# AGENDA

## **GOVERNANCE COMMITTEE MEETING**

14 May 2024



## LIVERPOOL CITY COUNCIL

You are hereby notified that a **Governance Committee Meeting** of Liverpool City Council will be held at **LIVERPOOL CIVIC PLACE**, **11.08 BOARDROOM WIRRIGA (GOANNA)**, **LEVEL 11**, **50 SCOTT STREET**, **LIVERPOOL NSW 2170** on **Tuesday**, **14 May 2024** commencing at 10.00am.

Please note this meeting is closed to the public. The minutes will be submitted to the next Council meeting.

If you have any enquiries, please contact Council and Executive Services on 8711 7746.

Jasobio

Jason Breton ACTING CHIEF EXECUTIVE OFFICER

#### **ORDER OF BUSINESS**

#### Opening

Apologies

#### **Declarations of Interest**

#### Public Forum

#### Infrastructure and Planning Committee

ITEM 01	Voluntary Planning Agreement Status Report - April 2024	1
ITEM 02	Development Assessment17	2
ITEM 03	Draft Tree Management Framework (Tree Policy, Tree Management	
	Strategy, and Tree Management Technical Guidelines)	3
ITEM 04	Liverpool Heritage Advisory Committee of 17 July 2023	4

#### **Budget Committee**

Reports to be determined at the Extraordinary Council Meeting - 14 May 2024

#### **Strategic Priorities Committee**

ITEM 05	IT Strategy Development	350	5
ITEM 06	Customer Experience Framework and Program Update	354	6
ITEM 07	NOM 01/NOM02 - 24 APRIL 2024 - Mayoral and Elected Officials		
	Photos Display & WW1 and WW2 Honour Boards	361	7

#### Strategic Performance Committee

ITEM 08	Legal Services Policy	363	8
ITEM 09	Service review program	378	9

#### **Presentations by Councillors**

Close

ITEM 01	Voluntary Planning Agreement Status Report -			
	April 2024			
Strategic Objective	Visionary, Leading, Responsible Demonstrate a high standard of transparency and accountability through a comprehensive governance framework			
File Ref	128468.2024			
Report By	Yee Lian - Contributions Planning Officer			
Approved By	Mark Hannan - Acting Director Planning & Compliance			

#### **EXECUTIVE SUMMARY**

The purpose of this Report is to provide a summary of activity associated with Voluntary Planning Agreements (VPAs), including offers under review, executed VPAs, land and monetary contributions.

#### RECOMMENDATION

That the Committee receives and notes this Report.

#### REPORT

Attachment 1 of this Report provides a status update of live Voluntary Planning Agreements (VPAs) up to 30 April 2024. The list currently includes:

- One (1) VPA Letter of Offer;
- Four (4) VPAs In-Draft and/or under Negotiation;
- 18 Executed VPAs (including four requesting to be revoked); and
- Six (6) completed VPAs.

#### FINANCIAL IMPLICATIONS

There are no financial implications relating to this recommendation.

#### GOVERNANCE COMMITTEE MEETING 14 MAY 2024 INFRASTRUCTURE AND PLANNING COMMITTEE REPORT

#### CONSIDERATIONS

Economic	There are no economic and financial considerations.
	Manage the environmental health of waterways.
<b>F</b> avironment	Manage air, water, noise and chemical pollution.
Environment	Protect, enhance and maintain areas of endangered ecological communities and high-quality bushland as part of an attractive mix of land uses.
Social	There are no social and cultural considerations.
	Provide information about Council's services, roles and decision- making processes.
Civic Leadership	Deliver services that are customer focused.
	Operate a well-developed governance system that demonstrates accountability, transparency and ethical conduct.
Legislative	Include any relevant legislation and section here.
	There are no legislative considerations relating to this Report.
Risk	There is no risk associated with this Report.

#### ATTACHMENTS

1. VPA Status Report to Council as at April 2024

Letter of (	Letter of Offer (1)								
REF	SUBURB	LOT / DP	LOCATION	APPLICATION	STATUS				
					Council is waiting for the proponent to submit a revised draft letter of offer incorporating Council's comments (RL 18.04.24).				
VPA-56	Pleasure Point	1/875804 2/817692	Lot 1 Heathcote Road, Pleasure Point Lot 2 Pleasure Point Road, Pleasure Point	PL-65/2023	<b>History</b> : This matter is still at Pre-DA stage. Council's comments on the revised VPA Letter of Offer sent to the proponent on 13 March. Proponent responded to Council comments and sought Council's assistance with confirming the ownership of a strip of land along the western boundary of the sit connecting Willowie Way to Lilly Pilli drive. Council's transport team responded to proponent's inquiry re management of crown land.				

Under Re	Under Review or Negotiation (4)						
REF	SUBURB	LOT / DP	LOCATION	APPLICATION	STATUS		
VPA-39	Edmondson Park	1-2/1204198; 62/1191356	Edmondson Park Town Centre (South)	Mod 4	<ul> <li>Council to discuss the review and completion of the existing draft VPA with Frasers in a future meeting. Scheduling the meeting is waiting Council's position on the location and specifications of the community Centre.</li> <li>History: Internal Council feedback/comments received on 27.03.24.</li> <li>CP team finalised an initial brief to acting manager city planning for internal discussion prior to meeting with Frasers.</li> <li>CP team to report project progress to the next governance meeting (RL - 18.04.24).</li> </ul>		
VPA-45	Edmondson Park	All land within Edmondson Park Town Centre (concept plan approval), excluding Frasers Land (refer to VPA 39) & Campbelltown LGA	Edmondson Park Town Centre (North)	Part 3A application	<ul> <li>Council to meet with DPHI/PDU and discuss Landcom's offer. This matter is waiting for the completion of infrastructure/funding gap analysis as part of the overall CP review to inform future discussion with DPHI/PDU.</li> <li>History: Landcom shared their revised version of the draft VPA with Council on 29 Feb 2024. Landcom made no changes to the previous version of their offer and did not consider the recommendations by Astrolab (council's independent reviewer) (RL 18.04.24)</li> </ul>		
VPA-49	Luddenham	Lot 3 DP 623799	275 Adams Road, Luddenham	SSD-10446	<ul> <li>Council's legal team finalised the draft VPA and it has been added to the agenda for the next Council meeting on 24.04.24 to seek Council's endorseme for the re-exhibition of the agreement.</li> <li>History: Proponent's and Council's lawyers agreed on extending the timing for the payment adjustment mechanism until 30.12.2027.</li> <li>Email request sent to the website update team on 15.04.24. Waiting Council resolution, Info Council Ref. 107172.2024. (RL - 18.04.24)</li> </ul>		
VPA-57	Bringelly	Lot 16 Sec 2 DP 2650	145 Mersey Road, Bringelly	DA-116/2022	<ul> <li>Legal services advised CP team on 03.04.24 that the s34 conference terminate and a court hearing is scheduled for 12.09.24 with an update to the court expected on 21.06.24. However, the proponent and Council can finalise the revised VPA if both agree on Council's recommendation to amend clause 5 rather than removing clause 7. This is waiting legal advice.</li> <li>History: Public exhibition finished on 09.03.24 and no submission received. Proponent requested the provision of securities be removed from the VPA considerin no works are proposed and monetary contributions to be paid prior to the issue of ar OC. (RL - 18.04.24)</li> </ul>		





Comple	Completed Planning Agreements (6)								
1	VPA-20	24 Bernera Road, Prestons	Status						
	Clause 5.1	\$84,129 in Monetary Contributions for the Intersection upgrade of Bernera Road, Yarrunga Street and Yato Road	Notice of Completion sent to proponent on 07.03.2024 (YL - 23.04.24)						
2	VPA-31	55 Yarrunga Street, Prestons							
	Clause 5.1	\$137,797 in Monetary Contributions for the Intersection upgrade of Bernera Road, Yarrunga Street and Yato Road	Notice of Completion sent to proponent on 07.03.2024 (YL - 23.04.24)						
3	VPA-32	420-446 Macquarie Street, Liverpool							
	Clause 6.1	Monetary Contributions towards restoration works to Collingwood House	Contributions spent on project 100740 - Collingwood House Restoration between 2015/16 and 2016/17. CP team reached of to project delivery team to provide an update on the matter (RL 22.04.24)						
4	VPA-44	5 Melito Court, Prestons							
	3	\$387,600.00 in Monetary Contributions for the Intersection upgrade of Bernera Road, Yarrunga Street and Yato Road	Notice of Completion sent to proponent on 04.12.2023 (YL – 23.04.24)						
5	VPA-46	14 Yarrunga Street, Prestons							
	3	\$85,000 in Monetary Contributions for the Intersection upgrade of Bernera Road, Yarrunga Street and Yato Road	Notice of Completion sent to proponent on 07.03.2024 (YL – 23.04.24)						
6	VPA-16	14 Yarrunga Street, Prestons							
	1	\$95,000 in Monetary Contributions toward the Liverpool Town Improvement Fund	Paid on 21 May 2015 under DA-920/2012 (YL – 24.04.24)						
2		\$5,000 in Monetary Contributions for Administration. Contribution towards administration of contributions including legal costs associated with the preparation, negotiation, execution and ongoing administration of this deed.	Paid on 21 May 2015 under DA-920/2012 (YL – 24.04.24)						



#### Executed Planning Agreements (18)

1	VPA-5	Lot 29 501 Cowpasture Road, Hinchinbrook	Status	Comments	Last Update
1	3.1.1	Monetary contribution towards district drainage	Completed		Monetary Contributions paid on 15 November 2023 (116710.2024)
2	3.1.2	Monetary Contribution and administration fee	Completed		Monetary Contributions paid on 15 November 2023 (116710.2024)
3	3.2.1	Removal of any waste and subsequent fill (related to the removal of the waste) to existing or otherwise approved finished ground level. Removal or other appropriate management of site contamination if any	In-Progress	Field work for contamination investigations with an expanded investigation area has occurred. Samples in lab, findings report to be prepared.	CP team requested proponent to provide updates. The proponent responded on 07.03.2024 confirming waste will be removed in April 2024. CP team to follow up with the proponent in early May 2024 (YL - 12.04.24)
4	3.2.2	Prepare the Vegetation Management Plan (that includes a staged program of works for, weed control, regeneration, and re-vegetation) for the Designated Land and obtain the approval of Council for the plan.	In-Progress	CP Team to follow up with City Environment team about any receipt of a VMP for the VPA	Contaminated Land team provided an update on 11.04.24 about their assessment of the site investigation report. Contaminated land team to provide an assessment of the proponent's site investigation report to enable land dedication (YL - 18.04.24)
5	3.2.3	Carry out the program of works for soil remediation, weed control, regeneration, and re-vegetation for all Designated Land as stipulated in the approved Vegetation Management Plan	In-Progress	CP Team to follow up with City Environment team about any receipt of a VMP for the VPA	Contaminated Land team provided an update on 11.04.24 about their assessment of the site investigation report. Contaminated land team to provide an assessment of the proponent's site investigation report to enable land dedication (YL - 18.04.24)
6	3.2.4	Maintenance works described in the VMP to optimise plant establishment and weed control	In-Progress	CP Team to follow up with City Environment team about any receipt of a VMP for the VPA	Contaminated Land team provided an update on 11.04.24 about their assessment of the site investigation report. Contaminated land team to provide an assessment of the proponent's site investigation report to enable land dedication (YL - 18.04.24)
7	3.2.5	Construction of drainage channel between the Cowpasture Road and Hinchinbrook Creek and to the Government Road stormwater detention basin to the South, varying between 15m and 40m width and at an average depth of 1m. In accordance with the drainage design approved as part of DA-926/2010.	In-Progress	Developer to provide WEA files to Council for final flood modelling assessment. Works as ex drawings had already been sent. Will follow up with engineers for models.	CP team requested the proponent to provide an update on 19.04.2024 (YL - 19.04.24)
8	3.3	Designated Land - Public Recreation Land	Not Started	Developer to carry out waste removal and site investigation for contamination prior to dedication. Rubbish removal to occur in April 2024	CP team to follow up proponent early May re rubbish removal. (YL - 12.04.24)



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2	VPA-8	Coopers Paddock, Warwick Farm			
9	3.1.1	Removal of any waste and subsequent fill (related to the removal of the waste) to existing or otherwise approved finished ground level. Removal and / or other appropriate management of site contamination in accordance with the Site Contamination Report.	Not Started	Site audit statement required. Awaiting Australian Turf Club (ATC)'s response	The CP Team informed the proponent that 2 out of 6 Bank Guarantees (BG are kept by records and 4 are not held by Council. To assist the proponent, Council can inform the bank to release the curren BGs once the proponent provides the new ones for replacement. Council is waiting for proponent's instructions (RL - 22.04.24)
10	3.1.2	Carry out the program of works and maintenance as specified in the Vegetation Management Plan approved by Council	Not Started	ATC to lodge a Modification application for DA-133/2020 to impose VMP.	CP team advised proponent to submit the MOD application on 01.11.23. CP team sent a follow up email on 23.04.2024. Waiting for Transport team t respond (YL – 23.04.24)
11	3.1.3	Carry out offsetting works within the Designated Land in accordance with the ecological report 'Ecological Constraints Report Proposed Rezoning Lot 1 DP 581034 Coopers Paddock Governor Macquarie Drive Warwick Farm' prepared by Travers Bushfire & Ecology and dated August 2011 and accepted by the NSW Office of the Environment and Heritage and the VMP approved by Council.	Not Started	Offsetting awaits completion of items 3.1.1 and 3.1.2.	This item is subject to the receipt of the revised VMP from the proponent. CP Team to organise a meeting with Steven Hodisi on 24.04.24 to discuss expected outcomes and comments about the revised VMP. (YL - 19.04.24)
12	3.1.4a	Governor Macquarie Drive to be widened to 2 lanes in each direction between the entrance to the Coopers Paddock Site and a new entrance into the ATC Site near the existing Old Tote Stand. The new carriage way is to be constructed on the southern side of the existing carriageway of Governor Macquarie Drive	Completed	Practical completion letter issued on 11.09.2018 (251888.2018)	
13	3.1.4b	<ul> <li>Provision of the following works in both carriageways of Governor Macquarie Drive:</li> <li>Lighting</li> <li>Kerb and Guttering</li> <li>Median Strip</li> </ul>	Completed	Practical completion letter issued on 11.09.2018 (251888.2018)	
14	3.1.4c	Subject to Council approval, construct 2 new intersections at the Coopers Paddock and Governor Macquarie Drive intersection and proposed car park entrance at Governor Macquarie Drive	Completed	Practical completion letter issued on 11.09.2018 (251888.2018)	
15	3.1. 5a	The construction of shared bike / pedestrian paths of a minimum width of 2.5 metres located adjacent to Governor Macquarie Drive on the northern side of the existing carriageway, to run the length from the existing cycle path near the William Long Bridge to the Hume Highway	In-Progress	This project is being overseen by Council's Traffic and Transport team	CP team sent a follow up email on 23.04.2024. Waiting for Transport team t respond (YL – 23.04.24)
16	3.1.5b	The construction of a shared bike / pedestrian path of a minimum width of 2.5m within the Industrial Land	Not Started	Subject to DA-133/2020	CP team sent a follow up email on 23.04.2024. Waiting for Transport team t respond (YL – 23.04.24)
17	3.1.5b	The construction of a shared bike / Pedestrian path of a minimum of 2.5 metres from Munday street to Warwick Farm Railway Station	Completed	Handed over to Council	
18	3.2a	Dedicated Land: That part of the Developer's Land south of Governor Macquarie Drive Coloured green and identified as 'Designated Land' and "RE1" and land coloured orange and identified as Environmental Land "E2" on the plan.	Not Started	Subject to completion of items 3.1.1, 3.1.2 and 3.1.3	Not triggered yet.
19	3.2b	Dedicated Land: That part of the Developer's Land immediately adjacent to Governor Macquarie Drive which is necessary to ensure that the road works to be carried out to Governor Macquarie Drive are within the dedicated road reservation and align with the zone boundaries at the time of the dedication of that land.	In-Progress	Land transfer being finalised by Council's Property team in consultation with the landowners.	Property Services responded on 11.04.2024 providing an update about the land transfer arrangements. It was also advised that a deed is being prepared betwee Council's and proponent's solicitors (YL - 11.04.24) CP Team sent a follow up email to Legal Services on 23.04.2024 seeking ar update about the land transfer. Waiting for Legal Services to respond (YL - 23.04.24)



3	VPA-9	New Brighton Golf Club, Brickmakers Drive, Moorebank	Status	Comments	Last Update
20	3.1a	Construction of a 2.5m shared pedestrian/bike path within the Georges River foreshore land to be dedicated to Council.	In progress	Developer to lodge a DA to Council for approval.	Developer informed Council that the DA is still in preparation. Expect submission to Council by end of April. <b>CP team to follow up early May with DA team</b> (YL - 09.04.24)
21	3.1b	Construction of a 2.5m shared pedestrian/bike path linking the Georges River foreshore land with Residential land along the northern boundary of Lot 103 DP 1070029 to Brickmakers Drive.	In progress	Developer to lodge a development application for the construction of the shared pedestrian/bike path	Developer informed Council that the DA is still in preparation. Expect submission to Council by end of April. <b>CP team to follow up early May with DA team</b> (YL - 09.04.24)
22	3.1c	Construction of a 2.5m shared pedestrian / bike network within the residential area.	In progress	Pathway completed according to aerials. Site inspection required by the CP Team and relevant teams to confirm if not already done.	Developer informed Council that the DA is still in preparation. Expect submission to Council by end of April. <b>CP team to follow up early May with DA team</b> (YL - 09.04.24)
23	3.2a	Preparation of a Vegetation Management Plan (VMP) to the satisfaction of Council that defines planting offsets required as a consequence of any possible clearing works.	In progress	Subject to status of item 3.1b The VMP will need to be submitted as part of their DA for the shared pedestrian/bike path.	Developer informed Council that the VMP is still in preparation. Expect submission to Council by end of April. <b>CP team to follow up early May with DA team</b> (YL - 09.04.24)
24	3.2b	Riparian Planting within the Public Recreation Land along the foreshore (in accordance with an approved Vegetation Management Plan) and adjacent to cycleway links and golf course land. This includes the allowance for potential vegetation offsetting.	In progress	Subject to status of item 3.1b This will need to be submitted as part of their DA for the shared pedestrian/bike path	Subject to the completion of the VMP (YL - 09.04.24)
25	3.2c	Construction of a perimeter fence around the basin located on the southern boundary of Lot 2210 DP1090818, the design of which must be approved by Council in writing	Completed	Handed over to Council	
26	3.2d	Landscaping and recreational facilities provided on Lot 1 within the Community Scheme established as part of the Development comprising community swimming pool, mixed use court, cabana and meeting place, seating, and BBQs	Completed	Handed over to Community scheme (via 88b titles)	
27	3.2e	Reconstruction of Cantello Reserve Dog Park within Cantello Reserve	Completed	Handed over to Council.	
28	3.3a	Construction of 8m wide access and easement to enable the public to traverse under the M5 Motorway. The design must be approved by Council in writing.	In Progress	Pathway completed but requires additional provisions such as line markings and wayfinding signage. Further site visit to be arranged by CP Team and relevant teams. Last site visit 18 October 2023	CP Team to organise a site visit with the proponent and relevant Council teams as soon as practicable.
29	3.4a	Installation of two (2) Gross Pollutant Traps (GTPs). The design must be approved by Council in writing	Completed	Handed over to Council	
30	3.4b	Construction of water quality control ponds. The design must be approved by Council in writing	Completed	Handed over to Council	
31	4	Land - Public Recreation - 40m wide strip of land running parallel to the Mean High-Water Mark of the nearest bank of the Georges River.	Not Started	Seeking Director's decision on memo about the management and ownership of contaminated foreshore land	CP team addressed the acting Manager City Planning comments in the dra memo. Waiting for acting manager to finalise the memo to ELT (YL - 22.04.24)



4	VPA-11	Georges Cove, 146 Newbridge Road, Moorebank (Tanlane)	Status	Comments	Last Update
32	1	Embellishment of Northern Island Section Designated Land	Not Started	Contributions Planning to follow up with the proponent on the status.	CP team sent an email to internal teams on 11.04.2024 seeking responses from each team (YL - 11.04.24) CP Team to follow up again on 24.04.2024
33	2	Embellishment of Southern Island Section Designated Land	Not Started	Contributions Planning to follow up with the proponent on the status.	CP team sent an email to internal teams on 11.04.2024 seeking responses from each team (YL - 11.04.24) CP Team to follow up again on 24.04.2024
34	3	Dedication of the Northern Island Section Designated Land	Not Started	Not triggered yet	Not triggered yet (YL - 11.04.24)
35	4	Dedication of the Southern Island Section Designated Land	Not Started	Not triggered yet	Not triggered yet (YL - 11.04.24)
36	5	Development of a Vegetation Management Plan	Not Started	Contributions Planning to follow up with the proponent on the status.	CP team sent an email to internal teams on 11.04.2024 seeking responses from each team (YL - 11.04.24) CP Team to follow up again on 24.04.2024
37	6	Completion of works described in the Vegetation Management Plan within the Northern Island Section Designated Land	Not Started	Subject to development of VMP	CP team sent an email to internal teams on 11.04.2024 seeking responses from each team (YL - 11.04.24) CP Team to follow up again on 24.04.2024
38	7	Completion of works described in the Vegetation Management Plan within the Southern Island Section Designated Land	Not Started	Subject to development of VMP	CP team sent an email to internal teams on 11.04.2024 seeking responses from each team (YL - 11.04.24) CP Team to follow up again on 24.04.2024
39	8	Conduct of maintenance works described in the Vegetation Management Plan and Maintenance Schedule with respect to the Northern Island Designated Land	Not Started	Subject to development of VMP	CP team sent an email to internal teams on 11.04.2024 seeking responses from each team (YL - 11.04.24) CP Team to follow up again on 24.04.2024
40	9	Conduct of maintenance works described in the Vegetation Management Plan and maintenance Schedule with respect to the Southern Island Designated Land	Not Started	Subject to development of VMP	CP team sent an email to internal teams on 11.04.2024 seeking responses from each team (YL - 11.04.24) CP Team to follow up again on 24.04.2024
41	10	Construction of "Bike/Pedestrian Path" through the Northern Island Section Designated Land as shown on the plans attached as Annexure 1 and marked as "D"	Not Started	Contributions Planning to follow up with the proponent on the status.	Land development responded on 08.04.24 advising no approvals have been issued and no works have commenced (YL - 11.04.24) CP Team review timing of delivery and contact the proponent to seek an update for the item's delivery. AFTER receiving internal comments.
42	11	Construction of "Bike/Pedestrian Path" through the Southern Island Section Designated Land as shown on the plans attached as Annexure 1 and marked as "D"	Not Started	Contributions Planning to follow up with the proponent on the status.	Land development responded on 08.04.24 advising no approvals have been issued and no works have commenced (YL - 11.04.24) CP Team review timing of delivery and contact the proponent to seek an update for the item's delivery. AFTER receiving internal comments.
43	12	Construction and dedication of Bike/Pedestrian Path Link to Brickmakers Drive as shown on the plan attached as Annexure 1 as marked as "H1"	In-Progress	Contributions Planning to follow up with the proponent on the status.	Land development responded on 08.04.24 advising works partially completed w subdivision works (YL - 11.04.24) CP Team to review work specifications and organise a site visit to inspect the works.
44	13	Construction and dedication of Bike/Pedestrian Path Link to from the edge of the R3 Land through the RE2 Land to the Designated Land as shown on the plan attached at Annexure 1 as marked as "H2"	Not Started	Contributions Planning to follow up with the proponent on the status.	Land development responded on 08.04.24 advising no approvals have been issued and no works have commenced (YL - 11.04.24) CP Team review timing of delivery and contact the proponent to seek an update for the item's delivery. AFTER receiving internal comments. (YL - 18.04.24)



45	14	Construction of passive recreation facilities on the Designated Land.	Not Started	Contributions Planning to confirm status with the proponent	Land development responded on 08.04.24 advising that they are not aware of these works (YL - 11.04.24) CP Team review timing of delivery and contact the proponent to seek an update for the item's delivery. AFTER receiving internal comments. (YL - 18.04.24)
46	15	Dedication of "Drainage Channel" will occur in three stages as illustrated by notations E1, E2 and E3 on Annexure 1 however all stages are subject to the Time for Completion noted in this row.	In-Progress	Acquisition and dedication status to be confirmed by Property Services. Construction of the road bridge is complete	Land development responded on 08.04.24 advising that Lot 19 was created as a drainage reserve and has yet to be dedicated to Council. E2 (YL - 11.04.24). CP Team to organise a meeting with Flood engineers and property team to discuss hand over parameters of the drainage reserve by 29.04.24 (YL- 18.04.24)
47	16	Acquisition and dedication of stratum lot comprising the road bridge over drainage channel, embankment and road to Brickmakers Driver as well as the completion of the construction of the road bridge within that stratum lot as shown on the plan attached as Annexure 1 and marked as "F"	In-Progress	Contributions Planning to follow up with the proponent on the status.	Land development responded on 08.04.24 advising the bridge is complete and awaiting handover to Council. (YL-11.04.24) CP Team to organise a meeting with transport and property team to discus hand over parameters of the bridge by 29.04.24 (YL-18.04.24)
48	17	Construction and dedication of "Pedestrian Access to Newbridge Road" more or less in the position on the plan attached as Annexure 1 marked as "G" and a pedestrian path within the public verge along the entire length of the Land frontage to Newbridge Road.	Not Started	Contributions Planning to follow up with the proponent on the status.	Land development responded on 08.04.24 advising that no works have been carried out. (YL-11.04.24) CP Team review timing of delivery and contact the proponent to seek an update for the item's delivery. AFTER receiving internal comments. (YL - 18.04.24)
49	18	Dedication of an easement over the Land for access for the purpose of allowing Council to undertake maintenance to the River Foreshore Land more or less in	Not Started	Contributions Planning to follow up with the proponent on the	CP Team review timing of delivery and contact the proponent to seek an update for the item's delivery. AFTER receiving internal comments. (YL-
		the position on the plan attached as Annexure 1 marked as "I".		status.	19.04.24)
5	VPA-12	the position on the plan attached as Annexure 1 marked as "I". 124 Newbridge Road, Moorebank	Status	status. Comments	19.04.24) Last Update
<b>5</b>	VPA-12 3.1a-c	the position on the plan attached as Annexure 1 marked as "I". <b>124 Newbridge Road, Moorebank</b> Embellishment of river foreshore land	Status Not Started	status. Comments Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement.	19.04.24)         Last Update         Strategic Planning to attend a meeting with the proponent to discuss matters relating to RZ-4/2017 and VPA-12.         Meeting was held 21 March, where the strategic planning team informed th proponent of CP team's comments on the VPA. Proponent is to get back to Council with a revised VPA (RL - 09.4.24).
5 50 51	VPA-12 3.1a-c 3.1d	the position on the plan attached as Annexure 1 marked as "I". <b>124 Newbridge Road, Moorebank</b> Embellishment of river foreshore land Dedicated of river foreshore land	Status Not Started Not Started	status. Comments Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement. Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement.	19.04.24)         Last Update         Strategic Planning to attend a meeting with the proponent to discuss matters relating to RZ-4/2017 and VPA-12.         Meeting was held 21 March, where the strategic planning team informed th proponent of CP team's comments on the VPA. Proponent is to get back to Council with a revised VPA (RL - 09.4.24) .         Waiting for the proponent to respond to strategic planning RFI.
5 50 51 52	VPA-12 3.1a-c 3.1d 3.2a	the position on the plan attached as Annexure 1 marked as "I". <b>124 Newbridge Road, Moorebank</b> Embellishment of river foreshore land Dedicated of river foreshore land Development of a Vegetation Management Plan (VMP) and offset Strategy	Status         Not Started         Not Started         Not Started	status. Comments Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement. Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement. Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement.	19.04.24)         Last Update         Strategic Planning to attend a meeting with the proponent to discuss matters relating to RZ-4/2017 and VPA-12.         Meeting was held 21 March, where the strategic planning team informed the proponent of CP team's comments on the VPA. Proponent is to get back to Council with a revised VPA (RL - 09.4.24).         Waiting for the proponent to respond to strategic planning RFI.         Waiting for the proponent to respond to strategic planning RFI.
5 50 51 52 53	VPA-12 3.1a-c 3.1d 3.2a 3.2b	the position on the plan attached as Annexure 1 marked as "I". 124 Newbridge Road, Moorebank Embellishment of river foreshore land Dedicated of river foreshore land Development of a Vegetation Management Plan (VMP) and offset Strategy Completion of works described in the VMP	Status         Not Started         Not Started         Not Started         Not Started	status. Comments Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement. Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement. Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement. Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement. Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement.	19.04.24)         Last Update         Strategic Planning to attend a meeting with the proponent to discuss matters relating to RZ-4/2017 and VPA-12.         Meeting was held 21 March, where the strategic planning team informed th proponent of CP team's comments on the VPA. Proponent is to get back to Council with a revised VPA (RL - 09.4.24) .         Waiting for the proponent to respond to strategic planning RFI.         Waiting for the proponent to respond to strategic planning RFI.         Waiting for the proponent to respond to strategic planning RFI.
5 50 51 52 53 54	VPA-12 3.1a-c 3.1d 3.2a 3.2b 3.2c	the position on the plan attached as Annexure 1 marked as " ". <b>124 Newbridge Road, Moorebank</b> Embellishment of river foreshore land Dedicated of river foreshore land Development of a Vegetation Management Plan (VMP) and offset Strategy Completion of works described in the VMP Conduct of maintenance works described in the VMP	Status         Not Started         Not Started         Not Started         Not Started         Not Started         Not Started	status. Comments Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement. Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement. Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement. Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement. Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement. Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement.	19.04.24)         Last Update         Strategic Planning to attend a meeting with the proponent to discuss matters relating to RZ-4/2017 and VPA-12.         Meeting was held 21 March, where the strategic planning team informed th proponent of CP team's comments on the VPA. Proponent is to get back to Council with a revised VPA (RL - 09.4.24) .         Waiting for the proponent to respond to strategic planning RFI.         Waiting for the proponent to respond to strategic planning RFI.         Waiting for the proponent to respond to strategic planning RFI.         Waiting for the proponent to respond to strategic planning RFI.         Waiting for the proponent to respond to strategic planning RFI.         Waiting for the proponent to respond to strategic planning RFI.         Waiting for the proponent to respond to strategic planning RFI.

