possible, to minimise handling and transport costs
- maximise long term use of suitable timber
- offset the financial cost of tree maintenance and management where possible
- improve the ecological condition of the local area
- minimise carbon footprint
- maintain visual amenity when considering the reuse of urban trees.

Background

The ACT Government's urban tree removal and maintenance programs generate approximately 1,000 tonnes of solid timber by-product and 10,000m3 of mulch annually. Quantities of by-product can dramatically increase following a storm event. No by-product enters the waste stream as all material is transported from work sites and stockpiled at one of two woodyard facilities, where the material is accessible for reuse. Mulch is also stockpiled at regional Placement Management depots to support horticultural maintenance work in nearby areas.



Aerial view of Curtin woodyard – corner of Cotter Road and Lady Denman Drive

Aerial view of Mitchell woodyard located off Nirta Place in Mitchell

Mulch stockpile at Curtin woodyard

The Territory's woodyard facilities are managed by the Urban Treescapes business unit. The woodyards are repurposed vacant land and are not purpose-built facilities. A temporary facility has been established at the Curtin woodyard, with a secure yard for equipment, but upgrades to perimeter fencing are required to improve restrictions on pedestrian access.

The current strategy for managing wood and foliage by-product from Canberra's urban forest is:

A. Small diameter (<200mm) material (branches and canopy material) is mulched on-site following felling, and the mulch is spread as close as practicable to the site throughout the public urban landscape or transported to the Curtin or Mitchell storage areas.

B. Larger material from tree trunks is transported to the Curtin or Mitchell storage areas and separated into softwood and hardwood piles. Softwood and poor-quality hardwood are later processed into mulch. Good quality hardwood is stored for reuse.

- Some high value wood is separated out and made available to other ACT Government agencies or donated to not-for-profit organisations, community groups and schools.
- Some remnant native timber is relocated to improve ecological condition and habitat in local wetlands and woodlands.

C. Tree roots from fallen trees are transported to the Curtin or Mitchell storage areas for processing into mulch.

Current levels of timber by-product produced are excess to what can be effectively used in the urban public landscape. The removal and maintenance of trees within the urban forest is ongoing and the number of trees to be removed annually is expected to increase as Canberra's urban forest ages.

Requests to use by-product from the woodyards are managed by Urban Treescapes. Material is available free of charge to ACT Government agencies such as schools, the Parks and Conservation Service, the National Arboretum Canberra and the City Renewal Authority as well as community groups and not-for-profit organisations. Urban Treescapes oversees which logs are taken to ensure that there is no conflict between projects and to ensure that appropriate material is used. Quantities of material taken and the location where such material is used and for what purpose is recorded and reported.

The woodyard facilities are also utilised by other branches of City and Environment Directorate (CED) and other directorates such as the Suburban Land Agency (SLA) for stockpiling rock and for temporary storage of materials and equipment.

Community consultation

Canberra has long cherished its street and amenity trees, and removals can create anxiety within the community. The Canberra community will want the opportunity to have a say on the way we sustainably reuse felled street and amenity trees and to ensure this aligns with public expectations. This plan also seeks to create opportunities for partnerships with community and not-for-profit organisations to share resources and support established groups that recognise the value of wood products.

How we currently use urban felled wood

Woodchip / mulch

Mulch provides a range of benefits including:

- Soil moisture retention

- Erosion control
- Improvement of soil structure (by adding organic matter and encouraging beneficial soil microorganisms)
- Improved soil drainage
- Nutrient enrichment of the soil profile
- Protection against soil compaction

Mulch derived from Canberra's urban forest is used extensively by Urban Treescapes' planting crews, City Presentation maintenance teams, Parks and Conservation Service teams, schools, community groups and private contractors (engaged to undertake ACT Government projects). Mulch has also been supplied to the National Arboretum Canberra and used to support capital works projects, estate developments and transport projects. Mulch is primarily used on garden beds, around new tree plantings, on road verges and in weed suppression programs. Mulch is also used as an anti-compaction measure on construction sites for temporary parking and paths.