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				the existing, executed planning agreement.	
56	3.3d	Construction of pedestrian footpath along northern boundary of site within Newbridge Road verge - RE2 Private Recreation	Not Started	Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement.	Waiting for the proponent to respond to strategic planning RFI.
57	3.3e	Construction of pedestrian footpath along northern boundary of site within Newbridge Road verge - B6 Enterprise Corridor	Not Started	Proponent to hold meeting with Council and clarify their intent of the existing, executed planning agreement.	Waiting for the proponent to respond to strategic planning RFI.
6	VPA-17	220-230 Northumberland Street, Liverpool	Status	Comments	Last Update
58	5	Monetary Contribution	Not Started	Not triggered yet. Monetary Contributions to be paid prior to issuing any construction certificate.	CP team sent an email to proponent on 21.03.24 to clarify details about the registration of the VPA on title and removal of the caveat. <b>Proponent hasn't responded yet.</b>
7	VPA-18	Liverpool Mega Centa (The Grove) 10 Orange Grove Road, Warwick Farm	Status	Comments	Last Update
59	Clause 6	Monetary Contributions	Not Started	To be paid prior to the first occupation certificate	Not triggered yet. Council met with ARYZTA (Neighbours to Gazcorp) to discuss Homepride Avenue land issue. Council to review their offer and respond by 10.05 (RL - 24.04.24)
60	4.1	Roadworks including the rehabilitation of the road surface and construction of a pedestrian access on the Homepride Avenue	Not Started	DA-416/2021 approved for VPA roadworks. Developer to prepare and submit construction drawings towards a Construction Certificate	Waiting for proponent to start works (YL – 24.04.24)
61	4.2	RMS Roadworks - Orange Grove Road / Viscount Place Intersection	Not Started	DA-416/2021 approved for VPA roadworks. Developer to prepare and submit construction drawings towards a Construction Certificate	Waiting for proponent to start works (YL – 24.04.24)
62	4.3	RMS Roadworks - Hume Highway / Homepride Avenue Intersection	Not Started	DA-416/2021 approved for VPA roadworks. Developer to prepare and submit construction drawings towards a Construction Certificate	Waiting for proponent to start works (YL – 24.04.24)
8	VPA-19	20 Shepherd Street, Liverpool	Status	Comments	Last Update
63	3.1	Transport Service - Establish and operate a publicly accessible shuttle bus service that connects the Development to the Liverpool CBD	Not Started	Action taken to commence shuttle bus	CP team sent an email to other Council teams on 20.03.2024 seeking updates.
64	3.2	Bike Share Pods	Not Started	CP Team awaiting internal staff comments	CP team followed up with John Lac via email on 19.04.2024. Waiting for an update. (YL - 19.04.24)
65	3.3	Publicly accessible car share spaces	Not Started	CP Team awaiting internal staff comments	CP team followed up with John Lac via email on 19.04.2024. Waiting for an update. (YL - 19.04.24)
66	3.4	Woodbrook Road pedestrian and Cycle underpass - TfNSW is now carrying out these works - Council has accepted a monetary contribution of \$71,825 ex GST in lieu of these works	Not Started	Work program under discussion between Council major project team and developer – contribution payment being confirmed by Finance team.	CP team followed up with John Lac via email on 19.04.2024. Waiting for an update. (YL - 19.04.24)
67	3.5	Monetary Contribution - Local Traffic Infrastructure Contribution	Completed	\$636,000 paid in October 2019 (Refer to CM Reference: 228015.2022 & 85679.2023)	



68	3.6	Monetary Contribution - Regional Traffic Infrastructure Contribution	Completed	\$1,060,000 (Part of \$2.12 Million) paid in June 2019 (Refer to CM Reference: 149772.2023)	
69	3.7	Bank Stabilisation Works	In-Progress	Work program under discussion between Council major project team and developer	CP team followed up with John Lac via email on 19.04.2024. Waiting for an update. (YL - 19.04.24)
70	3.8	Riverwalk Works	In-Progress	Work program under discussion between Council major project team and developer	CP team followed up with John Lac via email on 19.04.2024. Waiting for an update. (YL - 19.04.24)
71	3.9	Pedestrian and Cycle Pathway upgrade through Lighthorse Park to Newbridge Road - LCC accepts completion of works except for the final portion of the path adjacent to Lighthorse Park. Council accepted a monetary contribution of \$310,334 ex GST in lieu of these works	Not Started	Work program under discussion between Council major project team and developer – contribution payment being confirmed by Finance team.	CP team followed up with John Lac via email on 19.04.2024. Waiting for an update. (YL - 19.04.24)
72	3.1	Rehabilitation of riparian zone - Lighthorse Park	Not Started	Work program under discussion between Council major project team and developer	CP team followed up with John Lac via email on 19.04.2024. Waiting for an update. (YL - 19.04.24)
73	3.11	Monetary Contribution - Open Space Contribution	Completed	\$1,060,000 (Part of \$2.12 Million) paid in June 2019 (Refer to CM Reference: 149772.2023)	
9	VPA-33	25, 29 & 35 Scott Street, Liverpool	Status	Comments	Last Update
74	Clause 6	Monetary Contribution to Council to facilitate acquisition of land known as 37 Scott Street, Liverpool (The Laneway Land) for the purposes of a public laneway for pedestrian access by the Council.	Not Started	Finance team to confirm payment of monetary contributions	CP team to finalise audit of payments received from the proponent by 30.04.24 (YL - 24.04.24)
10	VPA-36	4-8 Hoxton Park Road, Liverpool	Status	Comments	Last Update
75	3	Provision of Affordable Housing Lots	Not Started	Developer to lodge DA	CP team followed up the Developer regarding overdue payment of moneta contributions on 23.04.24.
76	4	Monetary Contribution	In-Progress	Monetary Contributions to be paid within 60 days of the instrument being made. CP Team to follow up with Strategic Planning to confirm the dates of the Instrument Change for 4-8 Hoxton Park Road, Liverpool	CP team followed up the Developer regarding overdue payment of moneta contributions on 23.04.24.
11	VPA-37	Middleton Grange Town Centre	Status	Comments	Last Update
77	4.B1	Dedication of New Park 2 to Council	Not Started		CP team responded to legal services inquiry concerning changes to bond requirements in the VPA as a result of early provision of roads. CP team to respond to the proponent's lawyer letter to the CEO concerning the same issue by 26.04.24. (RL - 24.04.24)
78	4.B2	Embellishment of New Park 2	In-Progress	Site preparation works commenced in accordance with DA-64/2007 and its associated modifications.	CP team is waiting further updates from proponent/other council teams when th works are completed
1 -			-	-	
79	4.C1	Construction of a signalised intersection at Main St and Flynn Ave and the intersection for the new proposed access lane and Flynn Avenue	In-Progress	Site preparation works commenced in accordance with DA-64/2007 and its associated modifications.	CP team responded to legal services question re. the need for any changes to bond requirements as a result of early provision of roads on 13.03.24.



80	4.C2	Construction of a roundabout at Southern Cross Avenue and Main Street	In-Progress	Site preparation works commenced in accordance with DA-64/2007 and its associated modifications. CP team responded to legal services question re. the need for any chan- bond requirements as a result of early provision of roads on 13.03.24.	
81	4.C3	Construction of a T-intersection at Southern Cross Avenue and Middleton Drive	In-Progress	Site preparation works commenced in accordance with DA-64/2007 and its associated modifications.	CP team responded to legal services question re. the need for any changes to bond requirements as a result of early provision of roads on 13.03.24.
82	4.C4	Construction of a T-intersection at Southern Cross Avenue and Bravo Avenue	In-Progress	Site preparation works commenced in accordance with DA-64/2007 and its associated modifications.	CP team responded to legal services question re. the need for any changes to bond requirements as a result of early provision of roads on 13.03.24.
83	4.D	Construction of an upgrade to Cowpasture Road intersection, Flynn Avenue from Qantas Boulevard to Ulm Street as a widened 4 lane road within the existing road reserve	In-Progress	Site preparation works commenced in accordance with DA-64/2007 and its associated modifications.	CP team responded to legal services question re. the need for any changes to bond requirements as a result of early provision of roads on 13.03.24.
84	4.E	Construction of a road upgrade and services for Southern Cross Avenue to a standard comparable to the existing Southern Cross Drive between the western boundary of the land to the Middleton Grange Primary School	In-Progress	Site preparation works commenced in accordance with DA-64/2007 and its associated modifications.	CP team responded to legal services question re. the need for any changes to bond requirements as a result of early provision of roads on 13.03.24.
85	4.F	Construction of culvert, drainage and shared road works wholly within Lot 102 DP 1128111 – Public Reserve	In-Progress	Site preparation works commenced in accordance with DA-64/2007 and its associated modifications.	CP team responded to legal services question re. the need for any changes to bond requirements as a result of early provision of roads on 13.03.24.
86	4.H	Monetary Contribution	Not Started	Not triggered until the Developer applies for an Occupation Certificate for their non-residential development.	CP team responded to legal services question re. the need for any changes to bond requirements as a result of early provision of roads on 13.03.24.
12	VPA-40	28 Yarrunga Street, Prestons	Status	Comments	Last Update
87	3	Monetary Contribution	Not Started	CP Team awaiting proponent's response	CP team followed up on 19.04.24 with an email to the proponent. Waiting for a current status update. (YL - 19.04.24)
13	VPA-42	1370 Camden Valley Way, Leppington	Status	Comments	Last Update
88	4.1	Maintenance Works required to maintain and keep in good repair the Acquisition Land, and any improvements on it, prior to its acquisition by Council	Not Started	CP Team awaiting proponent's response	CP team followed up on 19.04.24 with an email to the proponent. Waiting for a current status update. (YL - 19.04.24)
89	4.2	Registration of Positive Covenant on the title of the Acquisition Land to provide for public use and access of the Acquisition Land and to ensure the Developer carries out the Maintenance	Not Started	CP Team awaiting proponent's response	CP team followed up on 19.04.24 with an email to the proponent. Waiting for a current status update. (YL - 19.04.24)
90	5.1	Social Court	Not Started	CP Team awaiting proponent's response	CP team followed up on 19.04.24 with an email to the proponent. Waiting for a current status update. (YL - 19.04.24) $$
91	5.2	Walking Loop	Not Started	CP Team awaiting proponent's response	CP team followed up on 19.04.24 with an email to the proponent. Waiting for a current status update. (YL - 19.04.24)
92	5.3	Link across Riparian corridor (Boardwalk / Bridge)	Not Started	CP Team awaiting proponent's response	CP team followed up on 19.04.24 with an email to the proponent. Waiting for a current status update. (YL - 19.04.24)
93	5.4	Pedestrian Crossing	Not Started	CP Team awaiting proponent's response	CP team followed up on 19.04.24 with an email to the proponent. Waiting for a current status update. (YL - 19.04.24)
14	VPA-55	100 Southern Cross Avenue, Middleton Grange	Status	Comments	Last Update
				CP Team reviewing VPA and	CP team finalised the audit of payments received from the proponent and

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15	VPA-10	90 Flynn Avenue, Middleton Grange	Status	Comments	Last Update
	6	Monetary contribution	To be revoked	Requesting VPA to be revoked	CP Team sent Memo to Acting Manger City Planning on 11.04.2024 for ELT consideration
16	VPA-15	75 Flynn Avenue, Middleton Grange	Status	Comments	Last Update
	6	Monetary Contribution	To be revoked	Requesting VPA to be revoked	CP Team sent Memo to Acting Manger City Planning on 11.04.2024 for ELT consideration
17	VPA-34	85 Flynn Avenue, Middleton Grange	Status	Comments	Last Update
	6	Monetary Contribution	To be revoked	Requesting VPA to be revoked	CP Team sent Memo to Acting Manger City Planning on 11.04.2024 for ELT consideration
18	VPA-54	80 Flynn Avenue, Middleton Grange	Status	Comments	Last Update
	1	Monetary Contribution	To be revoked	Requesting VPA to be revoked	CP Team sent Memo to Acting Manger City Planning on 11.04.2024 for ELT consideration



#### GOVERNANCE COMMITTEE MEETING 14 MAY 2024 INFRASTRUCTURE AND PLANNING COMMITTEE REPORT

ITEM 02	Development Assessment		
	1		
	Liveable, Sustainable, Resilient		
Strategic Objective	Deliver effective and efficient planning and high-quality design to provide best outcomes for a growing city		
File Ref	129008.2024		
Report By	William Attard - Manager Development Assessment		
Approved By	Lina Kakish - Director Planning & Compliance		

#### **EXECUTIVE SUMMARY**

This report is prepared to table a snapshot of key Development Assessment (DA) statistics.

#### RECOMMENDATION

That the Committee receives and notes the Development Assessment report.

#### REPORT

The following key Development Assessment (DA) statistics are provided:

#### **Development Applications and Class 1 Appeals**

Period of Development Assessment Statistics (April 2024)				
Outstanding DAs and Appeals – 31 March 2024 291 DAs / 39 Appeals				
Outstanding Referrals – 31 March 2024	201 Referrals			
Planning Application Numbers (PANs) – April 2024				
- PANs Received	132 PANs			
- PANs Lodged / Returned	79 / 81 PANs			
Referrals Issued / Completed – April 2024	335 / 312 Referrals			
Development Applications (DAs) – April 2024				
- DAs Approved	51 DAs			
- DAs Refused	12 DAs			
- DAs Withdrawn	4 DAs			
Class 1 Appeals (Appeals) – April 2024				
- Appeals Lodged - Deemed Refusal / Council Determination	0 / 0 Appeals			
- Appeals Upheld - s34 Agreement / Hearing	3 / 0 Appeals			
- Appeals Dismissed / Terminated	0 / 0 Appeals			
- Appeals Withdrawn	0 Appeals			
Outstanding DAs and Appeals – 30 April 2024 286 DAs / 36 Appeals				
Outstanding Referrals – 30 April 2024	218 Referrals			

#### GOVERNANCE COMMITTEE MEETING 14 MAY 2024 INFRASTRUCTURE AND PLANNING COMMITTEE REPORT

Development Application (DA) Determination Statistics (April 2024)			
DAs Approved 51 DAs			
- Total Capital Investment Value (CIV) (\$)	\$29.6M CIV		
- New Lots Approved	34 Lots		
- New Homes Approved	45 Homes		
- Contribution Fees Raised (\$)	\$3.5M Contributions		
DA Fees Released from Trust (\$) – All Determinations	\$179k Fees		
Average Determination Timeframe			
- Current Financial Year	242 Days		
- Month Including / Excluding Stop the Clock – April 2024	184 / 183 Days		

#### Development Assessment (DA) Team Vacancy (Technical Officers Only)

Position	Positions	Vacancy
Principal Planner	1	0
Senior DA Planners	8	1 (Under Recruitment) 1 (Started 15/04/2024)
Senior Planning Advisory Officers	3	1 (Under Recruitment) 1 (Started 29/04/2024)
DA Planners	17	0
Student Planners	4	1
Duty Officers	2	0

#### **FINANCIAL IMPLICATIONS**

There are no financial implications relating to this recommendation.

#### CONSIDERATIONS

Economic	There are no economic and financial considerations.
Environment	There are no environmental and sustainability considerations.
Social	There are no social and cultural considerations.
Civic Leadership	Undertake communication practices with the community and stakeholders across a range of media. Provide information about Council's services, roles and decision making processes.
Legislative	There are no legislative considerations relating to this report.
Risk	There is no risk associated with this report.



#### ATTACHMENTS

Nil

	Draft Tree Management Framework (Tree Policy,
ITEM 03	Tree Management Strategy, and Tree
	Management Technical Guidelines)

Strategic Objective	Liveable, Sustainable, Resilient Deliver and advocate for a sustainable, cool and green city
File Ref	132419.2024
Report By	Ariz Ashraf - Acting Coordinator City Design & Public Domain
Approved By	Mark Hannan - Acting Director Planning & Compliance

#### **EXECUTIVE SUMMARY**

This Report has been prepared to inform Council of the Draft Tree Management Framework and seeks endorsement to publicly exhibit for Framework. The three (3) Tree Management Framework documents – Tree Policy, Tree Management Strategy and Tree Management Technical Guidelines – will replace Council's existing Tree Management Policy (2016).

Currently, the Liverpool LGA has an average tree canopy coverage of approximately 23%, with 37 of the 43 suburbs having less than the average and two thirds having below 15%.

When compared to the 33 other Local Government Areas (LGA) across Greater Sydney, the Liverpool LGA is placed 17th. However, large expanses of natural and rural areas like the Holsworthy Barracks (at 62% canopy cover) skew the data. Excluding the Holsworthy Barracks, the Liverpool LGA's estimated average canopy coverage is much lower at around 15% which would see Liverpool's ranking drop from 17<sup>th</sup> to 29<sup>th</sup> when compared to other Greater Sydney Councils

As such, the Liverpool LGA (and Western Sydney in general) experiences higher temperatures than most other urban areas in Sydney and is subject to the impacts of the urban heat island effect, which negatively influences the community and environment. The increasing temperatures, and limited tree canopy cover, is placing increasing importance on trees and their role in our community and the urban environment.

As a targeted growth centre, the Liverpool LGA is set to increase significantly in population and density over the coming decades. Higher density living comes with many challenges and impacts on our health and wellbeing. A thriving urban forest of street trees, park trees and private trees, can help counter many of these challenges and better prepare Liverpool for a warmer future.

Council's Tree Management Framework is a major step forward in reinforcing our commitment for a sustainable, cool, and green city by establishing a robust strategic and procedural

framework for the installation, protection, management, and maintenance of all trees within the Liverpool LGA.

The Tree Policy, Tree Management Strategy and Tree Management Technical Guidelines have been developed in consultation with multiple internal teams across Council, that are directly involved in the planning, implementation, maintenance, protection, management, approvals and/or enforcement of tree-related matters across the Liverpool LGA.

#### RECOMMENDATION

That the Committee:

- 1. Notes and receives this Report;
- 2. Endorses the Draft Tree Management Framework documents (Tree Policy, Tree Management Strategy and Tree Management Technical Guidelines) for public exhibition for a minimum period of 28 days in line with the Liverpool Community Participation Plan.
- 3. Notes that a Final Report will be brought back to Council post-public exhibition summarising submissions received, and seeking Council endorsement on a Final Tree Management Framework.

#### REPORT

#### Background

Endorsed in 2016, the current Tree Management Policy (Policy) was intended to maximise and promote the preservation of existing trees within Liverpool and provide procedures to guide the management of trees on both public and private land. However, the Policy alone struggles to:

- encompass the complexity of tree-related issues faced by Council;
- align with Council's broader strategic vision;
- establish specific strategic targets;
- meet current NSW Government objectives/initiatives;
- fully realise the value and benefits of trees within the community; and
- provide best practice guidelines for the installation, protection, management, and maintenance of trees throughout the Liverpool LGA.

As such, the opportunity to strengthen Council's tree management capabilities was identified alongside the NSW Government's Urban Greening initiatives, by reinvigorating Council's Tree Management Framework to encompass all activities related to the management of trees across the Liverpool LGA.

#### Draft Tree Management Framework (TMF)

The Tree Policy, Tree Management Strategy and Tree Management Technical Guidelines, will collectively form Council's Draft Tree Management Framework that will inform and guide all relevant tree-related matters and activities across the Liverpool LGA.

#### Draft Tree Policy (TP)

The Draft Policy establishes the overarching purpose, strategic framework, legislative requirements, scope and objectives for the implementation and enforcement of Councils' tree management responsibilities across the Liverpool LGA. The Draft Policy includes the identification of various objectives under the following five (5) core topics:

- 1. Tree Protection and Preservation;
- 2. Tree Planting and Species Selection;
- 3. Tree Maintenance and Removal;
- 4. Risk and Asset Management for Trees; and
- 5. Community Consultation and Involvement.

#### **Draft Tree Management Strategy (TMS)**

The Strategy, assesses our tree assets, analyses internal and external factors affecting the management of trees, and develops strategic directions. These directions feed into respective actions to guide Council in the realisation of our core goals, being:

- To establish best practice standards and processes for mitigating the effects of climate change and urban heat, through increased and improved tree canopy;
- To highlight the importance of canopy cover in creating a healthy and more liveable and resilient urban environment;
- To increase the diversity of trees within our urban areas while still selecting trees that are suitable for the local conditions and future climate;
- To improve the health and longevity of our trees;
- To improve the soil and ground conditions to enable trees to grow successfully;
- To identify opportunities to maintain and increase canopy cover;
- To improve our urban ecology; and
- As a tool to obtain funding for tree planting initiatives.

The ten (10) Strategic Directions included within the Draft TMS include:

- 1. Manage Trees as Assets
- 2. Increase Canopy Cover
- 3. Best Practice Management
- 4. Manage Tree Risks
- 5. Link the Green and Blue
- 6. Promote Private Trees
- 7. Build Capacity

- 8. Community Engagement
- 9. Manage Development Impacts
- 10. Policy Alignment

#### Draft Tree Management Technical Guidelines (TMTG)

The Tree Management Technical Guidelines is a vital part of the Framework, delivering the practical and detailed guidance and procedures for carrying out all tree-related management decisions including requirements for tree-related design, selection, and installation, as well as procedures for the assessment, management, and maintenance of our trees. The Draft TMTG will be an critical tool used by Council staff, land managers, contractors, the community, and developers for the management of trees across the Liverpool LGA.

The Draft TMTG specifically provides directions and standards for managing trees and treerelated requests, actions and standards required for the removal, pruning and planting trees on Council land, and a standardised approach to ensure uniformity and consistency in the maintenance and management of trees on Council land. The detailed sections of the Draft TMTG cover Tree Preservation, Tree Planting and Selection, and Tree Maintenance, as well as standard drawings and specifications to guide the practical implementation of tree plantings on both public and private land across the Liverpool LGA.

#### Funding

Implementation of the Tree Management Framework will require additional resources to achieve the Framework goals and objectives once endorsed. Appropriate funding, both recurrent and one-off capital injections, will need to be provided as part of a resourcing strategy within Council's Long-term Financial Plan. The project-related actions within the Framework are proposed to be funded from various sources, including the following:

- Planning Proposals (PP), Development Assessment (DA) Applications and Voluntary Planning Agreements (VPAs);
- Contributions;
- Grant funding;
- The Western Sydney City Deal;
- Council funding (including capital works projects and recurring maintenance); and
- Corporate sponsorships or philanthropic project contributions.

#### **FINANCIAL IMPLICATIONS**

As this Report is seeking endorsement for public exhibition only, there are no direct financial implications relating to the recommendations.

#### GOVERNANCE COMMITTEE MEETING 14 MAY 2024 INFRASTRUCTURE AND PLANNING COMMITTEE REPORT

#### CONSIDERATIONS

Economic	Facilitate economic development.
	Utilise the Western Sydney City Deal agreement to enhance the liveability and environment of the LGA.
	Manage air, water, noise and chemical pollution.
Environment	Protect, enhance and maintain areas of endangered ecological communities and high quality bushland as part of an attractive mix of land uses.
	Raise community awareness and support action in relation to environmental issues.
Social	Preserve and maintain heritage, both landscape and cultural as urban development takes place.
Civic Leadership	Act as an environmental leader in the community.
	Foster neighbourhood pride and a sense of responsibility.
	Actively advocate for federal and state government support, funding and services.
Legislative	Council's legislative requirement around trees, tree related risks and tree management procedures.
Risk	The risk is deemed to be low.
	The risk is considered within Council's risk appetite.

#### ATTACHMENTS

- 1. Draft Tree Policy May 2024
- 2. TMP Adopted by Council 2016 May 2024 Track Changes
- 3. Draft LCC Tree Management Strategy May 2024
- 4. Draft LCC Tree Management Technical Guidelines May 2024



### TREE POLICY

Adopted: (XXXX 2024)

TRIM (XXXXX.2024)



#### TREE POLICY

DIRECTORATE:	Planning & Compliance
BUSINESS UNIT:	City Design & Public Domain

#### 1. PURPOSE

The purpose of this Policy is to:

- 1.1 Address the tree related issues faced by Liverpool City Council (Council);
- 1.2 Establish *Council's* commitment and future strategic framework for the installation, protection, management, and maintenance of all *Protected Trees* located within the *Liverpool LGA* (Local Government Area);
- 1.3 Ensure the overarching *Tree Framework* (i.e., Tree Policy, Tree Management Strategy and Tree Management Technical Guidelines) is consistent with industry best practice and the priorities of *Council*, the NSW Government and the Community.
- 1.4 Acknowledge all *Protected Trees* on *Public Land* as public assets requiring ongoing protection, management, and enforcement;
- 1.5 Recognise *Trees* on *Private Land* as intergenerational resources that provide significant value to the community and warrant recognition, education, augmentation and conservation;
- 1.6 Acknowledge the need to increase *Tree* and *Tree Canopy* coverage throughout the LGA to proactively combat urban heat and climate change;
- 1.7 Strengthen *Council's* commitment to the creation of a healthy, inclusive, and engaging city and improve health and wellbeing, environmental and amenity outcomes for the community; and
- 1.8 Guide consistent and practical procedures for the installation, protection, management and maintenance of all *Protected Trees* within the *Liverpool LGA*, to the benefit of *Council* staff, residents, property owners, developers, other managing authorities and the environment.

In addition to the Liverpool Development Control Plan, the Tree Policy is one of three separate documents (i.e., *Tree Framework*) used to proactively manage *Trees* within the *Liverpool LGA*. The relationship between the *Tree Framework* documents is illustrated in Attachment A, the *Tree Management Strategy* and *Tree Management Technical Guidelines*.

#### 2. DEFINITIONS

Approval	Any <i>Tree Related Works</i> proposal on <i>Public Land</i> and/or <i>Private Land</i> that has:
	A Tree Removal Permit; or
	<ul> <li>Consent from the Native Vegetational Panel under Part 2.4 of the Biodiversity &amp; Conservation SEPP; or</li> </ul>
	Development Consent; or
	Complying Development Consent.
Consultant Arborist	A professional in the practice of arboriculture, that holds an Australian Qualification Framework (AQF) Level 5, Diploma of Horticulture (Arboriculture).
Edible Fruit Tree	A woody perennial plant that is commonly accepted as being grown for edible fruits and nuts such as Lemon, Orange, Plums, Peach, Nectarines, Apple, Persimmon, Quince, Avocado etc.
Establishment period	The twenty-four (24) month period it takes for a newly planted woody perennial plant to establish and survive.
Council	Liverpool City Council (LCC).
Public Land	All land owned and/or administered by <i>Council</i> for public or non-public use.
Private Land	All land owned and administered privately by agencies, individuals, or authorities for public or non-public use.
LDCP	Liverpool Development Control Plan 2008.
Liverpool LGA	Liverpool Local Government Area.
LLEP	Liverpool Local Environment Plan 2008.
Lopping	The outdated and improper practice of cutting <i>Tree</i> branches or stems for directional growth and/or the removal of dead or dying parts, generally between unions or internodes and leaving stubs attached.
Native Vegetation Panel	An independent body established under Part 5A, Division 6 of the Local Land Services Act 2013, that has the function of objectively determining applications to clear native vegetation within NSW.
Natural Processes	Relating to leaves, twigs, small branches, flowers, pollen, fruit/seed drops, fauna, bird or bat droppings.

Practising Arborist	A professional who undertakes <i>Tree Related Works</i> .
Protected Tree	A woody perennial plant requiring <i>Approval</i> for <i>Tree Related Works</i> , is either:
	<ol> <li>A woody perennial plant on <i>Private Land</i> that meets Councils definition of a <i>Tree</i>, and not listed as an exempt species in Council's <i>Tree Management</i> <i>Technical Guidelines</i>; or</li> </ol>
	2. A woody perennial plant on <i>Public Land</i> (irrespective of size or species).
Pruning	To cut off living branches or roots (or portions of branches or roots) for specific outcomes (e.g., to reshaped or improve health) in accordance with accepted techniques contained within AS4373 Pruning of Amenity Trees (e.g., crown lifting, thinning, cleaning, and reduction).
Ringbarking	To cut through the bark and sapwood of the <i>Tree</i> , to disrupt the movement of water and nutrients between the roots and leaves and upper portions of the <i>Tree</i> , normally killing the <i>Tree</i> .
Removal	To undertake either of the following:
	<ol> <li>Completely cutting a <i>Tree</i> to the ground, taking away all limbs and the trunk; or</li> </ol>
	<ol> <li>Taking any action that would lead to the death of a <i>Tree</i> or cause permanent damage that may compromise <i>Tree</i> health and stability.</li> </ol>
Significant Tree	Any <i>Tree</i> that has been identified as having substantial value in a <i>Tree Report</i> (i.e., Arboricultural Assessment) by a <i>Consultant Arborist</i> or within the Legislative Requirements outlined in this Policy. This includes a heritage listed <i>Tree</i> or any <i>Tree</i> that has been included in <i>Council's Significant Tree Register</i> or the National Trusts of Australia Register of Significant Trees.
Significant Tree Register	Identifies <i>Trees</i> of environmental, cultural, heritage, historical or social significance within the <i>Liverpool</i> <i>LGA</i> , which affords extraordinary protection and preservation measures for consideration when being assessed for any potential <i>Tree Related Works</i> .
Topping	Reducing the height of a <i>Tree</i> through the inappropriate practice of lopping typically including the amputation of the top portion of a <i>Tree</i> including a section of its trunk.

TMS	Tree Management Strategy	
TMTG	Tree Management Technical Guidelines	
ТР	Tree Policy	
Tree	A woody perennial plant greater than 5m tall and with a trunk diameter of at least 140mm when measured at a height of 1.4m above the ground or a canopy spread greater than 4m.	
Tree Canopy	The above ground portion of the <i>Tree</i> containing leaves and branches, singular or interconnected with other trees, typically providing shade and cooling for the ground below.	
Tree Management Framework	The Tree Policy ( <i>TP</i> ), Tree Management Strategy ( <i>TMS</i> ), Tree Management Technical Guidelines ( <i>TMTG</i> ) and Liverpool Development Control Plan 2008 ( <i>LDCP</i> ).	
Tree Related Works	The <i>Removal</i> , <i>Pruning</i> or inappropriate <i>Lopping</i> severing or <i>Topping</i> of a <i>Tree</i> and/or its roots.	
Tree Removal Permit	Consent under Chapter 2 of the Biodiversity & Conservation SEPP, that is granted by <i>Council</i> for <i>Tree</i> <i>Related Works</i> (i.e., without another form of <i>Approval</i> ) located on <i>Private Land</i> and is obtained by submitting a <u>Prune or Remove a Tree on a Private Property</u> <u>Application Form</u> to <i>Council</i> . Submitting an application to <i>Council</i> for a <i>Tree Removal Permit</i> does not imply permission will be granted.	
Tree Report	<ul> <li>A <i>Tree Report</i> or tree assessment is prepared by a <i>Consultant Arborist</i>, and includes one or more of the following documents:</li> <li>Arboricultural Assessment Report;</li> <li>Tree Risk Assessment Report;</li> <li>Tree Valuation Report;</li> <li>Tree Protection Plan;</li> <li>Tree Maintenance and Management Report;</li> </ul>	
	<ul> <li>An Arboricultural Impact Assessment; and/or</li> </ul>	
	A Root Mapping Assessment.	
	<i>Council</i> will only accept a <i>Tree Report</i> prepared by a suitably qualified <i>Consultant Arborist</i> .	

#### 3. POLICY STATEMENT

#### 3.1 Background & Context

- 3.1.1 The *Liverpool LGA* has a population of over 230,000 people, with an expected increase of 60% by 2036. It covers some 305 square kilometres, 43 suburbs and stretches 33 kilometres from Georges River in the east to the Nepean River in the west.
- 3.1.2 The *Liverpool LGA* is part of the South-West Sydney growth corridor, and home to the new Western Sydney International Airport and the Holsworthy Army Barracks. With the Liverpool City Centre as its main hub, the *Liverpool LGA* includes over 500 open spaces and a diverse array of land uses that range from native bushland through to high and low density residential, agriculture, including world class recreation, entertainment, and tourism facilities.
- 3.1.3 The *Liverpool LGA* has approximately 23% *Tree Canopy* coverage, with 37 of the 43 suburbs having less than the average and two thirds having below 15%. When compared to 33 other Local Government Areas within Greater Sydney, the *Liverpool LGA* is placed 17th. However, large expanses of natural and rural areas (i.e., the Holsworthy Defence site at 62% canopy cover) impact the data. Excluding Holsworthy, the *Liverpool LGA*'s estimated average canopy coverage is much lower at around 15%.
- 3.1.4 As such, The *Liverpool LGA* (and Western Sydney in general) experiences higher temperatures than most other urban areas in Sydney and is subject to the impacts of the urban heat island effect, which negatively affects the community and environment. The increasing temperatures and limited *Tree Canopy* cover is placing increasing importance on *Trees* and their role in our community and the urban environment.
- 3.1.5 The benefits of *Trees* and the importance of *Trees* to the *Liverpool LGA* are detailed in the *TMS*.