Mulch is produced from the following sources:

- **Leaves and branches -** From tree canopies processed through a woodchipper machine. This operation usually occurs on site where tree pruning or felling work is undertaken. This mulch is taken to the woodyard facilities or delivered directly to known worksites where mulch is required e.g. public garden beds and plantings, school grounds and community projects.
- **Low value softwood barrels and logs** - Are processed through a large capacity tub grinder machine. This operation occurs at the woodyards where logs and branches have been stored. Tub grinding produces a rough grade mulch with a mixture of large and small particles. The tub grinding machine and operator is hired as needed.
- **Root-balls -** From fallen trees are taken to the woodyard facilities and processed through a tub grinding machine. Root-balls are heavy and awkward to handle, often having soil and rocks attached. Some root-balls are set aside for landscape restoration projects (root-balls are ideal for habit creation).
- **Green waste material** - Such as small branches and woody debris (bark, twigs, sawdust etc.) accumulate at the woodyard facilities and this material is processed through a tub grinding machine. Tub grinding machines can handle small amounts of soil, stones and steel, however, the material that is fed through a tub grinding machine dictates the quality of mulch produced.
- **Stump grindings** - Result in large quantities of sawdust/fine chip when tree stumps are ground down. This material is taken to the woodyards and mixed with mulch stockpiles.

Decomposed mulch from old stockpiles breaks down over time, creating soil material that is rich in organic matter. Grass clippings from sports grounds maintenance are also stored at the woodyard facilities. Once composted, this nitrogen rich material can be blended into existing mulch stockpiles or composted soil. Soil material can be processed through a trammel machine capable of separating coarse material, producing soil that is suitable for planting, topdressing and for filling holes.

Currently, mulch production exceeds demand. Excess mulch restricts space in the woodyards and if left for too long (3 years+), the mulch can degrade and become overrun with weeds. Old mulch stockpiles also create boggy conditions by trapping water and adding humus to the surface of the woodyard. To address this issue, a contract has been established for the removal of excess mulch at no cost to the ACT Government. This mulch is used for sustainable projects in the ACT region.

Opportunities

While mulch derived from Canberra's urban forest is already used by a variety of government agencies including CED, the NAC, community groups, schools and some not-for-profit organisations, this represents only a small component of the mulch generated each year.

Potential opportunities for greater mulch utilisation include:

- encourage greater uptake of mulch to support ACT Government projects rather than purchasing material from landscape suppliers (potential cost savings for projects)
- increase ability for mulch delivery – develop resources to enable a more regular delivery service to support the use of mulch by community groups and non-for-profit organisations
- increase utilisation of mulch in open space land management – consider increasing resources to expand utilisation of mulch by CED and other government agencies
- investigate the production of playground mulch – consider investment in equipment to enable in-house mulch stockpiles to be processed to meet the appropriate standard.
- Explore opportunities to make mulch available to the public – there are issues associated with managing this process e.g. site access and procurement and the potential impact on private mulch providers.
- Investigate the use of mulch as a carbon source to facilitate the organic waste (FOGO) composting process
- seek out opportunities to utilise soil and compost by-product to support ACT Government, not-for-profit and community projects, noting that there is an associated processing cost
- consider options for soil and compost by-product use in landscape maintenance
- explore the conversion of some mown dryland grass areas into mulched garden beds – this would have multiple benefits including reducing mowing burden, increasing habitat and amenity, improving environmental outcomes and sustainable reuse of mulch by-product
- explore future opportunities to utilise mulch to produce biofuel and/or biochar – further investigation and capital investment is required, and specialty skills will need to be recruited, including access to specialised equipment. There is potential for a small volume trial to produce biochar for internal use.

City Presentation staff loading mulch at Curtin woodyard

Solid Timber – logs, barrels and root-balls

Tree trunks and branches with a diameter greater than 400mm, that cannot be processed through a wood chipping machine, are stockpiled at the woodyard facilities. Hardwood and softwood are stockpiled separately, with low value softwood periodically processed into mulch.

Hardwood is used for the following purposes:

- Creation of nature play equipment in school grounds and public parks
- Habit creation in nature reserves and public open space including wetlands
- Erosion control
- Landscape features (Attach A)
- Outdoor furniture – furniture (Attach A)
- Sculptures (Attach A)
- Bollards to block vehicle access into parks and reserves e.g. Ainslie/Campbell
- School woodworking programs
- Firewood for the kilns at the Strathnairn Arts Centre
- Woodchopping training for Capital Country Woodchopping (non-for-profit organisation) - low value softwood logs
- CED chainsaw training

Opportunities

Timber by-product is stored at the woodyard facilities in a natural state i.e. logs and barrels of random lengths with bark still attached and the timber is green. Timber in this state is suitable for outdoor landscape applications, however, there is a limit to this demand. Processed timber that has been milled into slabs and blocks, kiln or air dried, and then treated (to prevent cracking) is more valuable and is in high demand.