#### 3.2 **Scope**

- 3.2.1 This Policy applies to all *Protected Trees* located on *Public Land* (i.e., land owned and/or administered by *Council*) and *Private Land* (i.e., land not owned and/or administered by *Council*) within the *Liverpool LGA*, except where specified or overridden by legislation.
- 3.2.2 This Policy, the *TMS* and *TMTG* do not cover broad scale land clearing matters or vegetation that does not fit *Councils* definition of a *Protected Tree*. These matters may be the subject of other legislative requirements, such as under the Biodiversity Conservation Act 2016;
- 3.2.3 This Policy applies to the Mayor, Councillors, all *Council* staff, the public, community organisations and all landowners in the Liverpool LGA except where overridden by legislation.

#### 3.3 **Objectives**

3.3.1 <u>Tree Protection and Preservation</u>

- *a)* Prioritise the protection and preservation of the existing *Protected Tree* population;
- *b)* Prescribe protection and preservation responsibilities for all *Protected Trees* and standards for *Council* staff, private developers, contractors, and the community;
- *c)* Recognise the social, economic, and environmental benefits that *Trees* provide the community and prioritise this in all aspects of *Council's* activities;
- *d)* Pursue measures to relocate infrastructure away from *Trees* to reduce the need for excessive *Pruning* and/or *Removal*;
- e) Acknowledge the economic and non-economic value of *Trees* to support their protection and preservation throughout the *Liverpool LGA*.
- f) Recognise *Trees* on *Public Land* that contribute to the environmental, cultural, heritage and social character of the *Liverpool LGA*, and establish a *Significant Tree Register* for extraordinary protection and preservation measures; and
- g) Ensure development applications include all necessary information to allow a full and accurate assessment of the potential impacts on *Protected Trees (i.e., Tree Report/s)*.

#### 3.3.2 Tree Planting and Species Selection

- a) Improve the quality and quantity of the Liverpool's Trees and Tree Canopy cover;
- b) Increase species diversity, age spread and environmental resilience of Liverpool's Protected Trees;
- *c)* Identify opportunities to increase *Tree Canopy* cover throughout the *Liverpool LGA* and adhere to the 'right tree for the right location' principle;
- d) Ensure development proposals are achieving the *Tree Canopy* cover targets set out in the *TMS*;
- *e)* Identify species and pot sizes that are suitable and resilient within the local climate and prioritise the installation of indigenous trees;
- f) Ensure all removed *Protected Trees* are replaced at a minimum 3:1 ratio (where feasible) using appropriate pot sizes, and provide guidance on the implementation of offset planting;
- g) Prescribe tree selection and installation procedures and standards for *Council* staff, private developers, contractors, and the community; and
- *h*) Ensure the use of quality nursery stock in accordance with current best practice and industry standards.

#### 3.3.3 Tree Maintenance and Removal

- a) Ensure the retention of *Protected Trees* is a significant priority in all *Council* activities;
- b) Enable the replacement of any *Protected Trees* removed, in accordance with the *TMTG*;

- c) Prescribe tree maintenance, removal procedures and standards for *Council* staff, private developers, contractors, and the community;
- d) Ensure all trees on *Public Land* are maintained in accordance with the *TMTG*;
- e) Provide consistency in the approach to determining <u>Prune or Remove a Tree on</u> <u>a Private Property Application's</u> and responding to other tree related matters:
- f) Ensure *Tree Approvals* are not to facilitate views, signage, off-street parking, solar panels and/or to minimise the impacts of *Natural Processes* and/or because of unsubstantiated property damage claims.
- g) Implement regular *Pruning* programs to improve the health and structure of *Trees* on *Public Land* and to provide nominal clearances for essential infrastructure.
- h) Facilitate the *Removal* and replacement of underperforming trees and trees listed in the *TMTG* exempt species list; and
- i) Monitor and treat pest and disease issues (where technically and financially feasible), using best practice control techniques as part of *Council's* ongoing maintenance program for trees on *Public Land*.

#### 3.3.4 Risk and Asset Management for Trees

- a) Actively manage the risk of trees on *Public Land* in accordance with the *TMTG*, relevant legislation and *Council's Enterprise Risk Management Policy* 2017;
- b) Incorporate trees on *Public Land* within *Council's* asset management processes and tree asset database to ensure thorough monitoring, protection, and enforcement;
- c) Enhance Council's reputation as a steward and manager of trees;
- d) Improve *Council's* internal resources to appropriately manage enforcement and compliance of *Protected Tree* related matters;
- e) Enable appropriately qualified *Council* staff to enforce the compliance of *Protected Tree* related matters in accordance the relevant legislation;
- f) Actively manage Council's tree population (i.e., Trees on Public Land) and the risk that all trees may pose to persons, property, surrounding assets and public safety in accordance with best practice tree risk and assessment methodology (The Quantified Tree Risk Assessment Method is preferred by Council);
- g) Consider all reasonable tree risk management controls to ensure public tree risk within the *Liverpool LGA* is within the accepted range as identified through an appropriately recognised tree risk assessment system;
- h) Proactively minimise the potential impacts of trees on *Public Land* (i.e., roots and branches) to public and private infrastructure;
- Keep abreast of new technology and innovation in the field of arboriculture and investigate opportunities for integration within *Council's* asset management programs; and

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j) Prescribe tree risk procedures and standards for *Council* staff, private developers, contractors, and the community.

- 3.3.5 Community Consultation and Involvement
- a) Promote community involvement in planting activities including the protection, preservation, selection, installation, and maintenance of trees on *Public Land*;
- b) Increase awareness and educate the community, developers, and *Council* on the on the benefits and value of *Trees*;
- c) Notify the community of illegal works and undertake site specific responses following illegal *Tree Removal*, poisoning, *Lopping*, *Topping* and/or *Pruning*;
- d) Recognize the benefits of *Trees*, in providing shade, cleaner air, and cooler environments, thereby contributing to reducing the impacts of the urban heat island effect and supporting healthy lifestyles within the community;
- e) Inform the community of scheduled notable *Tree Removals* on *Public Land* and reasons for *Removal*, prior to *Removal* occurring;
- f) Notify and educate the community of new street trees planted on *Public Land* within proximity of their residence; and
- g) Provide the community the opportunity to comment or request information on proposed *Tree Removals* on *Public Land* and utilise appropriate notification methods in accordance with *Council's* standard procedures;

#### 4. COMPLIANCE

#### 4.1 <u>Tree Disputes with Neighbours</u>

*Council* does not deal with disputes between neighbours regarding tree matters on private property. *Council* can advise individuals on the available resources and processes available to assist them with such disputes. Refer to the legislation outlined in this Policy.

#### 4.2 Prohibition

A person must not ringbark, cut down, fell, uproot, kill, burn, prune, top, lop or remove a substantial part of the vegetation, remove, injure, poison or willfully destroy any tree to which *Council's* relevant definition of a *Protected Tree* applies, without *Approval*.

#### 4.3 <u>Enforcement action and penalties for removing or damaging a Protected Tree</u> without Approval

Any individual or corporation that carries out work (i.e., lop or remove a substantial part of the vegetation, ringbark, cut down, fell, uproot, kill, burn, remove, injure, poison, or willfully destroy) on a *Protected Tree* without *Approval* or carries out the work not in accordance with *Approval* will be dealt with in accordance with the relevant legislation.

An individual or corporation may also be vicariously liable for engaging or allowing another person or corporation to undertake *Tree Related Works* on a *Protected Tree* without *Approval*.

Where there is sufficient evidence, *Council* may issue an Order and/or a Penalty Infringement Notice to an individual for \$3,000 and to a corporation for \$6,000 or

prosecution action taken in the Local Court or the Land and Environment Court. In the Land and Environment Court, the maximum penalty is \$1,000,000 for an individual and \$5,000,000 for a corporation. In the Local Court, the jurisdictional limit is \$110,000.

To confirm whether *Approval* is required before undertaking works to a *Tree* or Trees or clearing vegetation, an applicant or property owner can contact *Council's* Customer Service Centre on 1300 362 170.

#### 4.4 Where Approval is not required

All *Tree Related Works* for trees on *Public Land* are administered by *Council* and/or other government authorities. *Approval* is not required for *Trees* on *Private Land* in the following instances:

- a) The *Pruning* of branches within one metre of power lines servicing the property;
- b) The elimination of dead branches;
- c) The *Removal*, *Pruning*, *Lopping* or *Topping* of a *Tree* listed in the *TMTG* exempt species list; and
- d) *Tree Related Works* on *Trees* permitted to be removed or pruned under the Rural Fire Service 10/50 Code of Practice NSW. All 10/50 *Tree Related Works* must be in accordance with the code and take place within a designated 10/50 vegetation entitlement clearing area and as per the stipulated conditions.

The *Pruning*, *Topping* or *Lopping* of a *Protected Tree* is not permitted to facilitate views, signage, off-street parking, solar panels and/or to minimise the impacts of *Natural Processes* and/or because of unsubstantiated property damage claims.

*Council* will consider a *Tree Removal Permit* for the removal of a *Tree* (i.e., through the <u>Prune or Remove a Tree on a Private Property Application</u> process) where the main supporting trunk or stem is within three metres of an approved dwelling, garage or in ground swimming pool.

#### 4.5 <u>Council's Prune or Remove a Tree on a Private Property Application Form</u> <u>Process</u>

*Council* considers a variety of factors/issues as part of the application assessment process before determining the permissibility of a *Tree Removal Permit*, these include:

- a) Damage to service pipelines or structures;
- b) Tree health, vigour and structural integrity;
- c) Target area (the area under the tree and frequency of use);
- d) Visual prominence (the impact *Removal* is likely to have on the visual amenity of an area);
- e) Historical significance;
- f) Habitat significance;
- g) Practical alternatives to *Removal* and cost;

- h) Potential for effective *Pruning*;
- i) Whether the *Tree* was planted by the current owner of the property and not as a condition of any development consent having been approved by *Council*.

#### 5. RELEVANT LEGISLATIVE REQUIREMENTS

5.1 Federal legislation

Environment Protection and Biodiversity Conservation Act 1999.

5.2 <u>NSW Legislation and Planning</u>
Western Parkland City SEPP 2021;
Biodiversity & Conservation SEPP 2021;
Biodiversity Conservation Act 2016;
Environmental Planning and Assessment Act 1979;
Environmental Planning and Assessment Act 1979 (as amended);
Environmental Planning and Assessment Amendment (Avoided Land) Regulation 2022;
Heritage Act 1977;
Local Government Act 1993;
Roads Act 1993;
Rural Fire Service Amendment (Vegetation Clearing) Act 2014; and Trees (Disputes Between Neighbours) Act 2006.

#### 5.3 Local Council Planning Controls

Liverpool Local Environment Plan 2008; Liverpool Development Control Plan 2008; Growth Centre Precinct Development Control Plan 2021; Edmondson Park South Development Control Plan 2012; and Western Sydney Aerotropolis Development Control Plan 2022.

#### 6. RELATED POLICIES & PROCEDURE REFERENCES

6.1 <u>Referenced Australia Standards</u>AS4373-2007, Pruning of Amenity Trees; andAS4970-2009, Protection of Trees on Development Sites.

6.2 <u>Referenced Industry Standards and Guides</u> NSW Government - Greening Our City Program (Urban Greening);

Government Architect NSW - Greener Places: An Urban Green Infrastructure Design Framework;

NSW Government - Sydney Green Grid Spatial Framework and Project Opportunities (Introduction & South West District);

NSW Government – Greener Neighbourhoods Guide (Guiding Strategic Planning for Urban Forests);

Western Sydney Regional Organisation of Councils - Urban Heat Planning Toolkit;

Arboriculture Australia - Minimum Industry Standards (MIS);

QTRA - Quantified Tree Risk Assessment;

TRAQ - Tree Risk Assessment Qualification Application Guide; and

VALID - Tree Risk Assessment Protocol.

6.3 Related Liverpool City Council Policies & Plans

Enforcement Policy 2022;

Tree Management Policy 2016;

Climate Change Policy 2023;

Enterprise Risk Management Policy 2017;

Liverpool City Centre Public Domain Master Plan 2020;

Draft Liverpool City Centre Public Domain Technical Manual 2024;

Recreation, Open Space and Sports Strategy 2018-2028;

Delivery Program 2022-2026 and Operational Plan 2023-2024; and Climate Action Plan Report 2022.

6.4 <u>Referenced Policies by Other Council's</u>
Sutherland Shire Council – Urban Tree & Bushland Policy 2021;
City of Sydney – Tree Management Policy 2013;
City of Ryde – Tree Management Policy 2012;
City of Melbourne – Tree Policy 2021;

Ku-ring-gai Council – Urban Forest Policy 2020; and Georges River Council – Tree Management Policy 2019.

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#### AUTHORISED BY

**Council Resolution** 

#### **EFFECTIVE FROM**

XX XXXX 2024 (This is the date the policy is adopted by Council resolution)
#### TREE POLICY

#### **REVIEW DATE**

XX XXXX 2026 (This Policy is to be reviewed every 2 years)

#### VERSIONS

Version	Amended by	Changes Made	Date	TRIM Number
1	Council Resolution		25 July 2011	205345.2011
2	Council Resolution		27 March 2013	046661.2013
3	Council Resolution		30 March 2016	297950.2015
4	Council Resolution		12 October 2016	273466.2016
5	Council Resolution	Policy updated to align with new TMS and TMTG	XXXX 2024	XXXXX.2024

#### THIS POLICY HAS BEEN DEVELOPED IN CONSULTATION WITH

*Council* staff from the following directorates and respective departments, that are involved in the planning, implementation, maintenance, protection, management, approvals and/or enforcement of *Tree* related matters within the *Liverpool LGA*:

#### Operations

- City Works;
- Environment;
- Facilities; and
- Project delivery.

#### **Community and Lifestyles**

• Recreation and Community Outcomes.

#### Corporate Support

- Legal Services & Governance; and
- Procurement.

#### TREE POLICY

#### **Customer Experience & Business Performance**

- Insurance & Claims; and
- Work, Health & Safety.

#### **Planning and Compliance**

- City Planning;
- Community Standards;
- Development Assessment;
- Development Engineering; and
- Planning & Transport Strategy.

#### ATTACHMENTS

Attachment A: Tree Management Framework

STRATEGIC FRAMEWORK					
<b>Tree Policy (TP)</b> Establishes the overarching framework and objectives for the implementation of <i>Council's</i> Tree Management within the <i>Liverpool LGA</i> .					
OPERATIONAL DOCUMENTS					
Liverpool Tree Management Strategy (TMS)	Liverpool Tree Management Technical Guidelines (TMTG)	Liverpool Development Control Plan (Various) - Tree Related Controls			
Outlines <i>Council's</i> tree management vision including establishment of strategic directions required to fulfill the policy objectives, including canopy coverage targets, tree risk management, tree planting, tree maintenance, implementation, & community engagement.	Outlines requirements, procedures and standard specifications for <i>Council</i> staff, land managers, contractors, the community, and developers for the management of trees within the Liverpool LGA, relating to Protection & Preservation, Planting & Selection and Best Practice Management & Maintenance.	Provides objectives and provisions for all development that may have impact on the health or structural stability of a tree. Identifies tree management controls for all development, the land to which the controls apply, the trees to which the controls apply, any exemptions and the applicable planting requirements.			
LINK TO DOCUMENT	LINK TO DOCUMENT	LINK TO DOCUMENT			

# LIVERPOOL CITY COUNCIL

# TREE MANAGEMENT POLICY

Adopted: 12 October 2016(XXXX 2024)

TRIM: 273466.2016 (XXXXX.2024)



### TREE POLICY

DIRECTORATE: Planning & Compliance

BUSINESS UNIT: City Design & Public Domain

1. PURPOSE/ OBJECTIVES

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3. This policy is intended to:

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5. Maximise and promote the preservation of existing trees that provide a pleasant visual amenity and a naturally healthy environment within the City of Liverpool;

6.

7. Provide an overarching principle and framework for the procedures guiding the pruning, removal and replacement of trees located on private property or Council managed land.

#### 1. PURPOSE

The purpose of this Policy is to:

- 1.1 Address the tree related issues faced by Liverpool City Council (Council);
- 1.2 Establish *Council's* commitment and future strategic framework for the installation, protection, management, and maintenance of all *Protected Trees* located within the *Liverpool LGA* (Local Government Area);
- <u>1.3</u> Ensure the overarching *Tree Framework* (i.e., Tree Policy, Tree Management Strategy and Tree Management Technical Guidelines) is consistent with industry best practice and the priorities of *Council*, the NSW Government and the Community.
- <u>1.4 Acknowledge all *Protected Trees* on *Public Land* as public assets requiring ongoing protection, management, and enforcement;</u>
- 1.5 Recognise *Trees* on *Private Land* as intergenerational resources that provide significant value to the community and warrant recognition, education, augmentation and conservation;
- 1.6 Acknowledge the need to increase *Tree* and *Tree Canopy* coverage throughout the LGA to proactively combat urban heat and climate change;
- 1.7 Strengthen *Council's* commitment to the creation of a healthy, inclusive, and engaging city and improve health and wellbeing, environmental and amenity outcomes for the community; and

<u>1.8</u> Guide consistent and practical procedures for the installation, protection, management and maintenance of all *Protected Trees* within the *Liverpool LGA*, to the benefit of *Council* staff, residents, property owners, developers, other managing authorities and the environment.

In addition to the Liverpool Development Control Plan, the Tree Policy is one of three separate documents (i.e., *Tree Framework*) used to proactively manage *Trees* within the *Liverpool LGA*. The relationship between the *Tree Framework* documents is illustrated in Attachment A, the *Tree Management Strategy* and *Tree Management Technical Guidelines*.

#### 2. DEFINITIONS

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<u>Approval</u>	Any Tree Related Works proposal on Public Land and/or Private Land that has: A Tree Removal Permit; or Consent from the Native Vegetational Panel under Part 2.4 of the Biodiversity & Conservation SEPP; or
	<ul> <li><u>Development Consent</u>; or</li> <li>Complying Development Consent.</li> </ul>
Consultant Arborist	<u>A professional in the practice of arboriculture, that holds an Australian Qualification Framework (AQF) Level 5, Diploma of Horticulture (Arboriculture).</u>
Edible Fruit Tree	<u>A woody perennial plant that is commonly accepted</u> as being grown for edible fruits and nuts such as Lemon, Orange, Plums, Peach, Nectarines, Apple, Persimmon, Quince, Avocado etc.
Establishment period	The twenty-four (24) month period it takes for a newly planted woody perennial plant to establish and survive.
Council	Liverpool City Council (LCC).
Public Land	All land owned and/or administered by <i>Council</i> for public or non-public use.
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LDCP	Liverpool Development Control Plan 2008.
Liverpool LGA	Liverpool Local Government Area.

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LLEP	Liverpool Local Environment Plan 2008.
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Natural Processes	Relating to leaves, twigs, small branches, flowers, pollen, fruit/seed drops, fauna, bird or bat droppings.
Practising Arborist	A professional who undertakes <i>Tree Related Works</i> .
Protected Tree	<ul> <li><u>A woody perennial plant requiring Approval for Tree</u> <u>Related Works, is either:</u></li> <li><u>1. A woody perennial plant on Private Land that meets</u> <u>Councils definition of a Tree, and not listed as an</u> <u>exempt species in Council's Tree Management</u> <u>Technical Guidelines; or</u></li> <li><u>2. A woody perennial plant on Public Land</u> <u>(irrespective of size or species).</u></li> </ul>
<u>Pruning</u>	To cut off living branches or roots (or portions of branches or roots) for specific outcomes (e.g., to reshaped or improve health) in accordance with accepted techniques contained within AS4373 Pruning of Amenity Trees (e.g., crown lifting, thinning, cleaning, and reduction).
Ringbarking	To cut through the bark and sapwood of the <i>Tree</i> , to disrupt the movement of water and nutrients between the roots and leaves and upper portions of the <i>Tree</i> , normally killing the <i>Tree</i> .
<u>Removal</u>	<ul> <li><u>To undertake either of the following:</u> <ol> <li><u>Completely cutting a Tree to the ground, taking away all limbs and the trunk; or</u> </li> <li><u>Taking any action that would lead to the death of a Tree or cause permanent damage that may compromise Tree health and stability.</u></li> </ol> </li> </ul>
<u>Significant</u> <u>Tree</u>	Any Tree that has been identified as having substantial value in a Tree Report (i.e., Arboricultural Assessment)

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	by a Consultant Arborist or within the Legislative Requirements outlined in this Policy. This includes a heritage listed Tree or any Tree that has been included in Council's Significant Tree Register or the National Trusts of Australia Register of Significant Trees.
<u>Significant</u> <u>Tree Register</u>	Identifies <i>Trees</i> of environmental, cultural, heritage, historical or social significance within the <i>Liverpool</i> <i>LGA</i> , which affords extraordinary protection and preservation measures for consideration when being assessed for any potential <i>Tree Related Works</i> .
Topping	Reducing the height of a <i>Tree</i> through the inappropriate practice of lopping typically including the amputation of the top portion of a <i>Tree</i> including a section of its trunk.
<u>TMS</u>	Tree Management Strategy
<u>TMTG</u>	Tree Management Technical Guidelines
<u>TP</u>	Tree Policy
<u>Tree</u>	A woody perennial plant greater than 5m tall and with a trunk diameter of at least 140mm when measured at a height of 1.4m above the ground or a canopy spread greater than 4m.
Tree Canopy	The above ground portion of the <i>Tree</i> containing leaves and branches, singular or interconnected with other trees, typically providing shade and cooling for the ground below.
<u>Tree</u> <u>Management</u> <u>Framework</u>	The Tree Policy ( <i>TP</i> ), Tree Management Strategy ( <i>TMS</i> ), Tree Management Technical Guidelines ( <i>TMTG</i> ) and Liverpool Development Control Plan 2008 ( <i>LDCP</i> ).
<u>Tree Related</u> <u>Works</u>	The <i>Removal, Pruning</i> or inappropriate <i>Lopping</i> severing or <i>Topping</i> of a <i>Tree</i> and/or its roots.
Tree Removal Permit	Consent under Chapter 2 of the Biodiversity & Conservation SEPP, that is granted by <i>Council</i> for <i>Tree</i> <i>Related Works</i> (i.e., without another form of <i>Approval</i> ) located on <i>Private Land</i> and is obtained by submitting a Prune or Remove a Tree on a Private Property Application Form to <i>Council</i> . Submitting an application to <i>Council</i> for a <i>Tree Removal Permit</i> does not imply permission will be granted.
Tree Report	<u>A Tree Report or tree assessment is prepared by a</u> <u>Consultant Arborist</u> , and includes one or more of the

<ul> <li>Arboricultural Assessment Report;</li> <li>Tree Risk Assessment Report;</li> <li>Tree Valuation Report;</li> <li>Tree Protection Plan;</li> <li>Tree Maintenance and Management Report;</li> <li>An Arboricultural Impact Assessment; and/or</li> <li>A Root Mapping Assessment.</li> </ul>	Tollowing documents:
Tree Risk Assessment Report;     Tree Valuation Report;     Tree Valuation Report;     Tree Protection Plan;     Tree Maintenance and Management Report;     An Arboricultural Impact Assessment; and/or     A Root Mapping Assessment. Council will only accept a Tree Report prepared by a	<ul> <li>Arboricultural Assessment Report;</li> </ul>
Tree Valuation Report;     Tree Protection Plan;     Tree Maintenance and Management Report;     An Arboricultural Impact Assessment; and/or     A Root Mapping Assessment. Council will only accept a Tree Report prepared by a suitably qualified Consultant Arborist	<ul> <li>Tree Risk Assessment Report;</li> </ul>
Tree Protection Plan;     Tree Maintenance and Management Report;     An Arboricultural Impact Assessment; and/or     A Root Mapping Assessment.     Council will only accept a Tree Report prepared by a     suitably qualified Consultant Arborist	Tree Valuation Report;
Tree Maintenance and Management Report;     An Arboricultural Impact Assessment; and/or     A Root Mapping Assessment.     Council will only accept a Tree Report prepared by a     suitably qualified Consultant Arborist	Tree Protection Plan;
An Arboricultural Impact Assessment; and/or     A Root Mapping Assessment.      Council will only accept a Tree Report prepared by a     suitably qualified Consultant Arborist	<ul> <li>Tree Maintenance and Management Report;</li> </ul>
<u>A Root Mapping Assessment.</u> <u>Council will only accept a Tree Report prepared by a</u> suitably qualified Consultant Arborist	An Arboricultural Impact Assessment; and/or
<u>Council</u> will only accept a <u>Tree Report</u> prepared by a suitably qualified <u>Consultant</u> <u>Arborist</u>	A Root Mapping Assessment.
Sultably qualities Consultant Arbonst.	<u>Council will only accept a Tree Report prepared by a suitably qualified Consultant Arborist.</u>

#### 1. LEGISLATIVE REQUIREMENTS

Environment and Planning Assessment Act 1979 Environment Protection and Biodiversity Conservation Act 1999 Heritage Act 1977 Local Government Act 1993 National Parks and Wildlife Act 1974 Roads Act 1993 Rural Fire Service Amendment (Vegetation Clearing) Act 2014 Threatened Species Conservation Act 1995 Trees (Disputes Between Neighbours) Act 2006

#### 2. DEFINITIONS

Approved Has Development Approval or Complying Development Approval

Canopy The portion of the tree containing leaves and branches

CEO Chief Executive Officer

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Domestic Fruit	Free Non indigenous trees that are commonly grown in backyards for their edible fruit
LDCP 2008	Liverpool Development Control Plan 2008
LLEP 2008	Liverpool Local Environment Plan 2008
Lopping	The incomplete removal of branches leaving stumps attached to the tree
Pruning	To cut off part or whole branches or roots of a tree
Ringbarking	Cutting through the bark and sapwood of the tree so as to stop the flow of water and nutrients between roots and leave
Significant Tree	A significant tree is a heritage listed tree or any tree/s that has been adopted for inclusion on Council's Significant Tree register
Topping	The removal of the top portion of a tree including a section of the trunk
Tree	Any perennial plant that has a height greater than 3.5 m or a canopy spread more than 4.0 m or a primary trunk diameter greater than 400 mm when measured 1.0 m above existing ground level of the tree
3. LINKS TO THE (	COMMUNITY STRATEGIC PLAN
Council's tree m following stated Community Strat	anagement practices and programs will be driven by the key directions in Growing Liverpool 2023, the ten year egic Plan for the City of Liverpool.
a) Vibrant Prosperous	<del>s City;</del>
b) Natural Sustainabl	<del>e City;</del>
c) Leading Proactive	<del>Council.</del> Page 7

#### . POLICY STATEMENT

Trees add many benefits to the environment including adding amenity to streetscapes, reducing climatic extremes, improving air quality and providing habitat for birds and other wildlife.

Trees soften and add appeal to urban areas improving property values and giving a sense of wellbeing to people who live in these areas.

This policy emphasises Council's commitment to protecting Liverpool's environment/ amenity by promoting the retention of healthy established trees and their renewal.

Anyone wishing to remove a tree or trees on private property must first obtain approval from Council except when clause 5.5 of this policy applies.

Council will require each tree that is removed to be replaced, as specified in the relevant tree management procedure attached to this policy.

Any recommendation for the refusal of an application to remove tree/s on privately owned property will be referred to Council for resolution.

This policy provides a link to relevant Directions of Council's Community Strategic Plan *"Growing Liverpool 2023"* and is pertinent to the 10 year strategy to reduce environmental impacts. The policy is part of a range of documents relating to tree and vegetation protection, planting and management in the Liverpool LGA. These documents are listed in the references set out at the end of this policy.

#### 3. POLICY STATEMENT

#### 3.1 Background & Context

- 3.1.1 The Liverpool LGA has a population of over 230,000 people, with an expected increase of 60% by 2036. It covers some 305 square kilometres, 43 suburbs and stretches 33 kilometres from Georges River in the east to the Nepean River in the west.
- 3.1.2 The Liverpool LGA is part of the South-West Sydney growth corridor, and home to the new Western Sydney International Airport and the Holsworthy Army Barracks. With the Liverpool City Centre as its main hub, the Liverpool

LGA includes over 500 open spaces and a diverse array of land uses that
range from native bushland through to high and low density residential,
agriculture, including world class recreation, entertainment, and tourism
facilities.

- 3.1.3 The Liverpool LGA has approximately 23% Tree Canopy coverage, with 37 of the 43 suburbs having less than the average and two thirds having below 15%. When compared to 33 other Local Government Areas within Greater Sydney, the Liverpool LGA is placed 17th. However, large expanses of natural and rural areas (i.e., the Holsworthy Defence site at 62% canopy cover) impact the data. Excluding Holsworthy, the Liverpool LGA's estimated average canopy coverage is much lower at around 15%.
- 3.1.4 As such, The *Liverpool LGA* (and Western Sydney in general) experiences higher temperatures than most other urban areas in Sydney and is subject to the impacts of the urban heat island effect, which negatively affects the community and environment. The increasing temperatures and limited *Tree Canopy* cover is placing increasing importance on *Trees* and their role in our community and the urban environment.
- <u>3.1.5 The benefits of *Trees* and the importance of *Trees* to the *Liverpool LGA* are detailed in the *TMS*.</u>

7.1.1

5.1. Land to which the policy applies

This policy applies to all land being either public or privately owned within the Liverpool Local Government Area (LGA) except where overridden by legislation.\_\_\_

#### 3.2 **Scope**

- 3.2.1 This Policy applies to all *Protected Trees* located on *Public Land* (i.e., land owned and/or administered by *Council*) and *Private Land* (i.e., land not owned and/or administered by *Council*) within the *Liverpool LGA*, except where specified or overridden by legislation.
- 3.2.2 This Policy, the *TMS* and *TMTG* do not cover broad scale land clearing matters or vegetation that does not fit *Councils* definition of a *Protected Tree*. These matters may be the subject of other legislative requirements, such as under the Biodiversity Conservation Act 2016;
- 3.2.3 This Policy applies to the Mayor, Councillors, all *Council* staff, the public, community organisations and all landowners in the Liverpool LGA except where overridden by legislation.

#### 5.2. Prohibition

A person must not ring bark, cut down, top, lop, remove, injure or wilfully destroy any tree or other vegetation to which Council's relevant Development Control Plan

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3.3	
<u>3.3</u>	3.1 Tree Protection and Preservation
<u>a)</u>	Prioritise the protection and preservation of the existing <i>Protected Tree</i> population;
<u>b)</u>	Prescribe protection and preservation responsibilities for all <i>Protected Trees</i> a standards for <i>Council</i> staff, private developers, contractors, and the community
<u>c)</u>	Recognise the social, economic, and environmental benefits that <i>Trees</i> provid the community and prioritise this in all aspects of <i>Council's</i> activities;
<u>d)</u>	Pursue measures to relocate infrastructure away from <i>Trees</i> to reduce the new for excessive <i>Pruning</i> and/or <i>Removal</i> ;
<u>e)</u>	Acknowledge the economic and non-economic value of <i>Trees</i> to support their protection and preservation throughout the <i>Liverpool LGA</i> .
<u>f)</u>	Recognise <i>Trees</i> on <i>Public Land</i> that contribute to the environmental, cultural, heritage and social character of the <i>Liverpool LGA</i> , and establish a <i>Significant Tree Register</i> for extraordinary protection and preservation measures; and
d)	Encure development applications include all persecuri information to allow a t
	and accurate assessment of the potential impacts on <i>Protected Trees (i.e., Tre</i> <u>Report/s).</u>
<u>3.3</u>	and accurate assessment of the potential impacts on <i>Protected Trees (i.e., Tre</i> <u>Report/s).</u>
<u>3.3</u> <u>a)</u>	and accurate assessment of the potential impacts on <i>Protected Trees (i.e., Tre</i> <u>Report/s).</u> 3.2 Tree Planting and Species Selection Improve the quality and quantity of the Liverpool's <i>Trees</i> and <i>Tree Canopy</i> cov
<u>3.3</u> <u>a)</u> <u>b)</u>	and accurate assessment of the potential impacts on <i>Protected Trees (i.e., Tre</i> <u>Report/s).</u> <u>B.2 Tree Planting and Species Selection</u> Improve the quality and quantity of the Liverpool's <i>Trees</i> and <i>Tree Canopy</i> cov Increase species diversity, age spread and environmental resilience of <u>Liverpool's <i>Protected Trees</i></u> ;
<u>3.3</u> <u>a)</u> <u>b)</u>	and accurate assessment of the potential impacts on <i>Protected Trees (i.e., Tra</i> <i>Report/s).</i> 3.2 Tree Planting and Species Selection Improve the quality and quantity of the Liverpool's <i>Trees</i> and <i>Tree Canopy</i> cov Increase species diversity, age spread and environmental resilience of Liverpool's <i>Protected Trees</i> ; Identify opportunities to increase <i>Tree Canopy</i> cover throughout the <i>Liverpool</i> <i>LGA</i> and adhere to the 'right tree for the right location' principle;
<u>3.3</u> <u>a)</u> <u>b)</u> <u>c)</u>	and accurate assessment of the potential impacts on <i>Protected Trees (i.e., Tra</i> <u>Report/s).</u> <u>3.2 Tree Planting and Species Selection</u> Improve the quality and quantity of the Liverpool's <i>Trees</i> and <i>Tree Canopy</i> cov Increase species diversity, age spread and environmental resilience of Liverpool's <i>Protected Trees</i> ; Identify opportunities to increase <i>Tree Canopy</i> cover throughout the <i>Liverpool</i> <i>LGA</i> and adhere to the 'right tree for the right location' principle; Ensure development proposals are achieving the <i>Tree Canopy</i> cover targets so <u>out in the <i>TMS</i>;</u>
<u>3.3</u> <u>a)</u> <u>b)</u> <u>c)</u> <u>d)</u>	<ul> <li>and accurate assessment of the potential impacts on Protected Trees (i.e., Tra Report/s).</li> <li>3.2 Tree Planting and Species Selection</li> <li>Improve the quality and quantity of the Liverpool's Trees and Tree Canopy cov Increase species diversity, age spread and environmental resilience of Liverpool's Protected Trees;</li> <li>Identify opportunities to increase Tree Canopy cover throughout the Liverpool LGA and adhere to the 'right tree for the right location' principle;</li> <li>Ensure development proposals are achieving the Tree Canopy cover targets so out in the TMS;</li> <li>Identify species and pot sizes that are suitable and resilient within the local climate and prioritise the installation of indigenous trees;</li> </ul>
<u>3.3</u> <u>a)</u> <u>b)</u> <u>c)</u> <u>d)</u> <u>f)</u>	and accurate assessment of the potential impacts on <i>Protected Trees (i.e., Tre</i> <i>Report/s).</i> 3.2 Tree Planting and Species Selection Improve the quality and quantity of the Liverpool's <i>Trees</i> and <i>Tree Canopy</i> cov Increase species diversity, age spread and environmental resilience of Liverpool's <i>Protected Trees</i> ; Identify opportunities to increase <i>Tree Canopy</i> cover throughout the <i>Liverpool</i> <i>LGA</i> and adhere to the 'right tree for the right location' principle; Ensure development proposals are achieving the <i>Tree Canopy</i> cover targets s out in the <i>TMS</i> ; Identify species and pot sizes that are suitable and resilient within the local climate and prioritise the installation of indigenous trees; Ensure all removed <i>Protected Trees</i> are replaced at a minimum 3:1 ratio (whe feasible) using appropriate pot sizes, and provide guidance on the implementation of offset planting;

- 3.3.3 Tree Maintenance and Removal
- <u>a)</u> Ensure the retention of *Protected Trees* is a significant priority in all *Council* <u>activities;</u>
- b) Enable the replacement of any *Protected Trees* removed, in accordance with the <u>TMTG</u>;
- c) Prescribe tree maintenance, removal procedures and standards for *Council* staff, private developers, contractors, and the community;
- d) Ensure all trees on Public Land are maintained in accordance with the TMTG;
- e) Provide consistency in the approach to determining Prune or Remove a Tree on a Private Property Application's and responding to other tree related matters;
- f) Ensure Tree Approvals are not to facilitate views, signage, off-street parking, solar panels and/or to minimise the impacts of Natural Processes and/or because of unsubstantiated property damage claims.
- g) Implement regular *Pruning* programs to improve the health and structure of *Trees* on *Public Land* and to provide nominal clearances for essential infrastructure.
- <u>h)</u> Facilitate the *Removal* and replacement of underperforming trees and trees listed in the *TMTG* exempt species list; and
- i) Monitor and treat pest and disease issues (where technically and financially feasible), using best practice control techniques as part of *Council's* ongoing maintenance program for trees on *Public Land*.
- 3.3.4 Risk and Asset Management for Trees
- a) Actively manage the risk of trees on *Public Land* in accordance with the *TMTG*, relevant legislation and *Council's Enterprise Risk Management Policy* 2017;
- b) Incorporate trees on *Public Land* within *Council's* asset management processes and tree asset database to ensure thorough monitoring, protection, and enforcement;
- c) Enhance Council's reputation as a steward and manager of trees;
- d) Improve *Council's* internal resources to appropriately manage enforcement and <u>compliance of *Protected Tree* related matters;</u>
- e) Enable appropriately qualified *Council* staff to enforce the compliance of *Protected Tree* related matters in accordance the relevant legislation;
- f) Actively manage Council's tree population (i.e., Trees on Public Land) and the risk that all trees may pose to persons, property, surrounding assets and public safety in accordance with best practice tree risk and assessment methodology (The Quantified Tree Risk Assessment Method is preferred by Council);

<u>g)</u>	Consider all reasonable tree risk management controls to ensure public tree risk			
	within the Liverpool LGA is within the accepted range as identified through an			
	appropriately recognised tree risk assessment system;			

- h) Proactively minimise the potential impacts of trees on *Public Land* (i.e., roots and branches) to public and private infrastructure;
- i) Keep abreast of new technology and innovation in the field of arboriculture and investigate opportunities for integration within *Council's* asset management programs; and
- j) Prescribe tree risk procedures and standards for *Council* staff, private developers, contractors, and the community.

#### 3.3.5 Community Consultation and Involvement

- a) Promote community involvement in planting activities including the protection, preservation, selection, installation, and maintenance of trees on *Public Land*;
- b) Increase awareness and educate the community, developers, and *Council* on the on the benefits and value of *Trees*;
- c) Notify the community of illegal works and undertake site specific responses following illegal *Tree Removal*, poisoning, *Lopping*, *Topping* and/or *Pruning*;
- <u>d)</u> Recognize the benefits of *Trees*, in providing shade, cleaner air, and cooler environments, thereby contributing to reducing the impacts of the urban heat island effect and supporting healthy lifestyles within the community;
- e) Inform the community of scheduled notable *Tree Removals* on *Public Land* and reasons for *Removal*, prior to *Removal* occurring;
- <u>f)</u> Notify and educate the community of new street trees planted on *Public Land* within proximity of their residence; and
- g) Provide the community the opportunity to comment or request information on proposed Tree Removals on Public Land and utilise appropriate notification methods in accordance with Council's standard procedures;

#### 5.3. Definition of a Tree

A tree is defined as any perennial plant that has a:

Height greater than 3.5 metres; or

Canopy spread greater than 4.0 metres; or

Primary trunk diameter greater than 400 millimetres when measured 1.0 metre above existing ground level of the tree.

This clause does not apply to:

A tree or other vegetation that Council is satisfied is dead dying or dangerous and is not required as the habitat of native fauna.

Note: Any dead trees that form a component of any species, populations or communities listed under the provisions of the Threatened Species Conservation Act (TSCA) 1995; or their habitats are not to be removed without gaining the necessary approvals under that Act;

Any plant that is on the noxious weeds register for the Liverpool LGA or is listed as an exempt species in Council's LDCP 2008.

#### 4. COMPLIANCE

4.1 Tree Disputes with Neighbours

<u>Council</u> does not deal with disputes between neighbours regarding tree matters on private property. <u>Council</u> can advise individuals on the available resources and processes available to assist them with such disputes. Refer to the legislation outlined in this Policy.

#### 4.2 Prohibition

<u>A person must not ringbark, cut down, fell, uproot, kill, burn, prune, top, lop or remove</u> <u>a substantial part of the vegetation, remove, injure, poison or willfully destroy any tree</u> to which *Council's* relevant definition of a *Protected Tree* applies, without Approval.

#### 5.4. Penalties for removing trees without approval

Councils in NSW have successfully prosecuted unauthorised removal of trees and substantial penalties and legal costs have been awarded to Councils for offences where trees have been removed without approval.

Any individual or entity that removes or lops a tree or trees without approval may be liable for a significant fine or legal action.

The Environmental Planning and Assessment Act 1979 provides for a maximum penalty of \$1.1 million for illegal tree removal or destruction in breach of the Act.

A person may also be liable for a penalty for engaging or allowing another person to remove, prune or lop a tree or trees without Council consent.

To confirm whether Council permission or Development Consent is required before removing a tree or trees or clearing vegetation, a property owner can contact Council's Customer Service Centre on 1300-362-2170.

4.3 Enforcement action and penalties for removing or damaging a *Protected Tree* without *Approval* 

Any individual or corporation that carries out work (i.e., lop or remove a substantial part of the vegetation, ringbark, cut down, fell, uproot, kill, burn, remove, injure, poison, or willfully destroy) on a *Protected Tree* without *Approval* or carries out the work not in accordance with *Approval* will be dealt with in accordance with the relevant legislation.

An individual or corporation may also be vicariously liable for engaging or allowing another person or corporation to undertake *Tree Related Works* on a *Protected Tree* without *Approval*.

Where there is sufficient evidence, *Council* may issue an Order and/or a Penalty Infringement Notice to an individual for \$3,000 and to a corporation for \$6,000 or prosecution action taken in the Local Court or the Land and Environment Court. In the Land and Environment Court, the maximum penalty is \$1,000,000 for an individual and \$5,000,000 for a corporation. In the Local Court, the jurisdictional limit is \$110,000.

To confirm whether *Approval* is required before undertaking works to a *Tree* or Trees or clearing vegetation, an applicant or property owner can contact *Council's* Customer Service Centre on 1300 362 170.

#### 5.5. Where approval is not required

Council approval is not required for the following:

- a) The pruning of branches directly above roof lines;
- b) The pruning of branches within one metre of power lines servicing the property;
- c) The removal of dead branches;
- d) The removal of domestic fruit trees grown specifically for their edible fruit;
- e) The removal of any tree on private property where the main supporting trunk or stem is within three metres of an approved dwelling, garage or in ground swimming pool;
- f) The pruning or removal of trees listed by Council as being exempt in LLEP 2008; and

### g) The removal or pruning of trees permitted to be removed or pruned under the Rural Fire Service 10/50 Code of Practice for NSW.

#### 4.4 Where Approval is not required

All *Tree Related Works* for trees on *Public Land* are administered by *Council* and/or other government authorities. *Approval* is not required for *Trees* on *Private Land* in the following instances:

a) The Pruning of branches within one metre of power lines servicing the property;

b) The elimination of dead branches;

- <u>c)</u> The *Removal*, *Pruning*, *Lopping* or *Topping* of a *Tree* listed in the *TMTG* exempt species list; and
- <u>d)</u> Tree Related Works on Trees permitted to be removed or pruned under the Rural Fire Service 10/50 Code of Practice NSW. All 10/50 Tree Related Works must be in accordance with the code and take place within a designated 10/50 vegetation entitlement clearing area and as per the stipulated conditions.

The *Pruning*, *Topping* or *Lopping* of a *Protected Tree* is not permitted to facilitate views, signage, off-street parking, solar panels and/or to minimise the impacts of *Natural Processes* and/or because of unsubstantiated property damage claims.

<u>Council</u> will consider a <u>Tree Removal Permit</u> for the removal of a <u>Tree (i.e., through</u> the Prune or Remove a <u>Tree on a Private Property Application process</u>) where the main supporting trunk or stem is within three metres of an approved dwelling, garage or in ground swimming pool.

4.5 *Council's Prune* or Remove a Tree on a Private Property Application Form <u>Process</u>

<u>Council considers a variety of factors/issues as part of the application assessment</u> process before determining the permissibility of a *Tree Removal Permit*, these include:

- a) Damage to service pipelines or structures;
- b) Tree health, vigour and structural integrity;
- c) Target area (the area under the tree and frequency of use);
- <u>d)</u> Visual prominence (the impact *Removal* is likely to have on the visual amenity of <u>an area);</u>
- e) Historical significance;
- f) Habitat significance;
- g) Practical alternatives to Removal and cost;
- h) Potential for effective Pruning;

i) Whether the *Tree* was planted by the current owner of the property and not as a condition of any development consent having been approved by *Council*.

#### 5. RELEVANT LEGISLATIVE REQUIREMENTS

5.1 Federal legislation

Environment Protection and Biodiversity Conservation Act 1999.

5.2 NSW Legislation and Planning

Western Parkland City SEPP 2021;

Biodiversity & Conservation SEPP 2021;

Biodiversity Conservation Act 2016;

Environmental Planning and Assessment Act 1979;

Environmental Planning and Assessment Act 1979 (as amended);

Environmental Planning and Assessment Amendment (Avoided Land) Regulation 2022;

<u>Heritage Act 1977;</u>

Local Government Act 1993;

Roads Act 1993;

<u>Rural Fire Service Amendment (Vegetation Clearing) Act 2014; and</u> Trees (Disputes Between Neighbours) Act 2006.

5.3 Local Council Planning Controls Liverpool Local Environment Plan 2008; Liverpool Development Control Plan 2008; Growth Centre Precinct Development Control Plan 2021; Edmondson Park South Development Control Plan 2012; and Western Sydney Aerotropolis Development Control Plan 2022.

6. RELATED POLICIES & PROCEDURE REFERENCES

6.1 Referenced Australia Standards AS4373-2007, Pruning of Amenity Trees; and AS4970-2009, Protection of Trees on Development Sites.

6.2 Referenced Industry Standards and Guides NSW Government - Greening Our City Program (Urban Greening):

Government Architect NSW - Greener Places: An Urban Green Infrastructure Design Framework;

NSW Government - Sydney Green Grid Spatial Framework and Project Opportunities (Introduction & South West District);

<u>NSW Government – Greener Neighbourhoods Guide (Guiding Strategic Planning for</u> <u>Urban Forests);</u>

Western Sydney Regional Organisation of Councils - Urban Heat Planning Toolkit;

Arboriculture Australia - Minimum Industry Standards (MIS);

QTRA - Quantified Tree Risk Assessment;

TRAQ - Tree Risk Assessment Qualification Application Guide; and

VALID – Tree Risk Assessment Protocol.

6.3 Related Liverpool City Council Policies & Plans

Enforcement Policy 2022;

Tree Management Policy 2016;

Climate Change Policy 2023;

Enterprise Risk Management Policy 2017;

Liverpool City Centre Public Domain Master Plan 2020;

Draft Liverpool City Centre Public Domain Technical Manual 2024;

Recreation, Open Space and Sports Strategy 2018-2028;

Delivery Program 2022-2026 and Operational Plan 2023-2024; and

Climate Action Plan Report 2022.

6.4 Referenced Policies by Other Council's

Sutherland Shire Council – Urban Tree & Bushland Policy 2021;

<u>City of Sydney – Tree Management Policy 2013;</u>

City of Ryde – Tree Management Policy 2012;

<u>City of Melbourne – Tree Policy 2021;</u>

Ku-ring-gai Council – Urban Forest Policy 2020; and

Georges River Council - Tree Management Policy 2019.

#### **AUTHORISED BY**

**Council Resolution** 

#### **EFFECTIVE FROM**

12 October 2016

#### **DEPARTMENT RESPONSIBLE**

Infrastructure and Environment (Technical Support)
AUTHORISED BY

### Council Resolution

#### **EFFECTIVE FROM**

XX XXXX 2024 (This is the date the policy is adopted by Council resolution)

#### **REVIEW DATE**

XX XXXX 2026 (This Policy is to be reviewed every 2 years)

#### THIS POLICY HAS BEEN DEVELOPED IN CONSULTATION WITH

City Presentation Corporate Services (Governance and Legal Services) Executive Management Team Planning and Growth

#### **VERSIONS**

<b>Version</b>	Amended by	Date	TRIM Number
4	Adopted by Council	25 July 2011	<del>205345.2011</del>
	Resolution		
2	Council Resolution	27 March 2013	<del>046661.2013</del>
3	Council Resolution	30 March 2016	<del>297950.2015</del>
4	Council Resolution	12 October 2016	<del>273466.2016</del>

**VERSIONS** 

<u>Version</u>	Amended by	Changes Made	Date	<u>TRIM</u> Number
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1	<u>Council</u> <u>Resolution</u>		<u>25 July 2011</u>	205345.2011
<u>2</u>	Council Resolution		27 March 2013	<u>046661.2013</u>
<u>3</u>	Council Resolution		<u>30 March 2016</u>	<u>297950.2015</u>
<u>4</u>	<u>Council</u> <u>Resolution</u>		<u>12 October</u> <u>2016</u>	273466.2016
<u>5</u>	<u>Council</u> <u>Resolution</u>	Policy updated to align with new TMS and TMTG	<u>XXXX 2024</u>	<u>XXXXX.2024</u>

#### THIS POLICY HAS BEEN DEVELOPED IN CONSULTATION WITH

Council staff from the following directorates and respective departments, that are involved in the planning, implementation, maintenance, protection, management, approvals and/or enforcement of Tree related matters within the Liverpool LGA:

#### **Operations**

- City Works;
- Environment;
- Facilities; and
- Project delivery.

#### **Community and Lifestyles**

Recreation and Community Outcomes.

#### **Corporate Support**

- Legal Services & Governance; and
- Procurement.

#### **Customer Experience & Business Performance**

- Insurance & Claims; and
- Work, Health & Safety.

#### **Planning and Compliance**

- City Planning;
- Community Standards;
- Development Assessment;
- Development Engineering; and
- Planning & Transport Strategy.

#### **REVIEW DATE**

Every two years from date of adoption of this policy

#### **REFERENCES**

Liverpool Biodiversity Management Plan 2012 Liverpool Development Control Plan 2008 Liverpool Environment Restoration Plan 2012 Liverpool Local Environment Plan 2008 Liverpool Street Tree and Landscape Strategy

#### **ATTACHMENTS**

Attachment A: Tree Management Procedure for Private Property and Land Not Managed by Council

Attachment B: Tree Management Procedure for Property and Land Managed by Council

#### **ATTACHMENTS**

Attachment A: Tree Management Framework

TATEGIC FRAMEWOR

#### Tree Policy (TP)

Establishes the overarching framework and objectives for the implementation of Council's Tree Management within the Liverpool LGA.

**OPERATIONAL DOCUMENTS** 

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<u>Liverpool Tree</u>	<u>Liverpool Tree</u>	<u>Liverpool Development</u>
<u>Management Strategy</u>	<u>Management Technical</u>	<u>Control Plan (Various) -</u>
<u>(TMS)</u>	<u>Guidelines (TMTG)</u>	<u>Tree Related Controls</u>
Outlines Council's tree	Outlines requirements,	Provides objectives and
management vision	procedures and standard	provisions for all
including establishment	specifications for <i>Council</i>	development that may
of strategic directions	staff, land managers,	have impact on the health
required to fulfill the	contractors, the	or structural stability of a
policy objectives,	community, and	tree. Identifies tree
including canopy	developers for the	management controls for
coverage targets, tree	management of trees	all development, the land
risk management, tree	within the Liverpool LGA,	to which the controls
planting, tree	relating to Protection &	apply, the trees to which
maintenance,	Preservation, Planting &	the controls apply, any
implementation, &	Selection and Best	exemptions and the
community	Practice Management &	applicable planting
engagement.	Maintenance.	requirements.
LINK TO DOCUMENT	LINK TO DOCUMENT	

I

**Attachment A** 



TREE MANAGEMENT PROCEDURE FOR PRIVATE PROPERTY AND LAND NOT MANAGED BY COUNCIL



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4.	PURPOSE
1.1	This procedure is intended to guide Council staff in assessing applications to prune or remove trees on private property and is to be read in conjunction with Council's Tree Management Policy.
<del>2</del> .	TREE APPLICATION ASSESSMENT PROCESS
<del>2.1</del>	A tree removal/ pruning application is lodged with Council with the application fee as approved in Council's fees and charges along with any supporting documentation or photos and so on.
<del>2.2</del>	The application is then assessed as soon as possible by suitably qualified staff member. A rudimentary visual assessment of the tree or trees is then carried out taking into account the following factors:
<del>8. E</del>	amage to service pipelines or structures;
<del>9. T</del>	ree/s health, vigour and structural integrity;
<del>10. T</del>	arget area (the area under the tree and frequency of use);
<mark>11. √</mark> a	isual prominence (the impact removal is likely to have on the visual amenity of n area);
<mark>12.</mark> ⊧	listorical significance;
<del>13.</del> ⊧	labitat significance;
<del>14. P</del>	ractical alternatives to removal and cost;
<del>15. P</del>	otential for effective pruning;
<b>16.</b> √ େ	Whether the tree was planted by the current owner of the property and not as a andition of any development consent having been approved by Council.
<del>2.3</del>	When assessing applications, members of Council staff shall, at all times, seek to provide a reasonable balance between the interests of the land owner in solving a problem and the interests of the wider community in ensuring the

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amenity and environment is preserved.

- 2.4 On completion of the visual assessment the Council assessing officer shall issue a Council notice of determination to the applicant. The Council assessing officer may request further information from the applicant at this stage, if it is appropriate in their opinion to do so. Such requested information may include a report from a registered Australian Qualification Framework (AQF) level 5 qualified consulting arborist, plumber or structural engineer, depending on the nature of the problem.
- 2.5 Once further information is received, by Council, the application shall be assessed and approved as soon as possible or, if appropriate, the application shall be referred to Council recommending refusal as required by Council resolution, Item No. DIRS 18 Minutes of Ordinary Meeting 27th March 2013.
- 2.6 If the application is refused, the reasons for the refusal will be shown on the determination letter.
- 2.7 Where an application is approved, Council will, where appropriate, require each tree that is removed be replaced with another tree at a minimum purchase size of 15 litres. Where appropriate, use of suitable Australian native trees will be encouraged.

#### 3. GENERAL NOTES

#### 3.1 Appeals

- 3.1.1 Applicants have a right of appeal if they believe:
  - a) Council has erred in its judgement; or
  - b) Council's decision is harsh or unreasonable; or
  - c) Additional information has become available since Council's inspection.
- 3.1.2 An appeal must be lodged within 30 days of the date of Council's decision and must be justified with reports from appropriately qualified consultants.
- 3.2 Exemptions

When the residents are exempt from requiring to seek Council approval to remove trees under clause 5.5 (e) of the Tree Management Policy, Council encourage the residents to replace the trees with appropriate species in an appropriate location within the property where practical.

3.3 Standard of work

Council shall, at all times, require that tree pruning is to be carried out in accordance with Australian Standards AS4373-2007 or current best practice.

#### 3.4 Heritage trees and trees of Aboriginal significance

Trees having heritage and/ or Aboriginal significance shall be assessed in accordance with this procedure and other relevant legislation such as the *Heritage Act* 1977.

#### 3.5 Trees and development

Tree removal on development sites shall be assessed in accordance with Council's Development Control Plan 2008 and other relevant legislation. For controls relating to the protection of trees on development sites, refer to Australian Standards AS4970-2009 and LDCP 2008.

#### 3.6 Trees and neighbours

Council will not become involved in any disputes between neighbours. Where a dispute does arise, the following advice shall be provided to the customer, if appropriate:

- **17.** Discuss the problem with the neighbour in a friendly/ non-confrontational manner. Should the neighbour agree to fix the problem, allow a reasonable time (this will depend on the urgency of the problem) for the neighbour to act;
- 18. Should the neighbour not agree to address the problem, or, after a reasonable time frame has lapsed, concerns can be put in writing to the neighbour. A written document outlining the problem may make the neighbour more inclined to act and can serve as a record of steps taken to have the problem addressed. Any written document should be politely worded and not give a feeling of hostility and may include photographs of the problem;
- **19.** At any stage during the negotiating process a resident may choose to contact a Solicitor and/ or the South West Legal Centre 9601 7777 or the Legal Aid Commission on 96011200 where free legal advice can be obtained or to explore the option of obtaining professional help in mediating with the neighbour;
- 20. At any stage during the negotiating process a resident may choose to use the prescribed process set out in the *Trees (Disputes Between Neighbours) Act* 2006 (TTA2006) the Land and Environment Court. TTA2006 provides a process for resolving disputes between neighbours about trees and hedges. The TTA2006 can be viewed at the following web page or by searching the Land and Environment Court website: http://www.lec.justice.nsw.gov.au/lec/your\_legal\_problem/tress\_and\_hedges.htm

**21.** Council will not become involved in any disputes between neighbours and will not inspect any tree on private land, unless a tree pruning/ removal permit application has been lodged that is signed by the owner of the tree.

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**Attachment B** 



TREE MANAGEMENT PROCEDURE FOR PRIVATE PROPERTY AND LAND MANAGED BY COUNCIL



#### . PURPOSE

4

This procedure is intended to guide members of Council staff in assessing requests to prune or remove trees on Council managed land and planting trees on Council managed land. The procedure is to be read in conjunction with Council's Tree Management Policy.

#### 2. TREE REMOVAL/ PRUNING

2.1 Where a tree or trees located on a Council footpath or in a Council reserve is dead, dying or potentially dangerous, requires pruning or is causing some other problem, Council's Customer Service Centre can be notified on 1300 362 2170. A Council officer with appropriate tree management qualifications will assess the tree and any related concerns and will organise for necessary action to be carried out.

- 2.2 The following factors are taken into account while assessing the request:
  - a) Damage or potential damage to private property, service pipelines or structures;
  - b) Tree/s health, vigour and structural integrity;
  - c) Remaining useful life expectancy;
  - d) Safety;
  - e) Compliance with current streetscape policy or management plan;
  - f) Target area (the area under the tree and frequency of use);
  - g) Visual prominence (the impact removal is likely to have on the visual amenity of an area);
  - h) Historical significance;
  - i) Habitat significance;
  - j) Practical alternatives to removal and cost;
  - k) Potential for effective pruning.

- 2.3 Any of the above factors will not on its own guarantee the removal of subject tree. When reviewing the request/ notification, members of Council staff shall at all times seek to provide a reasonable balance between the interests of the immediate neighbourhood in solving a problem and the interests of the wider community in ensuring the amenity and environment is preserved.
- 2.4 Where a request to prune or remove a tree or trees on Council land is found to be valid and reasonable, or where Council during its own inspections finds that urgent pruning or tree removal needs to be carried out to maintain public safety, Council will organise for that work to be carried out as soon as possible. A risk assessment will be undertaken to determine the priority of the work when arboricultural works are required.
- 2.5 Council will, where possible and practicable notify property owners on either side of the property/ footpath location where the tree is situated, either by letter or telephone prior to the work being carried out.
- 2.6 The trunk of any tree deemed not to be dangerous to be removed shall be clearly painted with a large (X) at least 21 days prior to the possible removal as far as practicable. The tree shall have an A4 sign detailing reasons for removal with a contact number. If there is any safety concern, the process can be accelerated.
- 2.7 Where possible, tree stumps shall be removed within 24 hours of tree removal or as soon as possible where stump grinding equipment is not immediately available. If there is any safety concern, the process can be accelerated.
- 2.8 A replacement tree of a minimum 15 litre pot size shall be planted by Council within close proximity of the removed tree as far as practicable. The replacement tree shall be of the species identified in the Council's Street Tree Master Plan (STM).

#### 3. TREES DAMAGED AS A CONSEQUENCE OF STORMS

- 3.1 Where a tree/trees located on a Council footpath or in a Council reserve has been damaged by a storm event, Council's Customer Service Centre can be notified on 1300 36 2170.
- 3.2 Council Officers in conjunction with the Liverpool SES Unit will inspect the tree/s and take action to make the area safe.
- 3.3 Following the storm event the tree/s will be assessed in accordance with Section 2 TREE REMOVAL/PRUNING of this policy.

#### 4. GENERAL NOTES

4.1 Standard of Work

Council shall at all times require that tree pruning is to be carried out in accordance with Australian Standards AS4373-2007 or current best practice.
Heritage trees and trees of Aboriginal significance

Trees having heritage and/ or Aboriginal significance shall be assessed in accordance with this procedure and other relevant legislation such as the *Heritage Act* 1977.

#### 5. COUNCIL TREE PLANTING

4.2

- 5.1 Council's objectives are to maintain, replenish and, over time, increase the tree canopy on Council land by seeking to:
- 22. Maintain and improve the local amenity;
- 23. Maintain and enhance the local biodiversity;
- 24. Ensure planting next to bushland does not include weed species;
- 25. Consider the need for solar access and wind protection where appropriate;
- 26. Create and/ or reinforce a distinctive streetscape character;
- 27. Enhance the appearance of the built environment;
- 28. Provide planting which requires minimum maintenance;
- 29. Ensure planting is appropriate for the climate and soil conditions of the site;
- **30.** Ensure planting is selected which considers Council's long term maintenance obligations; and
- **31.** Ensure planting near property does not increase the bushfire threat.
- 5.2 Any person wishing to have a tree planted on Council's nature strip or have suggestions for Council's winter tree planting program in Council's Parks and Reserve, can contact Council's Customer Service Centre on 1300 362 2170.

TREE MANAGEMENT POLICY

71 ITEM 03 Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management Technical Guidelines) Attachment 3 Draft LCC Tree Management Strategy - May 2024

## LIVERPOOL CITY COUNCIL

# TREE MANAGEMENT STRATEGY

[INTERNAL DRAFT] 10 MARCH 2024

LIVERPOOL BILV CITY COUNCIL. OOL WEST

### **Document Control**

Date	<b>Revision Number</b>	Revision Details	Issued	Approved
31 August 2023	P1	Internal Draft for Review	RWS	RWS
10 March 2024	P2	Internal Draft for Review	RWS	RWS

## For further information

This strategy was produced by Arterra Design on behalf of Liverpool City Council's Urban Design team, within the City Design and Public Domain department.

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Front Cover Image: View looking east across Lyons Reserve, Horningsea Park, Liverpool NSW. (Source: Arterra)
# EXECUTIVE **SUMMARY**

Liverpool City Council recognises that trees are an important part of our natural and cultural landscape. We are committed to promoting and protecting these important assets. This Tree Management Strategy is a vital part of our tree management commitment. It is a step towards maintaining and managing our trees in a professional, consistent and appropriate way.

Liverpool has a population of over 230,000 people, covers some 305 square kilometres and stretches some 33 kilometres from Georges River and Chipping Norton in the east to the Nepean River and Silverdale in the west. Over 40% of our residents are born overseas. We have over 500 open space reserves and land uses that range from native bushland through to high and low density residential, agriculture, and world class recreation, entertainment and tourism facilities.

We are part of South West Sydney's growth corridor, home to Western Sydney International Airport (Nancy Bird Walton) and the extensive Holsworthy Army Barracks. Liverpool City Centre is the main hub within this large and diverse area.

Trees are an important part of Liverpool. The trees tell the natural and cultural history of our area, reflecting the changes in land use and changes in cultural practices that have helped shape the landscape of the Cumberland Plains and the wider tree population. It is not simply the age, species or size of the trees that makes them important, it is their links to nature, the past, and their relationship with the story of the people and the changing landscapes of Western Sydney.

Council is mindful that the significant green infrastructure of our area, which include some extensive areas of remnant native trees, are some of the most defining and precious elements of the landscape. We must continue to expand, protect, manage and replace our trees in order to pass on a legacy for the enjoyment and benefit of present and future generations.



Image: St Andrews Park, Casula, Liverpool NSW. (Source : Arterra)

"Rich in nature, rich in opportunity, creating community; our place to share and grow."