Many urban trees being chipped have significant potential for higher value uses, including:

- creating valuable timber products specific to the unique forest trees
- providing high-quality materials to schools, CIT, local government projects, and other local entities
- mitigating community concerns about tree removal by demonstrating the beneficial use of the timber.

Demonstrating the provenance of timber can significantly increase its value to specific recipients, such as repurposing and returning the salvaged timber to the community where the tree was located.

Logs can be processed into slabs, boards and blocks and there is potential for use in a variety of markets. Potential opportunities for processed timber utilisation include:

- furniture, cabinet making and joinery
- fine timber - jewellery boxes, artwork, etc.
- sculptures
- feature timber - wall panelling, timber insets, way finding signage, etc.
- structural timber – posts and beams for pergola constructions, sleepers, etc.
- dressed logs – used as bollards, landscape features and yarning circles

- timber stakes – in-house planting team
- fence posts, rails and palings
- explore the suitability of root balls and blocked timber for wood turning and sculptures
- collaborate within government to investigate the opportunities to provide material for the restoration of historical buildings and huts in Namadgi National Park e.g. replacement of wall panels, floorboards and roof shingles.

Urban Treescapes will develop documented specifications to support arborists to adjust removal methods, enabling better reuse of target species of urban wood i.e. species of high value due to feature colour, grain, smell and durability of the wood. Investigate methods of marketing timber slabs and blocks to local woodworkers, artists, and wood merchants.

Timber offcuts

When milling logs, only 50% of the timber is salvaged for slabs and blocks, however, the offcuts can be used for the following purposes:

- log hollows – attached to standing trees for bird and possum habitat (better insulation qualities than manufactured timber boxes).
- small pieces of wood for local wood workers and school woodworking programs e.g. for pens, bookmarks, utensils, toys, etc.
- wood shavings for smoking (barbecue) – social enterprise could bag and sell at markets
- firewood kindling bags – not-for-profit groups e.g. Rotary, Lions club or Scouts could bag and sell
- firewood to support indigenous ceremonies and non-funded events e.g. The Forage.

Considerations

- **Quality and supply** – While significant quantities of wood by-product are generated from Canberra's urban forest, these quantities are not large enough, and supply is too inconsistent to support commercial forestry operations. Species variation, variation in log diameter and length also limit how timber can be used. Canberra's urban trees have not been pruned to produce long, straight barrels without knots according to forestry standards and are only removed at end of life or when defects present a risk to the community.
- **Managing the woodyards** – Current resourcing only allows for the woodyard facilities to be managed in a minimal way and this does not facilitate the repurposing of by-product into higher value products e.g. milled timber. To do this, an investment would need to be made to employ a full-time woodyard coordinator[1], with access to an excavator, front end loader and truck.
    - Logs that come into the woodyard are currently randomly stored on the ground. To enable efficient reuse, softwood and hardwood logs must be separated and logs graded according to high value target species and timber quality. High value logs must be tracked to record the source location and species and then stored in a designated area to enable access.

[1] A full-time woodyard coordinator has recently been employed. This position is currently non-ongoing.

- **Felling requirements** – The value of timber can be diminished because of the tree removal process when logs are cut too short or when cuts are made at inappropriate locations e.g. too close to branch intersections, knots, and burls.
- **Transport costs** – Once mulch or solid timber by-product has been stored, the cost to handle and transport this material can become an issue and present a deterrent for reuse options.
- **Felled wood identity** – Currently, recording of tree species, provenance and harvest date does not occur. Such data adds value to the timber by providing an historical context and assists woodworkers understand potential usage.
- **Procurement requirements** – A procurement for the disposal of surplus mulch has recently been undertaken, however, there is no procurement in-place for the disposal of solid timber by-product.