# MESSAGE FROM

Trees are a vital part of Liverpool City Council's natural and cultural landscape. Council are committed to promoting and protecting these important assets. The Tree Management Strategy is a vital part of our framework and explaining our tree management and urban canopy cover commitment. It is a step towards maintaining and managing our trees in a professional, consistent and appropriate way. Trees provide a very broad range of social, economic and environmental benefits, and help us adapt and become a more resilient community, as we face a changing and warming climate.

Trees and other green infrastructure are some of the most defining and precious elements of our landscape. Council must continue to expand, protect, manage and replace our trees in order to pass on a legacy for the enjoyment and benefit of present and future generations. Council must also reasonably manage our liabilities and foreseeable risks associated with trees.

The Tree Management Strategy establishes the context and importance of trees within the Liverpool City Council area. It outlines their benefits and the relationship to other Council and government policies. The Tree Management Strategy has been designed to assist the Council to proactively manage both public and private urban trees. It is not designed to deal with bushland or natural area trees.

The Strategy analyses the numerous factors, as well other Government policies, that influence tree management and the future planting of trees throughout our community. The Strategy then establishes the goals that Liverpool is setting with regard to Council's tree resources and the strategic directions and then more specific actions that are required to achieve these goals over the next decade and beyond.

# MESSAGE FROM THE CEO



Trees are a vital part of Liverpool City Council's natural and cultural landscape. Council are committed to promoting and protecting these important assets. The Tree Management Strategy is a vital part of our framework and explaining our tree management and urban canopy cover commitment. It is a step towards maintaining and managing our trees in a professional, consistent and appropriate way. Trees provide a very broad range of social, economic and environmental benefits, and help us adapt and become a more resilient community, as we face a changing and warming climate.

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# Acknowledgment of Country

We would like to acknowledge the Cabrogal Clan of the Darug Nation who are the traditional custodians of the land that now reside within Liverpool City Council's boundaries. We acknowledge that this land was also accessed by peoples of the Dhurawal and Darug Nations.

Background Image: Indigenous artwork in Liverpool City Library forecourt, Liverpool NSW. (Source: Liverpool City Council)

6.4

6.5

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Summary of Natural Soils and Vegetation

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# ITEM 03Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management<br/>Technical Guidelines)Attachment 3Draft LCC Tree Management Strategy - May 2024



# 1.0

INTRODUCTION

#### 1.1 Purpose of the Strategy

The Tree Management Strategy has been designed to assist the Liverpool City Council to manage both public and private trees in the Liverpool Local Government Area (LGA). Collectively, trees are the most important component of our urban forest. The Strategy addresses the planning, planting, protection, management and renewal of trees to achieve our vision for a greener, cooler, healthier and inclusive place to live, work and visit.

Tree canopy cover is an essential component of public domain infrastructure that addresses climate change and the impacts of urban heat. It also contributes to the creation of greener and cooler neighbourhoods, enhances the character of the built environment and improves the overall quality of life for residents, workers and visitors.

As part of Council's commitment to increasing tree canopy, and improving tree management this document has been prepared to communicate a clear vision, strategic directions and the respective actions to guide the future of tree management. It identifies the range of considerations required to carry out this commitment and provides an overview of the actions required.

A 'tree' for the purposes of all our documents is typically defined as:

A woody perennial plant greater than 5m tall and with a trunk diameter of at least 140mm when measured at a height of 1.4m above the ground or a canopy spread greater than 4m.

Refer to Tree Management Technical Guidelines - Section 2 - Tree Preservation for further guidance and detail.

Nearly all trees can contribute to our 'urban forest', irrespective of the tree species, origin (native, exotic), location (street, park, garden, school) or ownership (public, private, institutional). This Strategy seeks to support appropriate trees, in all contexts, and to provide Council staff, private developers and other stakeholders such as other government agencies, business owners, and the wider community, with the resources and guidance to assist in this endeavour.

Urban ecosystems, including shrubs, grasses, green roofs and other vegetation, all contribute to 'greening' of the urban landscape and creating diversity, food and habitat for our wildlife. The importance of this other vegetation is well acknowledged, however, it is not specifically addressed within this Strategy. The primary focus of the Tree Management Strategy is our urban trees, rather than native bushland and more natural areas. Particular emphasis is also placed on trees and lands under Council management, where immediate actions can be taken for the broadest community benefits.



Figure 1: View along a tree shaded walkway in Dunumbral Park alongside Spencer Drive, Cecil Hills. (Source : Arterra)





## 1.2 Benefits of Trees

There is a considerable body of recent research confirming the extraordinary benefits of urban trees as part of our overall green infrastructure. Trees provide a broad range of social, economic and environmental benefits.

In our urban areas in particular, well grown and established trees contribute significantly to the character and create a "sense of place". Our most highly valued streetscapes, plazas and parks commonly have excellent overarching tree canopies or relatively closely spaced trees. Trees have the ability to transform and beautify our streets and define the villages and precincts we all value. They can be just as important, if not more important, as the surrounding built forms in many locations. They provide enclosure and comfort, green outlooks, habitat and a 'softening' of the surrounding buildings.

As a targeted growth centre, the Liverpool LGA is set to increase significantly in population and density over the coming decades. Higher density living comes with many challenges and impacts on our health and well-being. A thriving urban forest of street trees, park trees and private trees, can help counter many of these challenges through:

- reducing the urban heat island effects and moderating hot and cold winds and other weather extremes;
- providing cooling and valuable shade to pedestrians and buildings;
- increasing longevity of pavements and road surfaces due to increased shading;
- interception and storage of rainwater and stormwater in their leaves and roots and the soils that support them;
- improving air quality by temporarily filtering particulate matter and absorbing polluting gases;
- production of atmospheric oxygen and the uptake (and storage) of carbon dioxide;
- provision of habitat and resources for native fauna, birds and insects; and
- making important contributions to general human health, calming and wellbeing.

The most critical and overarching benefit that trees can provide in the Western Sydney context is to "facilitate resilience to heat by providing shadow and evaporative cooling" (Soltani & Sharifi, 2017).

#### Some of the environmental benefits of trees include:

- Carbon sequestration and storage. One large evergreen tree can sequester 2351kg of  $\text{CO}_2$  in its life with an average of 98kg annually. It also releases enough oxygen back into the atmosphere to support two people's needs.
- Biofiltration of gaseous pollutants by absorbing them • through stomates in the leaf surface and permanently converting them inside the leaf. Importantly, this includes sulphur dioxide, carbon monoxide, nitrogen dioxide and ozone
- · Short term removal of particulate matter from the air, which can then be safely washed away later by rain.
- Use of nutrients like nitrogen, phosphorus, and potassium which can otherwise pollute our creeks and waterways.
- Intercepting and reducing rainfall intensity reaching the ground and slowing down stormwater runoff and thereby helping to reduced erosion of soils and creeks.
- Providing vital habitat and a food source for urban fauna and vital linkages to wider bushland and creeks .

#### Some of the human health, well-being and social benefits of trees include:

- Creation of feelings of relaxation, optimism and wellbeing. Hospital patients, for example, are shown to recover more quickly and with fewer complications when in rooms with a view of trees. Workers and students are shown to be more productive when their environments have views to trees
- Improving outdoor comfort and amenity as street tree canopies can shade pedestrians, diminish traffic noise and reduce glare. Trees can screen unwanted views including softening the presence of towers and other large buildings that would otherwise dominate some streets.
- Use of deciduous trees within our commercial centres and other residential streets, to permit sun light and warmth to reach the streets and adjoining outdoor dining areas, houses and apartments during winter.
- Calming traffic, slowing vehicle speeds, and providing a buffer between pedestrians and cars.
- Improved sociological benefits with studies showing correlation with well planted areas and reduced reliance on social services, lower domestic violence, and strengthened community ties.
- Defining precincts and links with history. Tree lined streets can provide way finding and orientation cues and contribute to urban character. Large trees, or those with distinctive forms, can serve as landmarks in the landscape, helping to demarcate gateways, or to define streets and important precincts.
- Providing seasonal interest and natural beauty through their foliage and interesting leaf patterns, flowers, bark, fruit and canopy generally. Providing a constant link to 'nature' and a source of delight.

#### Some of the economic benefits of trees include:

- Improving economic performance by increasing the attractiveness of retail, dining and tourism areas. People typically will want to visit, linger, shop and dine longer in attractive and tree-lined streets.
- Reducing energy consumption, through shading of pavement, cars and buildings in summer. Appropriately positioned and sized winter deciduous trees can also assist with increased sunlight and warmth in winter, reducing the need for artificial heating in the few cooler months
- Reducing the "urban heat island" effect reducing the need for artificial cooling in the warmer months.
- Attracting higher rents and sale prices. Shops, apartments and housing that are located in well planted areas are usually more desirable and can attract greater returns

Beyond the 'work' that trees perform, in cleaning and cooling the environment and supporting life, we should not forget that we have always planted and cared for them because they are a source of joy to humanity; for their aesthetic beauty, the sense of place they create and for the strong connection they provide with the natural world.

"...urban forests may not provide critical habitats for threatened or endangered animals in the same way that more remote or larger nature reserves might. Similarly, these urban forests may sequester only a small fraction of the carbon sequestered by managed plantations and natural forest systems. However, an increasing number of us live an "urban life", so it is this urban forest that provides the best, or most frequent, opportunity for society to interact with nature, to be environmentally aware in the truest sense, to directly observe the impacts of climate change, and to feel empowered that your urban landscape contributes in some small way to a better world."(Livesley, Escobedo, & Morgenroth, 2016)





Figure 2: Discovery Green, Houston, Texas. (Source : Arterra)





14 LIVERPOOL CITY COUNCIL TREE MANAGEMENT STRATEGY



The concept that humans have a biological need to connect to nature is called biophilia. American biologist E. O Wilson surmised in 1984 that we are 'hardwired' to affiliate with the natural world and just as our health improves when we are in it, so our health suffers when we are divorced from it. In 1950, 749 million people lived in urban areas, by 2014 there were 3.9 billion. By 2050 it is forecast that 75% of the world's population will be living in urban areas, which means there will be over 9 billion people living in the worlds cities. Australia has one of the highest urbanised populations in the world, with around 90% already living in cities that are to be the terms and large towns and increasing. Cities are full of excitement, innovation and energy, but they are also stressful. The more we live in them, the more stressed we become, and the sicker we get. This results in more:

- heart attacks
- strokes
- cancer
- mental illness
- more addictive behaviours
- loneliness
- depression
- anxiety

The World Health Organisation calls 'stress' the health epidemic of the twenty first century. Finding a way to manage this is critical to our health and wellbeing and trees and other greenery can help immensely. Incorporating biophilic elements into the built environment can have profound, measurable benefits for human performance, including improved:

- productivity
- emotional wellbeing
- stress reduction
- learning
- healing

Biophilic based design can foster an appreciation of nature, which can lead to a greater protection of natural areas, species conservation and pollution prevention (Piacentini, R., 2018). Data now proves that connecting with nature for as little as a couple of hours can:

- reduce blood pressure
- lower stress
- improve cardio vascular and metabolic health
- lower blood sugar levels
- improve concentration, memory and attentiveness lift feelings of depression improve pain thresholds

- improve feelings of energy
- boost immune systems by increasing the count of the body's natural killer cells
- increase anti cancer protein production
- help people loose weight (Li, 2018).

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# Introduction Strategic Framework

#### 1.3 Strategic Framework

The Tree Management Strategy aligns with Liverpool City Council's Integrated Planning and Reporting (IP&R) framework, which is centred around the community's aspirations for the future. These are a set of integrated plans that express the community's vision and goals for the Liverpool LGA, the strategic actions to achieve them, and a reporting structure to communicate progress to Council and the community.

The framework begins with the Community Strategic Plan (CSP) which is supported by a Resourcing Strategy comprising a 10-year term Financial Plan and required workforce strategy and asset management plans. The Tree Policy, Tree Management Strategy (this document) and Tree Management Technical Guidelines, collectively form Council's tree management framework. Figure 4 illustrates how this framework relates to Council's broader IP&R framework, and an overview of our tree management framework is outlined below.

Our tree management framework is aligned with the important NSW Government polices, strategies and plans relating to Western Sydney, as part of the vision for Greater Sydney. This includes the:

- Western City District Plan Our Greater Sydney 2056 (updated 2018)
- Western Sydney City Deal Smart Cities Plan
- A Metropolis of Three Cities Greater Sydney Regional Plan

A complete listing of additional references and resources used in the preparation of this Strategy are included in Appendix 6.3

The Tree Management Strategy is part of a suite of documents which comprises the:

- 1. Tree Policy
- 2. Tree Management Strategy

3. Tree Management Technical Guidelines

#### **Tree Policy**

The Tree Policy sets out Council's overarching vision and commitment to the management of trees in the Liverpool LGA, and is consistent with the community's aspirations. Its purpose is to maximise and promote the preservation and proper management of existing trees within Liverpool, the planting of new trees and the protection and expansion of our overall tree canopy cover.

#### Tree Management Strategy (this document)

The Tree Management Strategy, assesses our tree assets, analyses internal and external factors affecting the management of trees, and develops strategic directions. These then feed into respective actions to guide us in the realisation of our core goals, being:

- To establish best practice standards and processes for mitigating the effects of climate change and urban heat, through increased and improved tree canopy.
- To highlight the importance of canopy cover in creating a healthy and more liveable and resilient urban environment.
- To increase the diversity of trees within our urban areas while still selecting trees that are suitable for the local conditions and future climate.
- To improve the health and longevity of our trees.
- To improve the soil and ground conditions to enable trees to grow successfully.
- To identify opportunities to maintain and increase canopy cover.
- To improve our urban ecology.
- As a tool to obtain funding for tree planting initiatives.

#### **Tree Management Technical Guidelines**

The Tree Management Technical Guidelines is vital part of the framework. It is a more technical document providing the practical and detailed guidance and procedures for carrying out all tree-related management decisions including requirements for tree related design, selection, and installation and then the procedures for the assessment, management and maintenance of our trees.

The guidelines specifically provides:

- · directions and standards for managing trees and treerelated requests:
- actions and standards required for the removal, pruning and planting trees on Council land; and
- standardised approached to ensure uniformity and consistency in the maintenance and management of trees on Council land.



LIVERPOOL CITY COUNCIL TREE MANAGEMENT STRATEGY

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Introduction Strategic Framework



# How the Tree Management Strategy is addressing the Community's Priorities

#### SOCIAL

- Improving the quality of public places and creating comfortable and safe environments conducive to social interaction and connection
- Respecting historically important trees and landscapes
- Connecting with Country
- Improving our health and wellbeing

#### **ENVIRONMENT**

- Addressing the impacts of climate change
- Mitigating the effects of urban heat
- Improving the health of the urban forest
- Increasing biodiversity
- Maximising efficient use of our water resources
- Creating habitat linkages, revegetating water way corridors and healing Country
- Increasing sustainability and resilience within a changing climate

#### ECONOMIC

- Decreasing liability through tree risk assessments and risk mitigation
- Reducing summertime energy bills through improved shading
- Reducing road and pavement maintenance costs, through improved shading
- Increasing property values, through creating more desirable places to live

#### LEADING THROUGH COLLABORATION

- Council increasing canopy cover through collaboration with the community
- Council collaborating with private owners and other government agencies that manage trees in our LGA

## Introduction Assessment Methodology

## 1.4 Assessment Methodology

The Tree Management Strategy was developed through a process of data collection and analysis of our existing urban tree population and their growing environments. It included analysis of the challenges Council is facing in maintaining a thriving urban forest; benchmarking of current best practices in tree management; and the identification of key opportunities to improve adverse conditions experienced by trees throughout our area.

Desktop data collection and review was undertaken from the following sources:

- General tree canopy cover data published by the NSW Government for 2016 and 2019.
- Councils Geoscape 'Trees' digital dataset which digitised canopy cover information from both satellite and aerial imagery for use in our geographic information system (GIS).
- Council's local government area street, park, flooding and land use zone mapping obtained from our GIS.
- More detailed reviews of existing canopy cover and analysis undertaken on a random selection of parks and reserves throughout the LGA.
- Soil mapping information published by the NSW Department of Planning, Industry and Environment, sourced from eSPADEv2.2 web application (https://www. environment.nsw.gov.au/eSpade2Webapp/).

- Climate data from the Bureau of Meteorology.
- Current and historic aerial photography.

Data on the nature and quality of existing trees throughout the LGA (both Council-managed and others) and a rudimentary audit of Council's tree management practices, were collected as follows:

- Windscreen survey (systematic observation undertaken from a moving vehicle) of our streetscapes and parklands, for each suburb.
- Walking survey (systematic observation undertaken on foot) of some selected areas within each suburb. The character and quality of the areas and trees were recorded photographically. Excellent examples of tree management practice were recorded in detail as were particularly poor examples and notable and recurring tree-related issues.
- Meetings and focus groups held between Council staff and external arboricultural consultants for gap analysis in relation to tree management (for example a review of the current tree management practices, formulation of the ideal future practices and identification of key opportunities for improvements).

Benchmarking of best practice in tree management was undertaken by reviewing a range of Tree and Urban Forest strategies, management and statutory documents, from various Councils in NSW and elsewhere. The review focused on examples from the Sydney Metropolitan area. A full list of the documents is provided in Appendix 6.3.



Figure 6: Existing mature native trees retained during recent redevelopment and more recent tree planting undertaken at Newgate Park, Elizabeth Hills (Source : Arterra)



## Introduction Community Engagement

#### 1.5 Community Engagement

The Strategy has proceeded from the vision and priorities of our community as outlined recently in the Community Strategic Plan, Our Home, Liverpool 2027. The priorities outlined in the above were formulated through the active engagement of government, business, the not-for-profit sector and our local residents.

The community voiced the need for high-quality, sustainable urban environments to create a great place to live, work and play, including:

- Creation of more green spaces
- Creation of well-planned, attractive and people-friendly urban environments.
- Encouraging sustainability.
- Protecting and enhancing bushland and rivers and visual amenity.
- Planting and preserving trees on private property.
- Air quality improvements.
- Well managed use of our resources.
- Striving for best practice in Council processes.

Preparation of a comprehensive tree management framework is one of a series of processes undertaken in relation to delivering a greener and more comfortable urban environment for our community. To ensure maximum input from the community, the suite of documents comprising the framework were placed on exhibition for a period of 4 weeks, between x May 2024 and x June 2024, and submissions from the public invited.

In order to convey the key ideas of the framework to parts of the community from culturally and linguistically diverse backgrounds, the executive summary was translated into the 10 most common community languages of the LGA and provided as part of the exhibition materials. Additionally, the Gandangara, Deerubin and Thrawal Local Aboriginal Land Councils were specifically invited to review and comment.

Council received XX formal responses, and summary details are included in Appendix 6.2. Additionally, informal feedback was provided through conversations with the Mayor, Councillors and Council staff and through other platforms such as social media. The entirety of the feedback was considered in the finalisation of our Tree Policy and Tree Management Strategy.

There is interest from some sectors of the community for greater involvement in tree planting and maintenance. Council can accommodate this by supporting 'greening' activities on private property, within identified bushland regeneration areas and in supervised community planting days. In relation to street trees, where larger trees are



Figure 7: View along at street at Voyager Point . (Source : Arterra)

involved, detailed specifications, as well as technical complexities related to above and below ground services, Council needs to ensure any tree planting and maintenance is undertaken only by qualified personnel.

Some other ways in which local residents are encouraged to be involved in our tree management are to:

- Look out for opportunities where additional street or park trees may be planted in their locality and report them to Council.
- Assist Council with watering around the base of newly planted street trees, and help maintain the immediate surrounds of our trees in a tidy condition.
- Report any problems or damage that are noticed and associated with Council-managed trees.
- Report any concerns regarding trees that may need pruning or are potentially causing clearance issues or damage to public or private infrastructure.
- Participate in supervised community planting days, where particular areas may be targeted for new tree installations and the community can participate in planting, and early establishment of the young trees and increasing our area's canopy cover.



This section of the Strategy identifies the relevant current context surrounding Liverpool City Council's urban trees and it's urban forest.



Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management Technical Guidelines) Draft LCC Tree Management Strategy - May 2024

Attachment 3 **EXISTING CONDITIONS** 2.0

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# 2.0

# **EXISTING CONDITIONS**

#### 2.1 Our Urban Character

Liverpool LGA is a large local government area in Western Sydney, situated between the Georges River in the east and the Nepean River in the west. The landform generally comprises the low-lying lands of the Cumberland Plain with gently undulating plains and low hills.

A series of creeks and smaller drainage lines, cross our area in an approximately north-south orientation, the main ones being South Creek, Kemps Creek, Badgerys Creek, Cabramatta Creek and Brickmakers Creek. There is a somewhat elevated area running north-south from Cecil Hills towards Leppington and the southern portions of the regional Western Sydney Parkland is situated to west of this low but prominent ridge.

Liverpool incorporates 43 suburbs and features a wide range of urban, suburban and rural landscapes. The highest concentration of development lies in the eastern part of Liverpool LGA and is surrounding the Liverpool City Centre which has emerged as Sydney's third CBD. In 2018, 25 hectares in the heart of the city were rezoned to Mixed Use to boost the economy and foster a greener, more walkable city centre. The eastern part of the Liverpool LGA includes extensive residential development including low, medium and high density. Residential land uses amount to around 20% of the Liverpool LGA. To the western portions, the landscape generally retains a more rural and semi-rural character. It includes rural lands, primary production lands and small lot primary production.

The largest portion of the Liverpool LGA is zoned as Special Activities and includes areas set aside for special purposes. These include the substantial land holding of the Holsworthy defence training site in the southeast; the Western Sydney International (Nancy Bird Walton) Airport, and the planned Aerotropolis and lands allocated for associated enterprise activities, in the northwest. The Special Activities zoning represents 31% of the LGA.

Council manages less than **9%** of the total LGA area, primarily being the Council controlled public parklands, drainage reserves and local roadways. It is the entity primarily responsible for the planting and maintenance of trees on these lands.



Figure 8: Liverpool urban forest has diverse range of trees and conditions, ranging from our CBD, parklands, low density residential development through some extensive industrial and warehousing areas. (Source: Liverpool City Council)





Figure 9: Liverpool is comprised of a diverse range of landuses and conditions with much of the western areas dominated by rural activity and large lot residential development. (Source: Liverpool City Council)



Figure 10: Pie chart showing the general land area breakup in the Liverpool Council area. The vast majority of land is in private or other government control. Our parks and reserves represent around 11% of our area and roads make up around 8%. Most roads and parks are managed by Council and represent a relatively small percentage of the overall area. (Note some roads and parks/reserves are managed by other government departments). (Source : Arterra)



The character of the Liverpool LGA is heavily influenced by landform, major features like the rivers and creeks and the intrinsic landuse types that make up our area. Figure 11 illustrates the diverse breakup of different land uses that currently exist and Figure 12 illustrates the relative proportions of the major landuse type categories.



Figure 11: Diagram illustrating the general landuse area breakup in the Liverpool City Council LGA. The main landuse that dominates the make up our area is special uses which include the substantial areas for the proposed international airport, the Holsworthy defence land, motorways and schools. The other main areas include residential uses (at 21%) and farmland and rural pursuits (at 20%). (Source: Liverpool City Council)



Figure 12: Pie chart showing the broad landuse area breakup in the Liverpool Council area. The main landuse that dominates the make up our area is special uses which include the substantial areas for the proposed Western Sydney International Airport, the Holsworthy defence land, motorways and schools. The other main areas include residential uses at 21% and farmland and rural pursuits representing 20%, but mainly in the western portions. (Source: Arterra)



Table 1 Broad categories of land use based on zone type			
Zoning/ Land Use Type	Area (ha)	% of LGA	
Special Activities	9414	31%	
Residential	6309	21%	
Rural	6126	20%	
Recreation/Environmental	4593	15%	
Industrial	2314	7%	
Business	1867	6%	
TOTAL	30,623	100%	



Figure 13: Liverpool has a very diverse range of landuses including large areas dedicated to special uses like Holsworthy defence land and the future international airport. (Source: Liverpool City Council)



Figure 14: Liverpool has a very diverse range of landuses that create differing opportunities and constraints for canopy cover and managing trees. (Source: Liverpool City Council)

# EXISTING CONDITIONS



Figure 15: Recreational and Environmental land use makes up around 15% of the LGA. The pie chart shows the relative proportions of these lands, in terms of their current broad classifications. Although included here for context, 60% of all public open space in the LGA is managed by others, including NPWS area of Bents Basin and Western Sydney Parklands. Council manages around 40% of Liverpool LGA's overall public open space and park area. (Source : Arterra)



**Existing Conditions** 

Table 2 Broad categories of parks and open space Park Type Area (ha) % of Parks National Parks and Wildlife 543 16% Reserve Western Sydney Parklands 1529 44% Regional and District Parks 358 10% Regional and District Parks 263 8% - Sportfields Local and Neighbourhood 441 13% Parks Drainage Reserves 72 2% Openspace - Streetscapes/ 16 <1% Road Closures Openspace - Unclassified 217 6% TOTAL 3,440 11% of LGA

Figure 16: View Council's extensive park areas running along the Georges River at Chipping Norton. (Source : Arterra)





Figure 17: The extensive bushland and parks associated with the regional Western Sydney Park makes up more than 40% of the parklands of Liverpool LGA. These areas are a valuable resource, used intensively by our community, and are managed by Western Sydney Parklands Trust, rather than Council. (Source : Arterra)



Figure 18: Parks and open space constitute 15% of the LGA. The most significant 'band' of parkland being associated with the regional Western Sydney Parklands, running north south and centrally located within our area. (Source : Arterra)

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EXISTING CONDITIONS



#### ROAD AREA BY ROAD CLASSIFICATION

Figure 19: Pie chart showing the road reserves which make up around 8% of the total Liverpool LGA, although some of that overall percentage is also controlled and managed by the State Government such as the motorways and state roads. (Source : Arterra)



Figure 20: Over 70% of our road reserves are local access streets that are primarily managed and controlled by Council. This is where Council can make a positive contribution to increasing our canopy cover and improving the liveability and sustainability outcomes. (Source : Arterra)

Table 3 Broad categories of roads			
Road Type	Area (ha)	% of Parks	
Motorways	247	10%	
State Roads	393	16%	
Regional Roads	88	4%	
Local Roads	1,713	70%	
Laneways	6	<1%	
TOTAL	2,446	8% of LGA	





Figure 21: Many of our more major and high profile roadways are controlled and managed by the state government rather than Council. Council can still have an influence on tree planting and management on these streets but often they are heavily affected by priorities and constraints that inhibit good tree planting such as truck and bus clearances, overhead power lines, extensive driveways, utilities and services, bus stops, signage and traffic site lines and other safety clearances. (Source: Arterra)



Figure 22: Many of our major motorways are controlled and managed by the state government rather than Council. Due to the nature of these corridors, many of the more recently constructed motorways actively contribute to our canopy cover and habitat connectivity through extensive roadside tree planting. (Source: Arterra)

EXISTING CONDITIONS

# Existing Conditions Existing Trees and Canopy Cover



Figure 23: Canopy cover and trees are vital to creating a resilient urban area. (Source : Arterra)

# 2.2 Existing Trees and Canopy Cover

Our trees are spread across our natural landscapes, rural areas and our urban and residential settings. Those trees that lie within our more natural, rural or bushland settings are important contributors to our canopy coverage but are not specifically intended to be addressed within this Strategy, except to ensure that management actions do not conflict with the care and protection of these important natural areas and the trees within them. Our focus is particularly on trees within more urban settings which comprise both public and privately managed trees. They include trees that are directly managed by Council such as our street or park trees, and also trees managed by other agencies such as trees in schools or hospital sites, residential development, business or industrial properties.

Measuring our existing canopy coverage is an essential first step in understanding the extent and concentration of the LGA's trees. Most importantly it allows us to benchmark success as well as recognise areas where we may be falling short and need to address as a priority. Our current canopy cover data, drawn from the relatively recent Geoscape tree canopy cover data set, provides the basis on which we have:

- determined our strategic directions moving forward;established suitable and realistic aspirational canopy
- cover targets; andchosen to focus our limited resources.

Table 4 Existing Canopy Cover Across the LGA by Broad Landuse Type				
Zoning/ Land Use Type	Area (ha)	Landuse as % of LGA	Existing Canopy Cover as % of the Landuse	
Special Activities	9,414	31%	42%	
Residential	6,309	21%	9%	
Rural	6,126	20%	19%	
Recreation/ Environmental	4,593	15%	28%	
Industrial	2,314	7%	6%	
Business	1,867	6%	5%	
TOTAL	30,623	100%	23%	

Council-managed parks and roads are two key areas where responsibility for trees and canopy cover lies wholly with Council. Roads make up 8% of the LGA and over 70% of these are local roads and laneways. Council parks and reserves are only around 4% of the total area of the LGA. They include our district parks and sports fields, neighbourhood parks and other recreation areas, drainage reserves and other general open spaces. The figures for tree canopy cover across our roads and parks, varies greatly depending on type of use. For example, and as expected, sports fields have a small fraction of tree cover compared to our more passive recreation areas or bushland reserves.



**Existing Conditions** Existing Trees and Canopy Cover



Figure 24: Canopy cover across the Liverpool LGA, showing tree cover in green and highlighting those areas with a more obvious lack of trees. (Source: Liverpool City Council)

Calculated and interpolated existing canopy cover figures, are shown in the tables below. They are a fair but approximate indication of our existing canopy cover within roads and parks and their relative percentage cover .

Table 5 Existing Canopy Cover by Broad Category of Parks and Open Space			
Park Type	Area (ha)	% of Total Parks	Existing Canopy Cover as % of the Parks
National Parks and Wildlife Reserve	543	16%	45%
Western Sydney Parklands	1,529	44%	24%
Regional and District Parks	358	10%	32%
Regional and District Parks - Sportfields	263	8%	8%
Local and Neighbourhood Parks	441	13%	18%
Drainage Reserves	72	2%	57%
Openspace - Streetscapes/ Road Closures	16	<1%	50%
Openspace - Unclassified	217	6%	66%
TOTAL	3,439	11% of LGA	29%

It is worth noting that these are simply pre-existing data figures based on historic data capture. Further and more detailed canopy cover analysis occurs within Section 3.3 where we analyse these statistics further for the purpose of generating our future canopy cover aspirations and targets.

Table 6 Broad categories of roads			
Road Type	Area (ha)	% of Total Roads	Existing Canopy Cover as % of the Roads
Motorways	247	10%	17%
State Roads	393	16%	8%
Regional Roads	88	4%	10%
Local Roads	1,713	70%	9%
Laneways	6	<1%	9%
TOTAL	2,447	8% of LGA	10%



### **Existing Conditions** Our History

#### 2.3 Our History

The original inhabitants of the Liverpool area were the Cabrogal (Cah-bro-gal) people. They occupied the Liverpool and Cabramatta areas and spoke the 'Darug' language. The Cabrogal name derives from the estuarine teredo or shipworm (the co-bro) which served as a dietary staple for the Aboriginal people of the area. Cabramatta Creek at Liverpool is literally 'creek of the cabro' (Kelly, 2007).

On 7 November 1810 Governor Lachlan Macquarie founded Liverpool and named it in honour of the Earl of Liverpool, establishing it as a major convict administrative centre. Macquarie planned Bigge Square (later known as Bigge Park) as the town common. It was an allotment of 6 acres intended to be a Public Market Place and location of an annual fair. It was centrally located and surrounded by important public buildings such as the hospital and the gaol. Emancipated convict and architect Francis Greenway, designed St Luke's Anglican Church and the old convict Hospital, both of which remain as two of Liverpool's most significant buildings.

As European settlement expanded and competition for resources grew, tensions also increased between white settlers and Aboriginal people. Major clashes occurred that led to the rapid dislocation of local Aboriginal groups. Remnants of the Cabrogal clan remained in the area in the 1840's, with many individuals being employed by local landholders. Employment and intermarriage ensured the survival of the Darug in the Liverpool region. The end of transportation in 1840s, led to the winding down of the convict system and economic decline for Liverpool largely due to the loss of the labour source (Casey and Lowe Associates, 1999). By 1857 Liverpool was no longer the main town in the district as Campbelltown was beginning to increase in importance.