Measuring and evaluating our success

Utilisation of reused wood

CED already keeps track of reused wood and reports this information through the Annual Report. For example, in 2020-21, urban wood waste was extensively recycled to provide approximately 3,000 square meters of mulch for use by volunteer groups and community organisations. Approximately 900 large logs were salvaged for use as coarse woody debris in nature reserves and urban green spaces. This information establishes a baseline on urban wood reuse and the continued capture and reporting of this information will indicate whether there has been an uptake in utilisation. Any future sale of wood product will also be measurable through sales data and indicate an offset of the cost of managing the urban forest.

Next steps – Wood reuse action plan

Mulch by-product from the urban forest is well used by a variety of ACT Government agencies, community groups and not-for-profit organisations. This material goes back into the ground to support trees and plants in a closed loop cycle.

Solid wood by-product is used for a variety of landscape purposes; however, this resource is under-utilised. Opportunities exist to better utilise this resource and support the ACT's circular economy framework.

These next steps will enable greater use of by-product from the urban forest and will help meet the ACT's circular economy objectives.

What?	Why?	When?[2]
Develop a target species list	A target species list identifying known, valuable hard wood tree species in the ACT would help inform arboriculture crews about trees that required felling in a specific way to allow for future use.	By September 2025
Develop target species list harvesting guidelines and specifications	To ensure the highest value timber reuse options, arboriculture crews will need harvesting guidelines and specifications to ensure felled timber is an appropriate size for reuse and has not been damaged during felling.	By December 2025
Develop a tracking system for felled urban trees	Knowing the species and location of trees during their life and date of felling, significantly adds value (and a story) to the wood when reused. This will also enable the potential to maintain the connection between the community and their trees, through the reuse of processed timber within the community.	To be determined, funding pending A tracking system for felled urban trees would enhance the value of the wood but is not a critical element for urban wood reuse
Establish an arboriculture team training and awareness program	To ensure arboriculture crews are aware of target tree species and requirements to fell these trees.	By April 2026

[2] Timeframes for delivery will be dependent on continued resourcing.

Recruit a woodyard coordinator	A woodyard coordinator will ensure that timber resources in the woodyards are properly managed. This will include segregation and proper storage of valuable timber, and prevention of dumping and unauthorised removal of material.	Commenced.
Undertake a trial to process solid timber	A trial utilising external processing equipment will demonstrate it is possible to create high value timber products from felled trees.	Trial is underway and due for completion at the end of 2026
Explore investment options for timber drying racks and storage	Harvested timber requires appropriate storage while drying to ensure it is ready for reuse. This includes drying racks, undercover storage facilities and asset security. A wood drying kiln may also be beneficial to complete the drying process. This comes as an additional investment.	For consideration following trial to process solid timber, post 2026
Network and partner with not-for-profit organisations	The ACT has many existing not-for-profit organisations already processing and/or utilising wood products. Partnerships with these groups may provide an opportunity to share resources and support established groups that recognise the value of wood products.	Ongoing and as product becomes available
Investigate procurement options for timber products	As the processed wood products derived from public trees will hold a value, appropriate procurement options will need to be explored for their marketing and sale.	Commence June 2025

Attachment – A: Examples of wood reuse

Mulch

Above: Mulch (tub grindings) used at Telopea Park

Right: Mulch used to retain water and suppress weed growth around a new tree planting

Solid timber

Hardwood barrel signage at Haig Park – wood salvaged from Mitchell woodyard

Nature play at Haig Park – wood salvaged from Mitchell woodyard

Logs used for habitat at Namadgi National Park – logs salvaged from Curtin woodyard

Artwork and seating at Namarag Reserve – log salvaged from Curtin woodyard

Hollowed log attached to a tree trunk for bird nesting at Namarag Reserve

Nature play at Namarag Reserve

Seat made of reclaimed timber at Corroboree Park – salvaged Red gum

Timber slabs used as a landscape feature and for nature play at Telopea Park

Seat made from London Plane tree – ANU student project

Wood by-products available for sale at local markets

Hardwood planter boxes made of milled planks to support community gardens – photo courtesy of Treasuring Our Trees

Outdoor furniture and planter boxes at Glebe Park

Kiln dried Hardwood slabs – photo courtesy of Treasuring Our Trees

Cabinet making and joinery

Blazed timber slab used as signage – photo curtesy of Treasuring Our Trees

Small wood turning pieces from timber offcuts – photo curtesy of Treasuring Our Trees