The coming of the railway, opened in September 1856 and the electric telegraph in 1858, provided speedy, safe transport and communication. The railway brought trade and industry to the town and began the transformation of Liverpool into a major regional city.

By the 1870s settlement in the township had not spread far beyond the nucleus of dwellings established in the 1820s. Larger estates were subdivided, and the population doubled during the 1880s. As farming developed, grains largely disappeared, and dairying took over. A number of orchards and vineyards were also located in Moorebank, Holsworthy and Casula, during this period. A series of smaller service centres emerged, to cater for the local farming communities, including the hamlet of Bringelly, the villages of Luddenham and Rossmore and 'town' of Cabramatta (Kass, 2004).



Figure 25: Long before colonial occupation, indigenous Australians managed and utilise the lands of Liverpool. There may still be occasional trees that have significance to aboriginal culture. This may be because they relate to a significant cultural site or they may be remnant 'scar trees' where bark was potentially removed for shields and other practices. (Source: National Library of Australia - Joseph Lycett circa 1828 - Aboriginals hunting kangaroo with fire)



**Existing Conditions** Our History



Figure 26: View of Georges River near Liverpool NSW in 1819, the property of G Johnston Esqire. (Source: SLNSW\_FL3322835).



Figure 27: The 1824 Lycett image of Liverpool shows a well-ordered township with rolling pasture lands, often surrounded by extensive native trees and bushland. (Source: SLNSW\_FL12628688)



Existing Conditions Our History



Figure 28: Military camp at Liverpool, circa 1940s. (Source: SLNSW\_FL1444606)



Figure 29: Aerial view of Green Valley in 1962, showing the early stages of extensive public housing development. (Source: SLNSW\_FL8808337)



# **Existing Conditions Current and Future Development**

The first World War brought extensive military training activities to Liverpool and German prisoners of war were held at Holsworthy. The Holsworthy-Moorebank area was again used during World War II to train and house thousands of troops. The Army has maintained its long association with the Liverpool community through the extensive Holsworthy barracks and field training establishments.

Liverpool was declared a city in 1960. Significant growth occurred in the 1960s when the Green Valley Housing estate (comprising the suburbs of Ashcroft, Busby, Cartwright, Heckenberg, Miller and Sadleir) was established. It was the largest single housing scheme attempted to that date, with 7,464 cottages, flats and units constructed within a five-year period (1961-1965). (Pollon, 1996)

The rapid growth of the Liverpool LGA over more recent years has been fuelled by the development of housing in urban release areas providing affordable home-owning opportunities for families and couples from the south western suburbs of Sydney. The population in 2023 is estimated to be 245,902 and forecast to increase to 371,303 by 2041, representing a greater than 50% increase.

#### 2.4 **Current and Future Development**

This role and function of Liverpool LGA as a region for urban expansion is expected to continue as part of the Western District Plan for Greater Sydney, especially given the impact of the future development of the Western Sydney (Nancy Bird Walton) Airport, and its surrounding infrastructure and supporting industries.

Further growth is also anticipated through new urban release areas and redevelopment and densification in more established areas. Growth fronts are currently identified at Edmondson Park, Austral and Leppington. Older suburbs, such as Cartwright, Busby and Sadleir, are also likely to undergo regeneration over the next 15 to 20 years with opportunities for lot consolidation and re-development of more medium density town housing, units and apartments.

Existing development methods associated with current patterns of outer lying urban release lands, are often not conducive to the protection of existing trees nor the establishment or expansion of tree canopy. Small sized allotments, in combination with the tendency to build very large residences, results in extremely limited opportunities for tree planting within the private property.

The constraints for tree planting and canopy coverage under the existing patterns of new residential development need to be better addressed if the growth areas are to be cool, green and healthy places to live.



Figure 30: Current patterns of urban release lands, are often not conducive to the protection of existing trees or the establishment or expansion of tree canopy Small sized allotments, in combination with the tendency to build very large residences, results in extremely limited opportunities for tree planting on private property. (Source: Liverpool City Council)

This section of the Strategy analyses the key factors that can influence tree management and the future planting of trees throughout our community.
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# ANALYSIS AND APPRAISAL

3.0

# 3.0

# ANALYSIS AND APPRAISAL

# 3.1 A Changing Climate

#### Changing Weather patterns

Climate change refers to the long-term shifts in temperature and weather patterns (United Nations, n.d.). The average temperature of the Earth's surface is now about 1.1 °C warmer than any time in the last 100,000 years and there is overwhelming evidence for human-induced global warming. Higher average temperatures are only one of the results of climate change. Weather data from 2019, our hottest year on record, illustrates the extent of the impact of our changing climate.

Weather effects are likely to include more intense and longer-term droughts, water scarcity, flooding, catastrophic storms and increased high winds. Other consequences related to climate are potentially severe bushfires and declining biodiversity.

The key risks to our tree resources from climate change are summarised below:

- Decline in health for some existing tree species better suited to Liverpool's historic climate.
- Premature death of some trees that are not tolerant of heatwaves or associated water stress. This is particularly a concern for younger trees that have not yet fully established or older trees that may already be declining.
- Impacts on the ability to plant and numbers of new trees planted at times of potential water restrictions.
- Increased impacts from pests as higher temperatures may increase their reproduction rates and improve their ability to survive and thrive over winters.
- Increased disease impacts with temporary inundation improving the environment for pathogens that may cause root rot and wood decay.
- Instability from high winds and heavy rains, and the potential increased risk for branch and whole-of-tree failures.

#### Emissions Reductions and Net Zero Carbon Targets

Council has adopted a Climate Change Policy (2023) and developed a Climate Action Plan. This has 3 principle commitments.

- 1. Achieve net-zero carbon emissions from Council operations by 2050.
- 2. Provide effective and strong leadership to the Liverpool community in responding to climate change and building a sustainable city.
- 3. Assist our community to reach the NSW target of netzero emissions by 2050.

As part of the above policy Council are committed to "incorporating best practice urban heat resilience and green infrastructure, including increased canopy cover, street vegetation and urban heat refuges".



Figure 31: Australian Mean Temperature Decile Map — 2019 (Source: Australian Bureau of Meteorology 30/1/2020)



Figure 32: Australian Rainfall Decile Map — 2019 (Source: Australian Bureau of Meteorology 30/1/2020)



Figure 33: Australian Mean Temperature Anomaly— 1910-2019. (Source: Australian Bureau of Meteorology 30/1/2020)



# Analysis and Appraisal A Changing Climate

Green infrastructure must be strategically applied to enhance biological and ecological functions at a range of scales. When designed and applied properly, it should help regulate flows of water, energy and materials that maintain urban ecological functions with a definite view to progressing towards carbon neutrality.

Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide (CO<sub>2</sub>) and other greenhouse gas emissions occur in the coming decades. Limiting human-induced global warming to a specific level requires limiting cumulative CO<sub>2</sub> emissions, reaching at least 'net zero' CO<sub>2</sub> emissions targets, along with strong reductions in other greenhouse gas emissions (IPCC, 2021).

Many global policies and targets are now striving to achieve carbon neutrality worldwide. For example, the Paris Agreement sets out a global framework to avoid dangerous climate change by limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C. It has strongly outlined a target of net zero carbon emissions by 2050.

Although changes in energy and emissions are key, the uptake of carbon is also a vital component. For example, one large tree can sequester 2351kg of  $CO_2$  in its life (taking up on average 98kg annually). If all new projects are designed to meet such specific targets at their core, then over their foreseeable life they could potentially sequester more  $CO_2$  than they cause to be emitted via their construction and significantly further our cause towards a carbon neutral future. Successful tree planting, expanded tree planting and maintenance and protection of our existing trees is absolutely central to this goal.

#### The Urban Heat Island Effect

The increased incidence of climate extremes, due to climate change, affects all parts of the LGA. However, heavily developed places such as city centres or densely built-up industrial sites are far more affected, due to what is known as the 'urban heat island effect'.

This phenomenon is caused by the prevalence in cities of heat absorbing materials such as dark coloured pavements and roofs, concrete, urban canyons trapping hot air and a general lack of shade and green space. This results in urban areas being significantly warmer that surrounding rural areas. Temperatures in cities can be up to 4°C higher than surrounding suburbs, during the day, and in the evenings they can be up to 12°C higher. This can have dire consequences for the most vulnerable in our communities such as the elderly, lower socio-economic groups and the young. An Australian research project, carried out in Adelaide, found differences in temperatures between urban and rural areas of up to 5.9 °C (Soltani & Sharifi, 2017, pp. 529-538). During heatwaves, "temperatures in western Sydney, which have less green cover, are sometimes 10°C higher than in eastern Sydney", (NSW Government).

#### URBAN HEAT IMPACTS ALL ASPECTS OF OUR CITIES



Figure 34: Urban heat results in a range of impacts to people's health, the natural and built environments and eventually impacts the economy as well. (Source: WSROC - Turn down the heat, 2018)



Figure 35: Contrasting the number of days over 35 °C, between eastern and western suburbs of Sydney. Projections suggest that by 2050, the Liverpool LGA may experience as many as 20-25 days per year with temperatures over 35 °C and by 2090 this may be over 50 days. (Source: The Australian Institute/CSIRO).

ANALYSIS & APPRAISAL





Figure 36: Thermal mapping of two areas over Glebe in January 2019 illustrating the reductions in temperature and substantial cooling benefits of trees and urban canopy cover. The upper image over St Johns Rd, the lower image indicating nearby and well treed Westmoreland St. (Source: City of Sydney Greening Strategy 2023)

#### **Urban Heat Mitigation**

Well established and larger canopy trees can facilitate cooling of our homes, streets and parklands through transpiration and shading. Transpiration cooling is the process by which trees release water through their leaves back into the atmosphere, thereby cooling the surrounding air. In street and civic plaza settings, species offering a greater density of foliage, broader crowns and higher rates of transpiration for evaporative cooling, are most useful in mitigating urban heat island effects. These are characteristics often found in trees of exotic or more sub-tropical origins. Broadly speaking, many of our native and endemic trees have sparser foliage by comparison. They offer reduced shade quality and have a tendency to naturally 'shut down' their transpiration processes during more extreme heat to conserve water.

Medium to large trees also provide the greatest ecological and community benefits, in comparison to small trees. They have greater canopy spreads and shading benefits, absorption of more gaseous pollutants, greater stormwater interception, lower levels of tree vandalism, and achieve higher canopy clearances. For example, one very large tree (such as a *Ficus macrophylla* – Morton Bay Fig) with a canopy diameter of 25 metres, can nominally achieve a canopy coverage of 490 square metres. One would need to plant at least 17 smaller trees to achieve the same coverage. A small tree (such as *Tristaniopsis laurina* – Water Gum) with a canopy diameter of 6 metres, achieves only a nominal 28 square metre canopy coverage. Smaller trees are also limited in their contribution to wind mitigation, shading and stormwater interception.

Medium and larger growing trees are also commonly longer lived than smaller trees, however, they do require larger soil volumes and more physical space above and below ground than small trees. This needs to be factored into any new planting. Using the paradigm of 'right tree for the right place', a medium to large tree should only be specified and planted in an area where there is sufficient space, and the growing conditions are suitable for the foreseeable life span of the tree. Smaller trees will also have a place in the urban forest in areas where physical space, overhead infrastructure, parking and traffic restrictions or exposure are overriding factors.



Analysis and Appraisal A Changing Climate



Figure 37: Not all trees are equal when it comes to mitigating urban heat. Some species provide far greater shade and evaporative cooling benefits than others. (Source : Arterra)



# Analysis and Appraisal Indigenous Recognition

# 3.2 Indigenous Recognition

Liverpool City Council recognises the First People and traditional custodians of the land and waters of the place we now call Liverpool. We recognise and acknowledge their great resilience and generosity of spirit towards other peoples with whom they now share their lands and waters. Our cities and urban places are now much altered, but traditional wisdom and knowledge in land management can still assist in framing the solutions to this area and dealing with the increasing challenges posed by a changing climate (CoS-GSS, 2021).

To be resilient and successful our urban forest and its planning needs to focus on creating a place where everyone, and all living things, can thrive. Quality green spaces, adequate urban tree canopy and water sensitive urban designs have a key role to play in caring for Country.

Never has it been more pertinent to consider our responsibility to look after our Country. As espoused by Elder April Bright "If you don't look after Country, Country won't look after you". Indigenous peoples talk about Country in the same way as they would talk about a person. They speak to Country, they visit Country, worry and grieve for Country and long for Country. To them Country is a living entity with a yesterday, today and tomorrow. *"If you don't look after Country, Country won't look after you".* (Elder April Bright)



Figure 38: The natural environment of Cabrogal and the wider Cumberland Plain was a rich assemblage of plants, animals, water, soils and sky. When we care for our lands, and care about something no matter how small, it often contributes to the health of the whole. We need to acknowledge that we are all just a small part of something much bigger. (Source : Arterra)



# Analysis and Appraisal Indigenous Recognition

Being charged with the design and implementation of our urban spaces, we must respect, understand and work in partnership with Indigenous people, nurturing healthy and stimulating places, and creating landscapes and strategies that align to the spirit and values of 'Country' that are observed by Indigenous people and cultures (Jones, et al, 2018).

The Cabrogal Clan of the Darug Nation are the original inhabitants of the Liverpool LGA and the Dharug, Gandangara and Tharawal people have long term traditional ties with the land and waters of this Country. Traditional wisdom and knowledge in land management can assist in framing healing solutions for Country that has been altered through urban development and which will be increasingly challenged by the changing climate.

The Tree Management Framework incorporates Connecting with Country principles in the following ways.

- An overall desire for the regeneration of Country.
- Fostering the custodianship of Aboriginal people and the healing connection to culture and land
- Tree planting approach that evokes the underlying geology, hydrology and fauna, through integration of endemic plant species as a priority together with suitable exotic trees when necessary.
- Improvement of our integration of water into the landscape, including passive irrigation strategies, bioswales and rain gardens, and recharge of or streams and aquifers, rather than losing it to stormwater systems.
- Holistic understanding of trees within the landscape including their important spiritual and cultural dimensions.
- Development of an appropriate definition for significant trees and species that recognises the important difference between value judgements made by Aboriginal people as compared to conservation practitioners.



Figure 39: Connection to Country is strongly associated with good environmental custodianship. Importantly it needs to acknowledge that we are simply part of the larger natural world and not above or divorced from it. Connection with traditional knowledge in land management will enrich our approaches and methods to Caring for Country including our tree management practices. (Source : NSW Government Architect - Draft Connecting with Country)



Figure 40: Trees an have special meaning and cultural significance for First Nations people such as Aboriginal scar trees. (Source: SLNSW)

Analysis and Appraisal Canopy Cover

#### 3.3 Canopy Cover

#### Benchmarking

Leading and current Australian research indicates that 30-40% canopy cover is required to optimise heat mitigation and obtain the greatest community health benefits. Individual trees can make a valuable difference to air temperatures at the scale of individual properties, but recent studies have shown that larger groupings of trees, that combine to provide >40% canopy cover, at the scale of a city block can reduce local ambient air temperature by more than 1.3°C (Ziter, C. et al 2019).

Table 7 - Sample of Australian and International Canopy Cover Targets			
Place	Current/ Previous	Proposed	
City of Ryde	29%	40% by 2030	
City of Blacktown	17%	40% by 2040 (ambitious target was backed by significant amount of grant money from the state government for greening.)	
City of Campbelltown	24% (2018)	29% by 2045	
City of Fairfield	15% (2020)	30%	
City of Parramatta	33%	40% by 2050	
City of Sydney	20%	23% by 2030 and 27% by 2050. (the City of Sydney is a highly urbanised environment, 27% cover has been modelled as the maximum attainable within the current planning and fabric of the City)	
City of Melbourne	22% (2012)	40% by 2040	
City of Canberra	21% (2019)	30% by 2045	
Seattle City, US	28% (2021)	30% by 2037	
Toronto City, Canada	28% (2018)	40% by 2050	

Local governments, in Australia and overseas, are increasingly recognising the importance of urban greening and tree canopy coverage. They are commonly setting targets within their policy documents to achieve particular coverage targets within their urban setting. The Greener Places design framework (Government Architect NSW) recommends aiming for 40% canopy cover across greater Sydney by 2036. Importantly this includes the following canopy targets for different land uses:

- > 15% canopy cover in CBD areas.
- > 25% in urban residential (medium to high density) and light commercial areas.
- > 40% in suburban areas.

Objective 30 of the Greater Sydney Commission also sets a broad target of 40% tree canopy cover across Greater Sydney. The table below includes some examples of actual targets within Australia and internationally. A number of comparable LGAs within the Sydney basin are aiming for 40% cover, in line with the Greater Sydney Commission target and NSW Government Architect recommendations.



Analysis and Appraisal Canopy Cover



Figure 41: 30% canopy is considered the minimum cover for community health benefits. Refer to Section 1.2. (Source: Arterra)

# Analysis and Appraisal

Canopy Cover

#### Liverpool LGA Existing Canopy

Tree canopy in the Liverpool LGA is currently measured at approximately **23%** (using Council's most recent tree canopy data). When compared to the 33 LGAs within Greater Sydney, Liverpool LGA is in 17th place, which is approximately the middle. On the surface it may appear that we are going well. However, this modest position is largely due to some very large expanses of natural and rural areas (such as the Holsworthy Defence site at 62% cover) that contribute a substantial amount of canopy to the overall LGA measurement.

Analysis of canopy cover, by suburb, reveals a far more uneven spread of cover across the LGA. Holsworthy, Cecil Park and Silverdale are areas of good canopy cover, as they are largely undeveloped areas, with many natural or rural landscapes, representing Australian Defence lands, Western Sydney Parklands and the Bents Basin Conservation Areas. There is a striking contrast however with our older and more densely developed suburbs like Green Valley and Carnes Hill. These measure with a very low canopy cover, of only around **7%**. When one considers the LGA's 43 suburbs, 37 have less canopy cover than the LGA average. More worryingly, two thirds of the suburbs have 15% or less canopy coverage, including the suburb of Liverpool with its highly urbanised Central Business District. The suburbs with the lowest percentage of existing canopy cover are:

• Luddenham

- Badgerys Creek
- Carnes Hill
- Green Valley
- Lurnea
- Bradfield
- Prestons
- Horningsea Park
- Hinchinbrook
- Liverpool centre
- Sadleir
- Leppington
- Edmonson Park
- Middleton Grange



Figure 42: Canopy cover across the Liverpool LGA, showing relative percentage of tree cover. The best tree cover of the LGA is found in the reserves and parkland of Holsworthy, Cecil Park and Silverdale; and in the residential suburbs of Pleasure Point, Voyager Point and Hammondville. (Source: Arterra / Liverpool City Council)



# Analysis and Appraisal Canopy Cover



Figure 43: Canopy cover across the Liverpool LGA, showing relative percentage of tree cover. The best tree cover of the LGA is found in the reserves and parkland of Holsworthy, Cecil Park and Silverdale; and in the residential suburbs of Pleasure Point, Voyager Point and Hammondville. (Source: Arterra / Liverpool City Council)

Another helpful metric in understanding where tree resources and increases of canopy cover should be focused for a more equitable benefit is the Heat Vulnerability Index (HVI). The NSW Department of Planning's Heat Vulnerability Index (Department of Planning and Environment, 2022), draws from city wide 2019 canopy data.

The study uses indicators for exposure, sensitivity and adaptive capacity to calculate an average HVI for each suburb. Suburbs with an index of 0 and 1 are less vulnerable to urban heat than those suburbs with an index of 5 that are highly vulnerable. Unsurprisingly, Holsworthy is shown to have an HVI of 0, while the Liverpool suburb, is shown to have an HVI of 4. A number of Liverpool LGA suburbs are identified as being vulnerable and highly vulnerable to urban heat. The suburbs in our area with highest HVI values are listed in the following table.

#### Table 8 - Summary of Heat Vulnerability Index (NSW DPE)

HVI 5	Green Valley	
Highly vulnerable	Lurnea	
	Sadleir	
	Hoxton Park	
HVI 4 Vulnerable	Hinchinbrook	
	Liverpool centre	
	Mount Pritchard	
	Ashcroft	
	Busby	
	Heckenberg	
	Miller	
	Cartwright	

The high level of development in the LGA in the last 4 years, since the above data was collected and synthesised in 2019, as well as indicators of overall decreasing canopy cover, suggests that it is likely more suburbs would show increased vulnerability to urban heat and would need to be considered part of the above list.



# Analysis and Appraisal

**Canopy Cover** 

#### **Developing Appropriate Canopy Targets and** the Threats to Achieving Them

The World Health Organisation calls stress the health epidemic of the twenty first century. Mental ill health and suicide are costing Australia up to \$180 billion a year (the Productivity Commission found in October 2019). Anxiety and depression are estimated to cost the European Union €170 billion a year and in the USA over \$210 billion. Finding a way to manage this is critical to our health and wellbeing and trees and other greenery can help immensely.

A 2019 Australian study titled 'Association of Urban Green Space with Mental Health and General Health Among Adults in Australia' by Dr Astell-Burt and Dr Feng found that urban communities with a healthy amount of tree cover - not just grass and green space - were psychologically healthier than those that didn't. In neighbourhoods with a tree canopy of 30% or more, adults had 31% lower odds of developing psychological distress, and 33% lower odds of rating their general health as "fair" or "poor" over six years. Urban green spaces with open grass rather than a tree canopy did not deliver the same benefits.

This research, which focused on Sydney, Newcastle and Wollongong, provides a solid minimum target to work towards to provide the community with tangible psychological health outcomes. Importantly, there are many other health benefits associated with urban greening, such as reductions in cardio vascular disease and skin cancer rates.

Our Tree Canopy Coverage Targets at this point in time will be based on measurement of tree canopy coverage that is over 3m in height. As trees provide significantly more benefit than other plants and ground covers, we need to ensure they are prioritised ahead of other greenery.

In the review and development of our targets we have analysed how much canopy cover we have, where it is located, and what realistic possibilities there are to increase it. We have undertaken extensive analysis and modelling to:

- determine the current extent of canopy across the wider LGA as well as more detailed analysis of our roads, parks and private property;
- determine the current capacity that may be available for further tree planting and increases in canopy based on the types of land uses and their relative carrying capacity for trees and the types of different parks and roadways and their differing abilities to increase tree planting; and
- help Council and the community confirm and commit to our recommended targets for 2035 and 2050.

In developing any urban tree canopy targets we must always consider the more site specific details and land uses. It is very easy to outline highly aspirational targets but if they can never be reached are they really performing the task intended? It is also critical to not unrealistically compare targets with quite different areas. Some Councils have vastly



<sup>\*</sup> Compared to people living in neighbourhoods with tree canopy of 0-9 % within 1.6km

Figure 44: Achieving greater canopy cover is important to all urban areas and human health and well being. (Source: Thomas Astell-Burt))



Analysis and Appraisal Canopy Cover



#### **KEY THREATS TO GREENING LIVERPOOL**

Insufficient resources and budget to maintain and increase urban greening

Loss of biodivesity, habitat and connectivity

Impacts from climate change and unresilient species selection

Loss of existing trees and vegetation due to infill and other development and not replaced

Trees and vegetation subject to excessive and extreme heat leading to death or poor health

Continued reliance on cars as it is too hot to walk or cycle

Water not collected for the benefit of greening and leading to flooding and erosion and downstream problems

Heat absorbed and re-radiated from exposed and dark pavements and buildings affecting vegetation and human health

Insufficient space and soil quantity and soil quality to sustain resilient trees and other vegetation

Competition for space where services, power lines and other elements are given priority over trees and other greening

Figure 45: Diagram illustrating the key threats to achieving key tree management and greening outcomes. (Source: Arterra)

different land uses, development pressures, resources and budgets and differing natural soil and climatic conditions. It is not helpful to compare what canopy Liverpool may be able to achieve with our more coastal counterparts or areas that have greater proportions of low density housing and a higher socio-economic demographic.

In analysing our potential canopy coverage detailed analysis and careful consideration was given to our particular various types of roads, parks and property landuses. The basic attributes of each type were measured and assessed.

We must also recognise that canopy trees cannot be planted in all locations, so we must continue to recognise the important benefits of other urban greening initiatives such as green roofs, green facades, irrigated lawns and ground level planting. Finally, we must acknowledge that Council manages less than 9% of the lands of the LGA, primarily in the form of our parks and roads. Close to 90% of the LGA is therefore managed and controlled by others, including large parcels of land managed by other government agencies, such as Defence, Health, National Parks and Airport Authority. The figure also includes approximately 50% of the LGA which is in private ownership, including substantial private residential, business and agricultural land. To affect meaningful change we will require widespread cooperation from our residents, the wider community and many other agencies of Government.



Analysis and Appraisal Significant Trees

# 3.4 Significant Trees

The Liverpool Local Environmental Plan 2008 (LEP 2008) Environmental Heritage schedule currently lists 3 heritage items that are trees and one heritage item which references trees in the name of the item. These listed trees are shown in the table below.

Table 9 - Significant Trees			
ltem	Name	Address	
21	Palm Trees (Phoenix canariensis)	Cnr Governor Macquarie Drive and Epsom Road, Chipping Norton	
22	Avenue of Trees	Riverside Park, fronting Riverside Road, Chipping Norton	
94	Row of 3 Palm Trees	Macquarie Street median strip, opposite 306 Macquarie Street, Liverpool	
99	Soldier's Memorial School of Arts, including palm trees	306-310 Macquarie Street, Liverpool	

Additionally, there are heritage items without specific identification of trees, for which the setting including the trees would be a contributory component of the character. These include Bigge Park, Collingwood Heritage Precinct group, Liverpool Pioneers' Memorial Park, St Luke's Anglican Church, Cecil Hills Farm and Berryman Reserve. There has been no survey and assessment of the urban areas to identify trees of outstanding value. It is likely that there are many other trees within the LGA that should be recognised for their heritage significance, Aboriginal Cultural Heritage values or other horticultural values. These trees need to be identified and given a higher level of protection that comes with appropriate registration or heritage listing.



Figure 46: Glenfield Farm, with its Colonial period homestead. The setting contains historic plantings as well as later contributory trees. (Source: Arterra)



Figure 47: St Lukes Church, Liverpool. The site trees contribute to the setting of the church building as well as the amenity of the locality. Recognition of our significant trees of the LGA, will help to ensure they are recognised and protected and will be an important outcome of improved recognition of trees in Liverpool. (Source: Arterra)



Analysis and Appraisal Significant Trees





### 3.5 Soils and Natural Vegetation

#### Our Soils

The landscape of the Liverpool LGA generally forms part of the gently undulating Cumberland lowlands and is crossed by drainage lines that generally run in a north-south orientation. There are a number of clay-based soil communities associated with this landscape, derived from the underlying and dominant Wianamatta Shales geology.

The most widespread is the Blacktown Soil Landscape Association. Other abundantly occurring soil associations are the Luddenham Soil Landscape Association occurring on ridges and crests and the South Creek Soil Landscape Association found along the active floodplains and drainage networks. In general, the soils of the council area are vulnerable to compaction. They have a tendency to be hard setting, compacted and repellent when dry, which leads to high run-off and eventually waterlogging, after heavy rains. To the south and west of the LGA, in areas of rolling rises and hills, there are soils derived from Hawkesbury Sandstone geology. These soils are generally found beyond the urban areas of Liverpool, for example Gulguer Nature Reserve and Holsworthy Defence lands. They include the soil associations of the Hawkesbury Soil Landscape Association and Gymea Soil Landscape Association.

Large expanses of our natural soils have undergone chemical and structural modification associated with agricultural land uses and urban development. The soils have been disturbed by earthworks, cultivation, as well as altered by nutrient and moisture enrichment. The most disturbed terrain is found around the highly developed landscaped of the Liverpool City centre, the modified lands around the artificial lakes of Chipping Norton and parts of the suburbs of Cartwright, Moorebank and Wattlegrove.

The condition of the soils has major implications for the health and vigour of trees and the success or failure of new tree plantings. Our soils typically need to be well protected from compaction caused by construction activities or inappropriate vehicular parking. Where our soils are highly modified, there is an even higher requirement for introduction of better-quality soil, and in sufficient volumes for tree growth.



Figure 49: Soil Landscape associations of the Liverpool LGA (Source: Arterra from Soil Landscape Association Series 1:100,000 mapping Penrith - Chapman 1989 )





Figure 50: Typical soil profile from the clay and shale based soils of the Cumberland Plain. (Source: Arterra)



Figure 51: In many urban areas the soil bears little resemblance to natural soil conditions. (Source: Arterra)



Figure 52: Our dominant soil conditions often result in shallow clay topsoils that are easily waterlogged, particularly in winter months. (Source: Arterra)



Figure 53: Our dominant soil conditions often are very easily compacted which can be a great challenge to achieve successful tree growth and can often impact our mature existing trees due to lack of soil aeration and water ingress. (Source: Arterra)



#### **Natural Vegetation**

The most widespread natural vegetation community of the Liverpool LGA, as it existed prior to European settlement, was the Cumberland Plain Woodland. Liverpool is situated approximately in the middle of the broad shallow basin identified as the Cumberland Plain, which extends well beyond Liverpool LGA, to both the north and south.

The Cumberland Plain is not necessarily vegetated with a single, consistent and homogeneous woodland. It can be broadly categorised as containing Shale Hills Woodland and Shale Plains Woodland sub-communities.

Only 12% of the original extent of the Cumberland Plain Woodland remains and it was listed as a Critically Endangered Ecological Community under the NSW Biodiversity Conservation Act 2016 and is also listed as a nationally endangered ecological community under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (NSW Department of Planning, Industry and Environment). In the western portions of the LGA there are also stands of the Camden White Gum (*Eucalyptus benthamil*), which is a critically endangered tree species that naturally occurs along the Nepean River.

Fifteen more distinct, Plant Community Types (PCT) are identified as occurring throughout the LGA. Remnant and endemic tree species representing these communities are found throughout the LGA.

These endemic species should be prioritised and utilised as much as possible within our parklands, where the growing conditions and space are likely to be favourable for them to thrive. Only a few of these species, however, are particularly appropriate for use as urban street trees. This is due to their ultimate size, habit and forms, the harshness of the urban environment, higher levels of air pollution and often severely limited soil volumes or altered conditions in which to grow.

An extensive list of Recommended Tree species has been developed for use in various contexts, including recommendations for street trees. These are listed in Section 3.3 of Liverpool's Tree Management Technical Guidelines.



Figure 54: Simplified mapping of naturally ocurring vegetation of the Liverpool LGA, as it likely existed prior to 1788. (Source: Arterra adapted from 'Taken for Granted' Benson and Howell)





of the Liverpool LGA . (Source: Arterra)



Figure 56: A Forest Red Gum planted around Gough Whitlam Park. (Source: Arterra)

#### **Primary Endemic Tree Species**

Angophora floribunda (Broad-leaved Apple) Casuarina cunninghamiana (River She-Oak) Corymbia maculata (Spotted Gum) Eucalyptus tereticornis (Forest Red Gum) Eucalyptus amplifolia (Cabbage Gum) Eucalyptus botryoides (Bangalay) Eucalyptus crebra (Narrow-leaved Ironbark) Eucalyptus fibrosa (Red Ironbark) Eucalyptus moluccana (Grey Box) Melaleuca decora (White Feather Honeymyrtle)

#### Secondary Endemic Tree Species

Angophora bakeri (Narrow-leaved Apple) Eucalyptus elata (River peppermint) Eucalyptus eugeniodes (Thin-leaved Stringybark) Eucalyptus longifolia (Woollybutt) Eucalyptus parramattensis (Parramatta Red Gum) Eucalyptus racemosa (Hard-leaved Scribbly Gum)



# Analysis and Appraisal Green Grid and Corridors

# 3.6 Green Grid and Corridors

The Green Grid proposal for Greater Sydney is an interconnected network of high quality green spaces. An interwoven landscape of green space improves the 'liveability' of places, keeps urban spaces cooler, as well as enhancing biodiversity and ecological resilience. The Liverpool LGA is rich in an existing network of rivers and creeks, linking the landscape. Together with road corridors they provide major opportunities to increase the connectivity of green spaces. Stronger links can be created through better planting of major road corridors, riparian zones and our parks and reserves.

#### **Road Corridors**

By their nature, road corridors are continuous, linking ribbons of land, criss-crossing the LGA. Well planted road corridors, especially where there are generously sized verges, can serve as a vegetated link between parks, drainage reserves and private landscapes.

The Northern Road and portions of Elizabeth Drive are noted as particular opportunities for establishment of green boulevardes.



Figure 58: Road corridors are essential for connection and transport, within and through the LGA. Nearby verge and street tree planting is an obvious 'linking' opportunity for the LGA's green grid. (Source: Arterra)



Figure 57: Diagramatic representation of some the major opportunities to reinforce and link existing green spaces, creeks and major road corridors for the social and environmental benefits of a more interconnected series of forested 'greenways'. (Source: Arterra)



# Analysis and Appraisal Green Grid and Corridors

#### **Riparian Corridors**

Similar to roadways, watercourses provide a valuable opportunity for continuity of tree cover and ecological connectivity of open space.

The Liverpool LGA has a predominantly north-south system of rivers and creeks. This includes significant tributaries of the Hawkesbury-Nepean River, such as South Creek, Kemps Creek, and Badgerys Creek in the western areas.

The eastern part of Liverpool drains to the George's River and includes the tributaries of Hinchinbrook Creek, Cabramatta Creek, Maxwells Creek and Brickmaker's Creek.

Some of these waterways are currently degraded, however, revegetation, and tree planting in particular, can begin the natural processes that create better water quality and support connectivity for wildlife.

Restoration of the South Creek riparian corridor has been identified as a priority project in the Western Sydney City Deal. Council has a key role and responsibility to work with government stakeholders and private property owners to bring this project to fruition.

#### **Upper Canals**

Another priority project opportunity in the Sydney Green Grid plan is the urban greening of the Upper Canal open space. This state heritage listed structure is approximately 58kms of tunnels, aqueducts and open channels that extends from Cecil Hills to West Hoxton, and represents a significant amount of land in public ownership. The Upper Canal is managed by the Sydney Water Catchment Authority. Council has a role to collaborate with the Authority for this major greening project within the LGA.

#### Park Lands

Council parks and reserves constitute approximately 4% of the total LGA. They provide sports and recreation space as well as environmental services and have the potential to be the highest quality green spaces in the LGA. Although parks represent a small percentage of the LGA their capacity for new tree plantings is very high.

Canopy cover in parks can be increased to 50-70%, while still allowing a range of solar access, including places of deep shade, dappled shade, as well as open, sunny areas. Denser planting in some parts of our parks and drainage reserves creates the opportunity for far better quality ecological linkages and biodiversity.



Figure 59: Restoration of creek and river banks, especially through tree planting, enhances the ecological connectivity of green spaces and their biodiversity potential. It also present immense opportunities for high quality passive recreation. (Source: Arterra)



# Analysis and Appraisal Urban Growth

# 3.7 Urban Growth

The planned population increase for the Liverpool LGA and the resultant loss of semi-rural landscapes that accompanies this, will only exacerbate the current western Sydney 'heat island' conditions. Existing neighbourhoods that lack trees and shady recreation places, will need green infrastructure to be improved. It will become increasingly important to design new landscapes with sufficient tree planting, to ensure they are resilient spaces to comfortably accommodate people and environmental requirements.

Intensification of the LGA is not only associated with the creation of new suburbs through urban release and subdivision, it also relates to the increasing density of development. "Since 2008, most areas of Liverpool required a back yard of minimum 60m<sup>2</sup>. Newer areas such as Middleton Grange have this reduced to 50m<sup>2</sup>" (Liverpool City Council, 2008).

Over time, more and more new dwellings only meet the minimum private open space size, with limited deep soil to allow for growth of trees. This trend towards a reduction in private property trees places increasing emphasis on the importance of public trees and the responsibility for Council to plant and maintain trees within the public domain.



Figure 60: Solar panels are an important sustainability initiative, however it is hugely counter productive to remove trees to merely facilitate solar panel efficiency. They need to co-exist. (Source: Arterra)

The City of Sydney's DCP General Provisions require that major, new tree plantings should maintain solar access to existing panels, where possible, having regard to a range of factors, however, there is no provision allowing existing, mature trees to be pruned or removed to accommodate solar panels.

The City of Melbourne Tree Retention and Removal Policy is unequivocal in stating that tree pruning or removal will not be considered for solar access to private property, gardens or solar panels.



Figure 61: Urban growth and development has a major impact on existing trees and existing young street trees. They do offer very real opportunity to achieve progressive and ultimate urban canopy cover if designed and installed well, with trees as vital infrastructure and not an after thought. (Source: Arterra)



# Analysis and Appraisal Utility and Services

#### 3.8 Utilities and Services

Trees are essential infrastructure however they are often in conflict with other services in streets and roadways; and needing room to grow. While in the past provision of services has been prioritised, the increasing understanding of the value of trees and their unique ability to mitigate the effects of climate change and the heat island effect, means they now need to be given equal priority in decision making for public space.

There are very few places where the presence of services would prevent trees being considered for planting (under high voltage lines and immediately adjacent to storm water inlets). In general, trees can be considered for inclusion in most street situations, and it is a wasted opportunity not to plant trees due to the presence of services.

#### **Overhead Utilities**

Careful consideration needs to be given to locations situated beneath powerlines, especially under high voltage lines, that require greater clearances. A poorly chosen tree can result in ongoing maintenance issues. Opportunities for tree planting below overhead power lines include the:

- selection of a suitable small growing tree that will not grow into the lines; or
- negotiating for installation of Aerial Bundled Conductors (ABC).

City of Sydney, and many other Councils, have been successful in using the ABC method to reduce the amount of clearances required and allowing a more natural tree form to be planted and retained for their streets. This has the further benefit of reduced costs for ongoing pruning maintenance. In-road planting is a further opportunity for tree planting to better avoid overhead wires, and should be considered where road widths and budgets allow.

For new subdivisions, and where larger scale redevelopment or urban renewal projects are undertaken, all traditionally overhead services should ideally be placed underground, especially in those situations where only small trees may need to be removed to allow this to occur. The long term benefits of larger trees that do not need clearance pruning, are likely to far outweigh the short term loss of canopy.

#### **Underground Utilities**

Trees are often competing with in-ground services for room. Roots will spread opportunistically, finding all available space to grow, including sometimes into private property and below roadways. Where possible, trees should be planted in a well prepared and designated zone that does not overly interfere with services or access for maintenance purposes.



Figure 62: Trees and overhead power lines can co-exist if managed well and over head cables are converted to ABC before planting reaches mature heights. A particularly successful outcome is demonstrated along Gardners Road in Rosebery. (Source: Arterra)

#### Solar panels

Solar panels and trees are both useful initiatives for an environmentally friendly, sustainable future. Sometimes the two are in conflict, where trees are shading panels, limiting their exposure to sunlight. Solar panels are most effective when they receive direct sunlight. Shade, clouds and rain may reduce output of the system, however, both direct and indirect sunlight will result in production of electricity.

Our Tree Policy takes into account the lifespan of a large tree and its contribution to the wide community and prioritises the broader community benefits ahead of shorter term or personal outcomes. It is counter-productive to remove trees for the sole purpose of allowing sunlight to solar panels. Liverpool City Council follows best practice in prioritising existing trees, over solar panel exposure. However, consideration may be given to existing solar panels, when determining the location of new tree planting.



# Analysis and Appraisal Traffic and Vehicles

#### Traffic and Vehicles 3.9

Roads and Traffic Authority's 2008 Landscape Guideline, provides a minimum landscape design standard for the greening of road corridors. It is focussed on safety, ease of maintenance and cost effectiveness and is often more relevant to motorways and highways.

The guideline document is due for review; however the key messages include:

- Tree planting should not obscure important sight lines.
- Landscape installations should preferably require low maintenance.
- Design of a road corridor should ensure adequate space is allowed for landscape and trees.
- Clear zones are determined on the basis of maximum speed limits.
- Appropriate planting sizes and spacing should be observed for urban road reserves, streets and avenues.

Updated and detailed specifications for tree selection in road corridors is provided in the Tree Management Technical Guidelines.

Council recognises the importance of designing for safety and appropriate road use and has incorporated current standards and guidelines for any street tree planting within our Tree Management Technical Guidelines.



Figure 64: By shading pavements, trees not only reduce the heat island affect but also reduce maintenance costs for roads and footpaths by preserving them from the damaging effects of sun. (Source: Arterra)



Figure 63: The right choice of tree, with a high canopy, can maintain good view lines for safety and also greatly contribute to the canopy cover and amenity of a neighbourhood. (Source: Arterra)



Analysis and Appraisal Cultural Attitudes

### 3.10 Cultural Attitudes

Liverpool has a wide and diverse population, living in apartments, small and large allotment suburban housing, and public housing. The community includes residents, business owners and those who live elsewhere but travel to Liverpool for work. The community ranges in age, income and education and is one of the most culturally diverse LGAs in NSW with almost one in three people born overseas and almost half the population speaking a language other than English at home. Liverpool also has a significant Aboriginal community. All have differing interests and attitudes toward trees, from those who engage positively in greening activities to attitude so fextreme or irrational fear of trees. An individual's attitude towards trees on their own land is often intensely personal.

More than 80% of the LGA is not managed by Council. This includes land managed by other government agencies and approximately 50% of the LGA which is private ownership, including residential, business and agricultural land.

Greater canopy cover will require the community to embrace trees as part of the private open space, which may require a radical shift of broader community attitudes. The level of change required may be a generational outcome, so educational efforts and awareness programs need to begin as early as possible and to target all audiences to address barriers to behavioural change.



Figure 66: Even a small canopy tree is better than no canopy tree. We must alter our thinking if we are to ever address our climate emergency and make Liverpool a healthy and sustainable place to live. (Source: Arterra)



Figure 65: We need to overcome the cultural and socio-economic barriers to trees around our houses. Just one tree can make a huge difference at the scale of the individual property, the precinct and the neighbourhood. (Source: Arterra)



Analysis and Appraisal Other Key Threats

# 3.11 Other Key Threats

#### **Current and Future Pests and Diseases**

Pests and diseases can pose a great risk to the health and longevity of our tree assets. Pest and disease threats are increasing and changing within our urban environments due to climate change, greater global trade, movement of people and gradual reductions of Australia's biosecurity measures.

Pest and disease control on a large scale can be challenging, costly, and in many circumstances, not even practical or feasible. Some diseases also have no effective treatments. Some diseases have proven to have devastating effects on tree populations. Overseas examples, such as Dutch Elm Disease and Emerald Ash Borer, illustrate how quickly entire tree populations can be all but wiped out. Analysis, understanding and ongoing monitoring of major pest and disease outbreaks is a critical part of our tree management.

There are already known hotspots of Phytophthora dieback (*Phytophthora cinnamomi*) at Kemps Creek. Previous instances of tree die-back caused by concentration and repeated occurrences of Eucalypt psyllids have also led to extensive tree losses and impacts to tree health, particularly within our native Grey Boxes (*Eucalyptus moluccana*) populations.

There are several known pests and diseases that have, and can affect the trees in Liverpool. As with much of Sydney, these include:

- Australian Honey Fungus (Armillaria luteobubalina)
- Plane Anthracnose (Apiognomonia veneta)
- Cuban Laurel Thrips (Gynaikothrips ficorum)
- Eucalypt / Grey Box Psyllid (*Cardiaspina sp.*)
- Fig Psyllid (Mycopsylla fici)
- Figleaf Beetle (Poneridia australis)
- Fusarium Wilt (Fusarium oxysporum)
- Painted Apple Moth (Teia anartoides)
- Pink Wax Scale (Ceroplastes rubens)
- White Rots (*Phellinus sp.*)
- Phytophthora dieback (Phytophthora cinnamomi)
- Sycamore Lace Bug (Corythucha ciliata)
- Winter Bronzing Bug (Thaumastocoris sp.)
- Myrtle Rust (Uredo rangelii)

The key ways we will deal with pests and diseases include:

- Monitoring for pests and diseases on a continuous basis as part of regular tree inspections
- Maintaining a diverse range of species. The more diversification, the less risk of major tree and canopy cover loss from a major pest or disease event.
- Maintaining appropriate and healthy trees. A tree's ability to cope with a pest or disease depends in large part on the environment in which it is growing. Harsh conditions and poor maintenance often makes it more difficult for trees to naturally defend and recover from outbreaks.
- Reviewing any unexplained tree deaths to understand the reason behind any larger scale tree decline.
- Implementing appropriate hygiene protocols

Refer to Section 4.4 in the Tree Management Technical Guidelines for further guidance and information.



Figure 67: Illustration of the purple discolouration and distortion of the leaves and the prominent yellow fruiting spores of the Myrtle Rust. (Source : www. flickr.com/photos/48395196@N05/5402288905/sizes/o/in/photostream/ - accessed 5/3/11)



Analysis and Appraisal Other Key Threats



Figure 68: Sycamore Lace Bug damage to London Plane Tree illustrating the premature death of some leaves, the attempt by the tree at secondary foliage growth late in the season and the subsequent chlorosis occurring also to those new leaves as a result of the pest. (Source : Arterra)



Figure 69: Sycamore Lace Bug - Adult Stage (Source : www.flickr.com/photos/ xx\_chaton\_xx/5139448467/sizes/l/in/photostream/-accessed 5/3/11)

#### Soil Salinity

Soil salinity (also referred to as dryland salinity) is the cause of serious land and water degradation in many parts of Australia. A complex range of biophysical factors contribute to dryland salinity. Salinity is the accumulation of salt in land and water to a level that impacts on both the natural and built environments. The impacts of salinity can affect native plants and animals, aquatic and terrestrial ecosystems, agricultural crops and pastures, water supplies and infrastructure such as roads and buildings.

Salinity is a process inherent in the Australian landscape; however, human activities have accelerated the process of salt mobilisation and accumulation.

In urban areas the increased recharge and rising groundwater are caused by activities such as clearing of vegetation for development, over-irrigation of gardens and public parks, inappropriate stormwater discharge, disruption of natural drainage lines and leakage from water pipes and swimming pools.

Soil salinity issues can occur when the water balance in the landscape is changed and salt is mobilised by groundwater as it rises to the land surface. The removal of native vegetation and its replacement with agriculture or urban development has resulted in significant change to the water balance in many areas. To manage dryland salinity, groundwater levels must be lowered and the equilibrium between water inputs and outputs re-established.

In the absence of information about their long term impacts, many of our past land management practices caused excessive loss of topsoil through erosion, compaction of topsoil and subsurface soils, soil structure decline, depletion of organic matter and increased acidity. These changes have resulted in degraded soils with a much reduced water holding capacity. (NSW DPI, 2009)

Key factors Council will try to address to deal with our existing and potential soil salinity issues are to:

- Increase our urban tree and canopy cover to improve natural rainwater infiltration and natural water uptake by vegetation.
- Improved soil health and resilience.
- Reduce impervious surfaces and allow more natural rainwater infiltration and passive irrigation outcomes.
- Utilising and trialling salt tolerant native species where salinity is already affecting health and establishment of trees.



Analysis and Appraisal Key Opportunities

# 3.12 Key Opportunities

Analysis of the physical and cultural context of the Liverpool LGA, taking into account its vulnerability to heat and its location as a growth area of Sydney, highlights the importance of using trees for greater liveability. This gives rise to a range of opportunities where Council has both agency and responsibility to effect change, including:

- Mitigate the heat island effect and provide cooler places by extending urban tree canopy and retaining water in the landscape.
- Focus on the care and assessment of Council-managed trees.
- Increase canopy through planting of Council-managed streets, parks, and other sites.
- Incorporate trees as an essential component of all Council's major projects including road upgrade projects and the Fifteenth Avenue smart transit (FAST) corridor.
- Focus on the parts of the LGA with least canopy, highest heat island indicators, and most vulnerable populations.
- Raise awareness in the community about the benefits of trees and work with private owners and other government agencies to increase canopy cover.
- Work in co-operation with the NSW Government to restore and protect South Creek.
- Regulate preservation of trees and expansion of canopy through statutory instruments and enforce compliance.



Figure 71: A key opportunity for Council is to increase tree canopy through additional planting of Council-managed parks. (Source: Liverpool City Council)



Figure 70: Well cared for trees in our urban areas contribute to our physical and mental well-being and our increasing need for cool, green and resilient public spaces. (Source: Arterra)



Analysis and Appraisal Key Opportunities



Figure 72: Hume Highway at Casula. Wide verge between a major and local road, has provided a unique opportunity for large trees and dense tree planting. Large native trees are able to be situated away from potential conflicts with overhead wires while still allowing excellent visibility for vehicular traffic and passive surveillance. (Source: Arterra)

The City of Ryde is a comparable LGA to Liverpool. They conducted a community survey on trees (Nov 2021) found more than 75% of all residents surveyed, place a high importance on street planting in their street and identified having too few trees. There was a noticeable age bias in attitudes towards trees. Younger people (<50 years) placed higher importance on the benefits of trees to property values and privacy, while older residents (>65) years were concerned with leaf and fruit drop.

While 88% of responders were English-only speakers, non-English speakers were significantly more concerned about numerous issues with street trees than English speakers.

This section of the Strategy establishes the goals that Liverpool is setting and the strategic directions to achieving these, through a specific set of actions.





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ITEM 03	Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management
	Technical Guidelines)
Attachment 3	Draft LCC Tree Management Strategy - May 2024



4.0

4





Figure 73: Mature trees are the most significant component of green and liveable cities. Trees provide similar benefits for people, whether they are in natural places or urbanised areas. (Source: Arterra)

# 4.1 The Vision

Liverpool has developed a vision for and its tree management and canopy cover enhancements to guide all our practices and achieve our long term targets.

Our vision:

Create a greener, healthier and more beautiful, comfortable, inclusive place to live, work and visit.

Council will take a leading role in creating a greener Liverpool by actively caring, protecting and enhancing our urban trees and canopies, ensuring that they are fairly distributed and healthy for a sustainable and resilient environment, for the future wellbeing of our community and a changing climate.

Council will actively support, and provide opportunity to the community to help contribute to the realisation of a greener Liverpool.

Natural growth, that truly sustains people and communities, takes generations to mature.

Because of this we must intentionally invest in the foundations now, while respecting and building on the ones laid out by those before us.

Only then can we nurture and create a better world for the many generations that follow. (Tree Coach ®) 

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 ITEM 03
 Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management Technical Guidelines)

 Attachment 3
 Draft LCC Tree Management Strategy - May 2024



# The Strategy Canopy Cover Targets

# 4.2 Canopy Cover Targets

For the Liverpool LGA, an increase of 7% from the current overall 23% cover to the desirable average of 30% cover is achievable. This can be reasonably undertaken over the next 20-30 years, if we break it into two stages and aim to achieve:

- 28% canopy cover by 2035; and
- 30% canopy cover by 2050

These targets include Holsworthy and Greendale, which are predominantly non-urban areas, have a large proportion of bushland and skew the percentages higher. Refer to the following section on Urban Canopy Targets for more detailed discussion around proposed canopy enhancements.

These targets may not appear as ambitious as the targets of other western Sydney LGAs, however they realistically take into account the expected canopy losses that are anticipated as a result of projected urban growth and development of urban release areas and also the realistic prospects of introducing a significant amount of tree planting, when Council manages less than 9% of the land area.

It is not intended that these target figures would represent a homogeneous canopy percentage across the LGA. Some areas, such as public parks and Holsworthy can achieve much higher percentages of cover, while highly urban places like the Liverpool Central Business District and regional roads, can only achieve a more moderate cover as they are limited in their planting opportunities and often have harsher growing conditions.





Figure 74: Barangaroo, Sydney, illustrating that great tree planting can coexist with pavements and other urban activities. There is notable drop in temperatures on summer days in this area when compared to nearby similar areas with fewer trees. (Source: Arterra)

# THE STRATEGY

# The Strategy2Canopy Cover Targets

#### More Detailed Urban Areas Canopy Targets

Current canopy cover of our more urban area is lower than the overall LGA average and is only achieving approximately 14% cover. We need to do better and focus on our urban and more vulnerable areas as the first priority.

Our goals for canopy cover have been developed through research of current best practice in Australia and overseas and are based on detailed analysis of our landuses and capacity for tree planting. This underpins the rationale for the greening objectives. A 30% cover is generally considered the minimum coverage to aim for to achieve the measurable benefits and aligns with the intentions and aspirations of many other local and international cities.

We will work towards an increased canopy cover in the broader urban and suburban areas with the following more specific average targets. If we can aspire to these then we believe we can reach the stated overall objective of 30% average canopy cover for the whole LGA by 2050.

Table 10 Average Canopy Targets for General Land Use Types			
Land Use Type	Existing Canopy 2023 (%)	Target Canopy 2035 (%)	Target Canopy 2050 (%)
Business	5%	8%	10%
Industrial	6%	20%	23%
Residential	9%	22%	28%
Recreation & Environmental	28%	38%	46%
Rural	19%	29%	31%
Special Uses	42%	48%	48%
TOTAL AVERAGE FOR LGA	23%	28%	30%

Achieving a 30% canopy cover, requires more than **300,000** new trees to be planted across the LGA in the next 26 years.

Table 11 Average Canopy Targets for Major Land Use Zonings				
Land Use Type	Zoning Code	Existing Canopy 2023 (%)	Target Canopy 2035 (%)	Target Canopy 2050 (%)
Agribusiness	AGB	3%	5%	10%
Business	B1	8%	10%	10%
Business - Local Centre	B2	9%	10%	10%
Business	B4	5%	10%	10%
Business Development	B5	17%	17%	20%
Local Centre	E1	7%	10%	10%
Commercial Centre	E2	4%	10%	10%
Productivity Support	E3	5%	10%	10%
Mixed Use - Aerotropolis	MU	6%	10%	10%
Mixed Use	MU1	7%	15%	15%
Industrial - General	E4	6%	10%	15%
Industrial - Heavy	E5	3%	5%	10%
Enterprise- Aerotropolis	ENT	7%	25%	25%
Industrial - Light	IN2	7%	10%	15%
Res-Gerenal Residential	R1	3%	10%	15%
Res-Low Density Residential	R2	8%	15%	20%
Res-Medium Density Resid.	R3	11%	15%	20%
Res-High Density Resid.	R4	13%	20%	25%
Res-Large Lot Residential	R5	14%	25%	30%
Public Recreation	RE1	30%	45%	50%
Unzoned WSP	WSP	24%	30%	40%
Private Recreation	RE2	20%	25%	30%
Env. Protection	C1	37%	50%	60%
Env. Protection (NP & Res)	C1	43%	50%	70%
Environmental Conservation	C2	42%	50%	70%
Environmental Management	C3	39%	50%	60%
Environmental Protection	C4	12%	30%	30%
Env. and Recreation	ENZ	24%	30%	30%
Rural - Primary Production	RU1	23%	25%	25%
Rural - Rural Landscape	RU2	21%	25%	25%
Rural - Prim. Prod Sm Lot	RU4	15%	15%	15%
Rural - Transition	RU6	14%	15%	15%
Special Activities - 1	SP1	2%	5%	5%
Special Activities - 2	SP2	3%	5%	5%
Special Activities (Defence)	SP2	67%	67%	67%
Special Activities (Airport)	SP2	4%	5%	5%
Water	W1	0%	0%	0%
TOTAL AVERAGE FOR LGA		23%	28%	30%



The Strategy Canopy Cover Targets



Figure 75: To create canopy cover, create additional canopy cover and improve our community's health and well being we need to plant more than 200,000 new trees over the coming two decades.

Council's commitment is to lead the way and substantially increase canopy cover with new tree plantings in the public domain, that is, in our streets and the public parklands of the LGA. Council-managed land, however, amounts to only **9%** of the LGA. We will work towards the following targets for our streets and parks.

Table 12 Canopy Targets for Road Categories				
Street Type	Existing Canopy 2023 (%)	Target Canopy 2035 (%)	Target Canopy 2050 (%)	
Motorways **	17%	20%	20%	
State Roads **	8%	10%	10%	
Regional Roads	10%	15%	20%	
Local Roads	9%	30%	35%	
Laneways	9%	15%	20%	
TOTAL AVERAGE FOR FOR ROADS	10%	25%	30%	

\*\* Some areas within these categories are not managed by Council.

Table 13 Canopy Targets for Open Space Categories				
Park Type	Existing Canopy 2023 (%)	Target Canopy 2035 (%)	Target Canopy 2050 (%)	
Regional and District Parks **	32%	40%	50%	
Regional & District Sportsfields	8%	10%	10%	
Local & Neighbourhood	18%	60%	70%	
Pocket Parks/ Road closures	50%	50%	60%	
Drainage Reserves	57%	80%	80%	
Unclassified Open Space	66%	70%	75%	
TOTAL AVERAGE	29%	40%	50%	

\*\* Some areas within these categories are not managed by Council.

# THE STRATEGY

# The Strategy Canopy Cover Targets

#### **Canopy Targets and Numbers of Trees**

To achieve a canopy cover of 30% it is estimated to require adding approximately 2,200 hectares of tree canopy to our existing 7,100 hectares of tree canopy across the LGA. This also requires us to retain and protect as many of our current trees as possible. This can be achieved if we start immediately and continue in a consistent and staged manner over the next 20-30 years.

Taking into account loses that are expected as trees age and die, or removed as sites are developed, the targets will require more than **15,000 trees to be planted annually** across the LGA as a whole, over the next 11 years till 2035.

This requires:

- 2,700 trees / year in our parklands, drainage reserves;
- 4,300 trees / year in streets; and
- **8,000** trees / year in private property or lands managed by other agencies.

For the 15 years beyond 2035, assuming we are meeting those targets (2035 - 2050) will we require **10,000 trees to be planted annually.** 

This requires:

- 1,000 trees / year in parklands, drainage reserves;
- 1,000 trees/year in streets; and
- **8,000** trees/year in private property or lands managed by other agencies.

The numbers estimated are based on an average sized medium tree, with an ultimate mature canopy of around 70-80 square metres. Initially, tree planting efforts will have minimal impact on canopy measurements as we wait for them to mature. For this reason, the bulk of the planting is proposed to occur in the earlier time period to allow trees the time needed to grow their crown and begin to achieve meaningful contributions to our canopy cover.

While Council will do what it can, achieving our broader canopy targets will require some proportional increases in tree planting to occur on private lands. Reaching the target, or exceeding it, necessitates a significant shift in the community's attitude towards trees. This is likely to be a gradual, and perhaps a generational change.

In the shorter term, it is expected that some other government agencies that manage trees in the Liverpool LGA will also help contribute to our canopy targets, especially those agencies that oversee areas of parkland and larger open space, including:

- Western Sydney Parklands;
- Water NSW;
- National Parks and Wildlife Service;
- The Aerotropolis and
- Australian Defence Force (Holsworthy Defence Lands)

To achieve our targets we need to plant .....

# **2,700** trees a year in our parks

# 4,300 trees a year in our streets

and encourage and support our residents, businesses and other agencies to plant

# in excess of **8,000** trees a year

within their own properties

Every year.... for the next 11 years.


The Strategy Canopy Cover Targets



Figure 76: Trees need time to grow and we already need to be replacing trees as they die or are removed. We must embark on an ambitious tree planting program, and start immediately. Council will lead the way, but our residents must contribute to improving our tree cover as well. (Source: Arterra)

LIVERPOOL CITY COUNCIL TREE MANAGEMENT STRATEGY 75







WHERE WE ARE 2023

Building facades exposed to heat and sun

Outdoor dining uncomfortable

Parked cars unshaded

Small trees in small tree pits too close to road

Trees excessively pruned for powerline clearance

Small and ineffective trees under powerlines

Vulnerable people affected by heat and sun

Wide streets, not optimised for walking and cycling

Heat absorbed and radiated from exposed and dark pavements

Little thought for soils and drainage optimised for tree health

Water not collected for 'greening' and leading to flooding and downstream problems



# WHERE WE NEED TO BE 2050

Cool and shaded streets to improve human health and liveability with less reliance on cars

Impacts from utilities minimised (power ABC'd and undergrounded)

More greenery at ground level and reductions in hard paved surfaces

Greater use of permeable pavements. Increased use of light coloured pavements to reduce heat absorption

Soil volumes and conditions are well designed to sustain trees and vegetation for the long term

Water is recycled and used well for 'greening'

Median tree planting to increase shading of roads

Figure 77: Visual representations of the approaches and intended long term outcomes of our Tree Management Strategy. (Source: Arterra)

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# The Strategy Our Strategic Directions

# 4.3 Our Strategic Directions

The preceding sections set out the primary objective of this Tree Management Strategy and the specific goals that we will aim for and measure against. In responding to the vision and goals, a set of 10 specific directions have been devised to address each aspect of our goals and what is required to achieve them. Our strategic tree management directions are summarised below and further expanded upon in the following pages.

- 1. Value Identify and manage trees as assets
- 2. Canopy Cover Increase canopy cover and build resilience
- 3. Manage Manage the urban forest in accordance with best practice
- 4. Mitigate Risk Manage treerelated risks
- 5. Living Recognise the vital connection between 'green' and 'blue' infrastructure
- 6. Promote Protect and promote trees on privately owned land
- 7. Capacity Build Council capacity for tree management, planting and protection
- 8. Education Build community awareness and encourage participation in urban greening
- 9. Protect Manage the impact of development on existing trees
- **10. Support** *Review* planning policy and development controls to promote trees and tree retention



Figure 78: Trees should be seen as a vital part of urban infrastructure. (Source : Arterra)

LIVERPOOL CITY COUNCIL TREE MANAGEMENT STRATEGY 77



# The Strategy Direction 1 - Manage Trees as Assets



Figure 79: Healthy, mature trees, provide a range of environmental services and need to be managed as the community assets they are. (Source: Arterra)

# Direction 1 - Manage Trees as Assets

Council managed trees are not currently consistently recorded, or managed as operational assets. What goes unmeasured is often undervalued. Good data is a prerequisite for proper and defensible risk management and for providing an accurate basis for tree management decisions. In order to manage our trees and plan for appropriate planting and renewal programs, it is essential to identify our trees through survey and to establish a record of where the trees are, what they are and what is their condition. It is also essential to know how valuable they are individually, as larger groups, and as an LGA-wide canopy asset.

In addition to individual tree records, we will require updated data on the extent of canopy cover to use as a baseline against which our ongoing canopy goals can be measured and compared.

Ideally, management of street trees and park trees should be guided by more granular and specific master planning and management documents. The size of the LGA makes it difficult to undertake a comprehensive street tree master plan for all parts of the LGA. Initially, direction for street planting will be taken from this Strategy. In coming years, when resources permit, Council may embark on more definitive street tree master planning within some of the urban areas.

In decision making for new or replacement plantings, consideration will be given to achieving specific urban design outcomes such as dense summer shade, winter solar access, wind mitigation and providing appropriate scaled trees for the planting positions available. Species selection, planting design and installation methodology will adhere to our Tree Management Technical Guidelines.

While all trees in the LGA are protected under the Liverpool City Council's tree preservation requirements, outlined in the Tree Policy and the Tree Management Technical Guidelines, very few trees currently have the added protection associated with registration or statutory listing as a heritage item. Council will work towards identification and protection of our more significant trees, through an electronic 'Register of Significant Trees'. This will include private trees as well as trees in the public domain and other public ownerships. However, before we undertake this exercise we first need to address the basics of managing our trees as assets.



# **The Strategy** Direction 1 - Manage Trees as Assets

#### Actions:

1.1 Identify trees in our streets and parks as essential assets within our urban infrastructure and incorporate tree management into our broader asset management thinking and activities.

1.2 Progressively survey and adequately record all public trees, that are managed by the City of Liverpool, including our street trees, park trees and trees on any Crown land managed by the Council.

1.3 Progressively compile a tree inventory using an electronic Tree Asset Register. The register will be established as an accessible and scalable electronic database that can hold a complete history for each tree, with data including images and maintenance records.

1.4 The Tree Asset register will also maintain records of all assets that have undergone any formal risk assessment, together with any actions identified to minimise tree-related risk, details of any compensation claims (eg. for repairs to private structures) and the scheduling of future inspections.

1.5 Council will investigate whether to update our existing internal asset management systems, to add tree data, OR to purchase a more 'tailored' and proprietary tree management system, of which several are available.

1.6 Engage specialist consultants to survey key areas of the LGA for trees of heritage significance or other outstanding values; and to then begin to prepare listings for a Significant Tree Register.

1.7 Engage with Aboriginal communities of the Liverpool LGA and knowledge holders to identify trees of Aboriginal cultural significance that are appropriate for listing. (Noting, there may be trees with cultural value that cannot be shared or identified on a public register.)

1.8 Co-ordinate the Tree Asset Register with information on known significant trees, so that significant trees managed by Council are clearly identified and managed accordingly.

1.9 Continue to undertake tree canopy measurements and establish ideally annual (or at least a minimum of 3-yearly) measurements, reviews and reporting. Tree height threshold for measurement should ideally align with Council's definition for a protected 'tree', being greater than 5 metres tall. Refer to Section 1.1 and Section 2.3 in the Tree Management Technical Guidelines for further information related to tree preservation.



Figure 81: Identification and recording of our trees in an easily used and accessed electronic database system is key to the proper management and understanding of our tree resources. (Source : Arterra)

# Species Insight

Your Species at a glance



Figure 80: Image shows graphs and charts in ' Forestree', an example of an Australian developed Urban Forest Management software. Being able to measure, record and analyse is a key requirement to successfully manage any asset. Council is committed to improving the way we capture, report and monitor our urban forest resources. (Image Source: Forestree website)

LIVERPOOL CITY COUNCIL TREE MANAGEMENT STRATEGY 79

THE STRATEGY





Figure 83: Well treed city parks play a significant role in mitigating the urban heat island effect. Groupings, copses and avenues of trees with dense canopies have the most profound impact on mitigating urban heat. (Source: Arterra)

# Direction 2 - Increase Canopy Cover

This strategy is at the heart of our vision as well as the key to its success. Canopy cover data from many Sydney Councils suggest that more trees are being removed or dying than are being replenished by Councils or private property owners. As private land is developed, greater pressure is placed on our public lands to accommodate many more trees and to provide the major contribution to our urban forest canopy. Council will lead by example in expanding our public tree assets and will focus our resources in areas that have the least existing canopy cover and highest heat vulnerability.

A strong tree planting program will facilitate an increase in our canopy cover. Current average measurements for existing canopy cover in our roads and parks, suggests there is ample opportunity for expansion of canopy. We will progressively undertake street and park audits to identify immediate gaps and opportunities in our street tree plantings and identify new tree planting opportunities within our parks and reserves. We will employ this data to instigate an extensive tree planting program, using appropriate species and we will execute this in a manner that is equitable both geographically, demographically and generationally.



Figure 82: St Andrews Park, Casula, is an example of a successful park, incorporating existing mature trees that provide areas of shade and respite from the sun in Summer and a beautiful destination to relax and enjoy. (Source: Arterra)



# The Strategy Direction 2 - Increase Canopy Cover

#### Actions:

2.1 Protect our existing trees and canopy by avoiding unnecessary pruning or removals.

2.2 Establish an annual tree planting program. We will plan for the planting of over 7,000 trees each year, for the next 11-year period. Street plantings will be of advanced, robustsized trees of at least 45L and preferably 100L or above. Park trees will be planted in a greater variety of sizes and include smaller containers and tube stock, where appropriate, as well as more mature feature plantings of >200L trees for premier parks. Planting using cost effective tube stock will also be targeted along drainage lines. We will nurture our newly planted trees in accordance with best practice for establishment, as set out in the Tree Management Technical Guidelines.

2.3 Begin a progressive audit of all Council parks, with an aim for identification of major tree planting opportunities, referencing any Park Management Plans, for those parks that have them. We will focus on opportunities in our most vulnerable areas and follow up with planting.

2.4 Council will promote and manage our neighbourhood parks and urban plazas to create 'oases' of shade within the public domain.

2.5 Carry out 'gap' audit of existing street tree planting locations, in accordance with the Western Sydney Street Design Guidelines, that recommend achieving continuous canopy cover on both sides of every street. Fill any identified locations with an appropriate tree, including replacement of any dead or senescing trees. Actively seek new locations for establishing street tree planting, such as additional planting in wide areas of pavement and in-road planting in wider roadways.

2.6 An urgent replacement program will be established for dead or under-performing street and park trees, as well as committing to a scheduled and timely replacement of any future street or park trees that are removed. Removing a tree and not replacing it is no longer a reasonable outcome.

2.7 Specific tree planting policies will be introduced into any new Park Management Plans or new parks delivered in new developments, for the maintenance and replacement of trees, in accordance with this strategy document and consistent with the Tree Management Technical Guidelines.

2.8 Street tree master plans will be undertaken for key urban spaces, incorporating summer shade for pedestrian footpaths and cycleways, wherever possible. Trees will be introduced into all extensively paved public spaces such as plazas and car parks.

2.9 As much as possible, street tree installations will be detailed in accordance with the principles of Water Sensitive Urban Design. This will maximise stormwater harvesting in public places, to support soil moisture and tree health.

For the next 11 years, Council proposes to plant... **7,000 trees annually** 

2,700 park trees 4,300 street trees



Paramor Reserve Green Valley



PARK AREA	1990m2 (0.199 hectares)	CANOPY AREA	196m2	CANO	PY CO	VER	9	9.8	%
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Figure 84: A random audit of Council managed parks identified many are falling well short of providing positive contributions to our regions canopy cover. There is enormous scope to increase tree planting within many of our parks. A systematic and ongoing audit process will be developed to identify planting opportunities that can be immediately addressed. The above sample of Paramor Reserve (top) has less than 1.34% cover, while Meehan Park (bottom) provides less than 9.8% cover. This illustrates major opportunities to easily work towards our target of 60-70% cover for our local and neighbourhood parks. (Source: Arterra)



# The Strategy Direction 3 - Best Practice Management



Figure 86: The image above highlights the potentially lost opportunity to plant and shade the building and outdoor spaces and car parking. More needs to be done to achieve and maintain canopy cover and environmental benefits, particularly around our schools and playgrounds. (Source: Arterra)

# Direction 3 - Best Practice Management

Significant public investment in trees requires monitoring to ensure healthy urban forests that provide a long-term flow of benefits. Healthy trees are resilient and provide the greatest benefits. Beyond canopy cover analysis, it is important that we understand and manage tree population dynamics and identify any undesirable population trends. In general, greater diversity increases our urban forest resilience and the ability to withstand change.

Once the LGA's public tree assets have been identified and incorporated in an asset register, it will be possible for us to better interrogate the data for urban forest health indicators, using metrics such as:

- Individual tree health.
- Diversity in species, genus and family composition.
- Diversity in age and tree life expectancy ratings.
- Balance of endemic/ native/ exotic trees.
- Availability of habitat and food sources for endemic fauna.

Our tree management and tree planting will work towards a better connection with Country through:

- Responding to the underlying geology and hydrology of the land.
- Integrating endemic tree species where the conditions are favourable for them to thrive.
- Replacing weed species with endemic plants, particularly in natural areas, parklands and along watercourses.
- Contributing to biodiversity and healing of our lands through increased revegetation and biodiversity.



Figure 85: Shaded cycleways combine the environmental benefits of trees with an environmentally friendly mode of transport. (Source: Arterra)

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# The Strategy Direction 3 - Best Practice Management

#### Actions:

3.1 Adhere to the practice and principle of 'right tree in the right place' with emphasis on using the largest tree possible for each identified location.

3.2 Utilise a mixture of tree species to provide diversity of sizes and habitat, ideally achieving a mix of at least 3 different botanic families for all our major streets and park plantings.

3.3 Increase overall urban forest diversity through considered tree species selection in all street and park master plans and reduce over reliance on only a few species.

3.4 Achieve a diversity of mature tree sizes with an aim of achieving a minimum of:

- 10% civic scale trees (>20m height or canopy spread);
- 10-30% large trees (12-20m height or canopy spread);
- 50-60% medium trees (8-12m height or canopy spread); and
- no more than 10% small trees <8m height or canopy spread).

3.5 Improve soil conditions for all newly planted trees, using adequate soil volumes and appropriate tree installation methodology, as per the Tree Management Technical Guidelines.

3.6 Select species and planting environments for our changing climatic conditions and use the principle of 'the right tree in the right place', as outlined in the Recommended Tree Selection Schedule, in Section 3.3 of the Tree Management Technical Guidelines.

3.7 Discourage and control weed species and undesirable plants to remove potential weed sources and ongoing urban maintenance burdens. This may exclude any trees that are identified as heritage trees or having other exceptional values. Refer to Section 2.3 of the Tree Management Technical Guidelines.

3.8 Collect and re-use rainwater as much as possible to the benefit of green infrastructure. Identify stormwater harvesting opportunities and install new street trees with stormwater harvesting details, and passive irrigation wherever possible.

3.9 Establish a proactive, cyclical tree maintenance program for public urban trees.



Figure 87: Use of large, native trees in parklands where favourable conditions allow them to reach their potential size and maximise environmental benefits. (Source: Arterra)

3.10 Establish a clear protocol for managing site contamination so it does not unnecessarily lead to existing tree impacts, prevent tree planting or cause unacceptable risks to workers or the public. Refer to Section 4.10 of the Tree Management Technical Guidelines.

3.11 Increase public involvement in the monitoring and stewardship of trees on private lands.

3.12 Engage with the traditional ecological knowledge of local Aboriginal communities for revegetation and healing of Country with a focus on drainage reserves and riparian corridors.



The Strategy Direction 4 - Manage Tree Risks



Figure 88: Our public spaces need to be maintained and managed to appropriately minimise potential risks from tree failures, but this always has to be weighed against the substantial benefits that trees provide to the community. (Source: Liverpool City Council)

## Direction 4 - Manage Tree Risks

Tree risk management is not about precisely predicting or preventing tree failure. It is about taking a systematic approach to broadly identify tree-related risks and then determine the probability of tree failure and the likely consequence, using a consistent assessment method. Our tree risk management is based on the following principles:

- Trees (both public and private) are essential infrastructure assets providing innumerable benefits to our community.
- The overall risk from trees and branches falling is typically extremely low.
- We cannot eliminate tree risks entirely any tree can fail, even a healthy tree. They are living structures and they can sometimes shed branches or fall over, particularly in extreme weather.

The Liverpool local government area covers a vast and diverse area of 306km<sup>2</sup> with numerous public trees that are managed with very limited resources. It is important that our approach to tree risk management is therefore targeted. Council will focus **active risk assessment** in those places with a confluence of high use and larger trees, where there may be higher consequences in the event of a failure.

Risk assessment will be carried out by appropriately trained professionals and undertaken using an industry-accepted best practice tree risk assessment protocol. A range of risk mitigation measures will always be considered to try and retain a tree, in preference to complete removal. Detailed guidance is provided in the Tree Management Technical Guidelines.



Figure 89: Public spaces of high use and occupancy require greater vigilance to maintain trees in good health and minimise tree -related risks. (Source: Arterra)

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 ITEM 03
 Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management Technical Guidelines)

 Attachment 3
 Draft LCC Tree Management Strategy - May 2024



# The Strategy Direction 4 - Manage Tree Risks

#### Actions:

4.1 Maintain public safety and reduce the risk of personal injury or property damage through the use of best practice tree assessment and risk mitigation.

4.2 Promote tree risk management (for both public and private trees) that explores all appropriate opportunities for tree retention, over removal. A decision-making protocol for tree removals will be established, based on the Tree Policy and methods outlined in the Tree Management Technical Guidelines.

4.3 Active assessment of Council-managed trees will be undertaken in zones of highest occupancy and at a regular interval. These will be expanded to other areas over time, to include all trees within our asset management system.

4.4 Records will be maintained of the trees that have undergone risk assessment and any actions identified to minimise risk.

4.5 A process will be established to address risk management requirements, in a timely manner, for any Council-managed trees that have been assessed as having elevated risks, and to generate appropriate work orders for risk mitigation actions where appropriate.



Figure 90: Public spaces of high use and occupancy require greater vigilance to maintain trees in good health and minimise tree -related risks. (Source: Arterra)



Figure 91: A good tree risk management strategy will help reduce treerelated risks through risk assessment, tree maintenance and other risk mitigation procedures. (Source: Arterra)



The Strategy Direction 5 - Link the Green and Blue



Figure 92: Sydney Park incorporates a water harvesting function, collecting storm water from the surrounding streets, allowing it to move through the parkland and slowly be purified of pollutants through a process of biofiltration. (Source: Arterra)



Figure 93: Extensive rain gardens and passive irrigation for street and tree planting in Knoxville, Tennessee. (Source: Arterra)



Figure 94: Permeable and street side rain gardens can be used extensively in public spaces to allow water to be retained in the landscape, replenish the water table and provide a passive, economical and sustainable source of moisture for tree growth. (Source: Arterra)

# Direction 5 - Link the Green and Blue

All living things need water. Many natural ecosystems rely on the intrinsic connection between plants and water. In urban contexts, substantial mutual benefits are gained from an integrated approach to water management, where trees frequently benefit from additional water being channelled to them. This in turn, decreases the amount of stormwater runoff by intercepting water in the canopy and increasing soil water infiltration. This is part of an integrated approach to designing public places, allowing green infrastructure to better deliver multiple ecosystem, environmental and other services simultaneously.

Additionally, the process of biofiltration, removes pollutants as well as nutrients like soluble nitrogen and phosphorus, thereby reducing the disturbance to the health of aquatic ecosystems. Recent stormwater studies conducted in Melbourne demonstrated the above, in experiments where the integration of trees within 'rain gardens' markedly increased the evapotranspiration of water from the 'rain gardens' resulting in a reduction in the volume of stormwater runoff (Denman, May, & Moore, 2011).

The twin challenges of modern-day stormwater management and climate resilience require our urban developments to depart from traditional approaches and implement a new view on water infrastructure. The more that we embrace integrated stormwater management, the more we will have a cleaner, greener future where we are able to better manage risks, keep water costs low, and provide the widest possible range of environmental, economic and social benefits. It will also reduce our reliance and use of valuable potable water (Valderrrama, 2018).

While shading is the key process by which trees cool the environment, evapotranspiration of water is another way trees help cool the environment. Trees draw water through their roots and use a small amount in the process of photosynthesis. Most of the water evaporates through the leaf surface in a process called transpiration. The conversion from water to water vapour, results in a cooling effect. This also means that trees become susceptible to damage and leaf scorch if they run out of water in hot weather. Our trees need to be well-watered if they are to be healthy, resilient, long lived and provide maximum environmental benefits.

Use of stormwater and other forms of passive and active irrigation to support canopy trees will contribute to tree growth in the long term. However, during establishment phases watering is key and prevents wasted resources. During extended periods of drought, some modest active irrigation may be required to ensure tree health and longevity. This is not possible on a larger scale, which is where appropriate soil volumes and passive irrigation are so important.



# **The Strategy** Direction 5 - Link the Green and Blue

#### Actions:

5.1 Ensure all premier urban parks are sustainably irrigated, to help support trees transpiration processes and their cooling effect.

5.2 Introduce Water Sensitive Urban Design (WSUD) philosophy as a practical objective for all public spaces. Divert stormwater to trees and green landscaped areas, wherever possible, using the LGA's extensive network of roadways to harvest water, and through engineered and integrated systems of kerb inlets, rain gardens, constructed soil profiles and structural soils.

5.3 Actively discourage and reduce the extent of impervious surfaces used throughout the LGA. Where hard surfaces are necessary, preference the use of permeable pavements wherever possible, to mimic natural hydrological movement and contribute to recharging of ground water storage and passive irrigation.

5.4 Encourage private use and local collection and storage of stormwater and rainwater for reuse in landscape irrigation within all new developments.

5.5 Encourage the use of 'smart' irrigation systems linked to soil moisture and weather conditions to avoid waste.

5.6 Select tree species with an aim to balance drought and heat tolerance, together with the need for transpiration and good shade provision during summer and heatwaves.

5.7 Establish ongoing but sustainable irrigation for any significant trees and important trees in key public places. Respond flexibly when necessary to temporarily irrigate such trees during drought conditions, and in a timely fashion.

5.8 Make water issues, reuse and passive irrigation more visible to the public and educate the community about sustainable water use and ecological benefits.



Figure 95: Water needs to be seen as a resource that is precious. It should be used wisely, and where possible, directed to our green infrastructure first before being directed to our creeks and water ways through pipes and culverts. (Source: Arterra)



Figure 96: Harold Park, Sydney where median swales and rain gardens serve to treat stormwater and passively irrigate extensive tree planting. (Source: Arterra)

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# The Strategy Direction 6 - Promote Private Trees



Figure 97: Use of trees in private gardens adds a depth to the landscape as well as greater canopy cover. (Source: Arterra)

# Direction 6 - Promote Private Trees

There are many stakeholders that have an impact on the urban canopy of the LGA and our ability to increase the canopy coverage. The vast majority of land within the LGA is privately owned, including residential, retail and industrial sites. Trees are a common resource, regardless of what land they grow on or who the current custodians might be. Trees on privately-owned land have potential to make vital contributions to the canopy of our urban forest. In fact, achieving our canopy targets is heavily reliant on the participation of private property owners, in tree preservation, new tree-planting and overall greening efforts.

Newly planted trees take many years to reach maturity and provide the benefits we seek from an extensive tree canopy. Loss of mature trees, results in an instantaneous loss of ecosystem services they provide. This cannot be immediately mitigated with replacement by young trees or much smaller trees. If we are to increase our tree assets and canopy cover, we must first reduce the loss of our existing tree assets, including those on private property.

Council is not responsible for managing trees on private property, however, it is the authorising body for works involving trees on private land. Council will prescribe guidelines for tree protection and preservation, as well as guidelines for appropriate risk management, tree maintenance and removals.

Canopy targets will be promoted to all stakeholders within the Liverpool LGA, including private landholders and government agency managers. It is vital that every stakeholder understands their potential impact so they can make more informed decisions and be accountable for the policies and actions that relate to the urban forest and canopy cover.



Figure 98: Common areas and gardens on private property can make a valuable contribution to canopy cover as well as property value if suitably planted. (Source: Arterra)



# **The Strategy** Direction 6 - Promote Private Trees

#### Actions:

6.1 Council will consistently apply development controls related to trees to mitigate and slow the loss of existing, mature and healthy trees. This will include initiatives such as:

- Limiting unauthorised clearing and tree removals
- Ensuring tree removal is only undertaken for valid reasons and not for convenience or trivial reasons

6.2 Tree-related information on Council's website will be updated to promote the planting and retention of trees on private land, to inform and guide the community, private developers and contractors on all tree matters and be consistent with the Tree Management Strategy and Tree Management Technical Guidelines.

6.3 Council will provide clear guidelines for risk assessment requirements relating to private trees, including:

- assessment and reporting requirements;
- use of appropriately qualified arborists; and
- risk tolerance.

Achieving 30% canopy cover, requires **8,000** new, private trees to be planted annually until 2050. 6.4 Aim to achieve appropriate offset ratios for any existing trees removed. Ensuring that trees removed are replaced, and ideally, more trees are planted than trees removed, particularly if large or significant trees are removed. Refer to Section 4.8 in the Tree Management Technical Guidelines.

6.5 Liaise with private owners of larger industrial or commercial sites backing onto riparian corridors, to provide support with our vegetation activities. For example the majority of South Creek and Kemps Creek corridors are in private or rural residential holdings.

6.6 Proactively engage and partner with other agencies who manage trees within Liverpool LGA, to share resources, build awareness and provide ongoing leadership with regard to urban canopy and tree management, including with:

- Western Sydney Parklands
- Western Sydney International Airport (Nancy Bird Walton) and Aerotropolis
- South Western Sydney Local Health District
- Water NSW
- National Parks and Wildlife Service

6.7 Investigate adoption of incentives for developers to retain existing mature trees or achieve best practice canopy cover targets in new developments.

6.8 Investigate development of a community nursery supplying local residents and developers with a source of endemic trees and supporting the vision for a greener Liverpool through private tree planting.



Figure 99: Use of the right tree in the right place minimises the potential for trees to come into conflict with other components of the built environment or to require excessive maintenance. Use of trees in private gardens adds a depth life and amenity to the landscape as well as greater canopy cover. (Source: Arterra) LIVERPOOL CITY COUNCIL **TREE MANAGEMENT STRATEGY** 89



The Strategy Direction 7 - Build Capacity



Figure 100: Council will add capacity for quick response risk mitigation, as well as ongoing cyclical maintenance. (Source: Arterra)

# **Direction 7 - Build Capacity**

Delivery of a more extensive and improved urban forest requires executive and political support within Council, alignment of all our internal departments as well as increased capacity and technical skill within the Council park and tree management team. Our key functions for urban tree management relate to:

- Public tree asset management including proper planning, planting, ongoing maintenance and risk management.
- Private trees maximising tree preservation through appropriate development controls, regulations and general community education and engagement.

#### Actions:

7.1 Establish an appropriate annual and recurring budget for capital expenditure and maintenance, as part of a long-term financial plan for achieving the aims of this Strategy.

7.2 Establish a fund through annual budget allowances, together with state and federal government grants, and development contributions for the improved management of trees and canopy cover in the LGA.

7.3 Establish a dedicated and well resourced Council Tree Team and build in-house tree expertise through increased staffing and training. Consider creating a Council officer position specifically for identification of tree planting opportunities and a Council officer position to foster inclusion of Aboriginal ecological knowledge and Connection to Country.

7.4 Expand Council's ongoing tree maintenance capacity using both in-house and out-sourced specialist contractors and consultants.

7.5 Ensure adequate resources are provided (including skilled personnel and time allocations) to carry out systematic and proactive tree risk assessments.

7.6 Ensure adequate resources are provided (including skilled personnel and time allocation) to carry out identified risk mitigation tree work. If there are insufficient staff to carry out urgent tree work, this service will be outsourced.

7.7 Use external contractors for additional capacity for tree-planting and cyclic maintenance.

7.8 Use external consultants for additional capacity for tree surveys and risk assessment.



# **The Strategy** Direction 8 - Community Engagement

### **Direction 8 - Community Engagement**

Council recognises the importance of community values in contributing to the successful stewardship of trees as a community asset. We will undertake education and awareness building activities to disseminate evidence-based information on the extraordinary capacity of trees and other green infrastructure to mitigate the impacts of climate change and urban heat. We will provide information on our website, using high quality graphics, to showcase successful tree planting and retention projects, provide helpful information on suitable tree species and how well treed neighbourhoods demonstrate the positive effect of trees on property prices, physical, social and mental well-being.

Educational materials will be made available in the predominant languages of the LGA and will also be made available at community centres and other community institutions.

Council will champion the use of trees within our built environments with a strong emphasis on the use of good quality trees, appropriate soil and drainage provisions and, appropriate species selections in all new Council facilities. We will actively promote trees and positive outcomes online, through social media and at community events.

#### Actions:

8.1 Develop a community engagement strategy for urban greening that promotes the benefits of trees on Council's website, social media and through community events. Identify key streets to pilot a community street tree planting program.

8.2 Prepare a comprehensive suite of public facing tree information 'pages' for Council's website. These should include information on tree removals as well as positive 'greening' messages.

8.3 Prepare printed educational materials that can be disseminated in community centres and other community institutions and events.

8.4 Provide the community and landscape designers, architects and engineers with tools to evaluate the quality of urban greening and differentiate between the benefits of say a large shade tree, compared to an area of lawn.

8.5 Encourage community participation in urban greening, bush care, and street tree planting activities.

8.6 Notify community about tree planting events.

8.7 Establish a community nursery for growing and distributing locally suitable and endemic tree and plant species, similar to that run by Sutherland Shire.

8.8 Undertake annual greening events such as National Tree Day, community planting days, free tree giveaways.



Figure 101: Community planting days and community led projects for an environmental, cultural and sustainable corridor with ongoing, active support from local residents and volunteers, including bush care groups, communitybased art programs, schools and government agencies. (Source: Arterra)



Figure 102: Cool Streets Blacktown-pilot project on community-led decision-making and implementation project for street trees. Collaborative design and community consultation methods aimed at building on resident's knowledge about climate extremes and giving them agency in the process. (Source: NSW Government Architects website)

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# The Strategy Direction 9 - Manage Development Impacts



Figure 103: Aerial photograph over the central business district of Liverpool and industrial area to the south, showing the impact of development on the landscape and tree cover. (Source: NearMap)

# Direction 9 - Manage Development Impacts

Existing Development Control Plans (DCPs) are sometimes not adequately protecting existing trees nor stipulating requirements for individual developments to contribute to our tree canopy targets. Local development controls are required to ensure that future neighbourhoods in the growth corridor are green environments that can sustain a healthy lifestyle. Council will review and update our suite of DCPs to better guide and control development and positive tree outcomes. This will require that consideration for retention and inclusion of trees is a core element of the design proposals.

#### Actions:

- 9.1 For all development projects, development controls will include:
- Minimum space requirements, both above and below ground to accommodate adequate space for tree root growth, trunks and canopy.
- Minimum requirements for soil quality, volumes and structure, including requirements for topsoil retention and consideration of levels and services.
- Avoidance of monoculture landscapes, through inclusion of a more diverse range of species, with not more than:
  - 40% of trees from any one plant family;
  - 30% from any one genus; and
  - 10% from any one species.
- Use of 'right tree in the right place' principles, emphasising the use and benefit of the largest tree possible for each location.



Figure 104: New developments in the LGA must aspire to the spacious, and well-treed characters of our older established suburbs. (Source: Arterra)



# The Strategy Direction 9 - Manage Development Impacts

9.2 Clear guidance will be provided for subdivision planning and redevelopment/urban renewal projects to support tree retention and potential to achieve canopy targets, allowing for the long-term coexistence of infrastructure, housing, vehicles and trees. This will include specific requirements for:

- Minimum road width allocation.
- Minimum verge width allocations
- Minimum space and soil volumes to support large trees capable of providing good canopy coverage.
- Planning to avoid conflicts between services and a tree's growing space.
- Water Sensitive Urban Design including integrated water management for passive irrigation of street and park trees.
- Frequency / density of tree planting.
- Species selections

9.3 Multi-dwelling, mixed use and commercial development applications will be required to demonstrate how tree cover targets, long term and sustainable growth will be met.

9.4 Council will introduce and enforce appropriate tree bonds for the protection of public trees and some significant private trees to be retained. (Calculation of bonds to be based on industry average cost to supply and install equivalent tree plus 104 weeks of maintenance). Refer to Section 2.7 of the Tree Management Technical Guidelines for further guidance.

9.5 Council will require compensation for trees that are removed from public land due to development, including those trees that are approved for removal and trees accidentally damaged during construction. Calculation of the compensation amount will take into account any costs incurred by Council for removing the tree and suitable reinstatement costs to replace the tree and its values in the landscape. The tree valuation component will be determined in accordance with Action 9.6, below.

The City of Melbourne has developed a compensation process for public trees lost to development that recognises trees have greater value than the cost of their removal and replacement. The calculation considers the amenity and ecological value in the landscape, in addition to removal and reinstatement costs.

Value (V) = Basic Value (\$) x Species (S) x Aesthetics (A) x Locality (L) x Condition (C) 9.6 A tree valuation methodology will be adopted by Council that is consistent with or endorsed by the current version of Arboriculture Australia's "Tree Valuation – Industry Guidance on Tree Valuation Methodologies, Practices and Standards". Refer to Section 2.7 of the Tree Management Technical Guidelines for further guidance.

9.7 Council will introduce development consent conditions and bonds relating to protection of all newly planted street trees on all development sites and then enforce compliance and/or replanting if trees are damaged or destroyed during development, at no cost to Council.



Figure 105: New developments must seek to retain and protect existing trees Where public trees are removed or damaged they shall be replaced using suitable funding and enforcement mechanisms (Source: Arterra)

LIVERPOOL CITY COUNCIL TREE MANAGEMENT STRATEGY 93

THE STRATEGY

The Strategy Direction 10 - Policy Alignment



Figure 107: Newer developments leave little space for trees, plants or even grass. Where small lot sizes make private tree planting difficult or impossible, this needs to be balanced by creating far more generous roadway allowances with sufficient area for vehicles as well as ample growing space for trees. (Source: Arterra)

## **Direction 10 - Policy Alignment**

All policies and associated documents related to our trees and tree management within the Liverpool LGA, need to be consistent and aligned in relation to tree management and tree canopy targets. The strategic directions of this Strategy can only be effective if they are appropriately conveyed to developers and the community, elaborated within the Local Environmental Plan, Development Control Plans, and then applied consistently throughout the LGA.

It is intended that updated and revised planning controls in relation to trees, may lessen the impact of any State policies that are at odds with greening initiatives.



Figure 106: Comparison with older established suburbs shows that there was less 'house' and more open space that allowed more tree planting opportunities and more overall green space. Our newer developments leave little space for trees, plants or even grass. What little road verge space is left for grass, is often taken over as additional 'off-street' parking. Where small lot sizes make private tree planting difficult or impossible, this needs to be balanced by a more generous roadway allowances ensuring sufficient areas for vehicles as well as ample growing space for large and spreading trees. (Source: Arterra)



# The Strategy Direction 10 - Policy Alignment

#### Actions:

10.1 Amend Council planning controls to address the key initiatives of this Strategy, including those items identified as part of Strategic direction 9.

10.2 The LEP review which is currently underway will ensure that the critical issue of retention and expansion of tree canopy cover is addressed in the context of urban heat mitigation, for:

- Residential land
- Commercial land
- Industrial land
- Environmental land

10.3 Protection of biodiversity and vegetated connectivity will be addressed in the urban context as well as for areas of natural vegetation.

10.4 DCP reviews will update provisions for tree preservation and any related landscape design provisions.

10.5 Insistence on the provision of professional and adequate arboricultural impact assessments for all trees on development sites. This will support Council planners with making decisions on requisite tree retention in relation to canopy targets and drafting of appropriate tree-related conditions of consent. 10.6 Tree provisions will be drafted with urban heat mitigation as an objective, with guidance from the Urban Heat Planning Toolkit, Western Sydney Regional Organisation of Councils (2021) and other like documents.

10.7 Minimum requirements will be established in relevant planning controls for canopy cover targets to be applied in the future for the various land use zones throughout the LGA, on both public and private property.

10.8 All new car parks will be required to be appropriately planted with suitable, broad spreading shade trees, demonstrating a reasonable prospect of achieving a minimum of 30% canopy cover to the area of the site applied as an open-air, at-grade car park.

10.9 Planning controls shall be applied rigorously and consistently to ensure compliance with tree retention requirements, planting and canopy cover targets.

10.10 Partner with other Western Sydney LGAs to advocate to the NSW Government to mandate urban tree canopy cover targets in all future release areas and amendment of the Exempt and Complying Code to require higher standards for landscaped areas and tree planting for smaller lot residential development.



Figure 108: Incorporation of trees in car parks, provides very welcome shade for cars as well as reducing heat loads and re-radiated heat from pavements. Lack of tree planting and shade to car park and inappropriate space and physical provision for trees should no longer be accepted. (Source: Arterra)



This section of the Strategy establishes the broad implementation requirements to achieve our tree management and urban greening targets.









# 5.0

IMPLEMENTATION

#### **Funding and Resources** 5.1

Implementation of the Tree Management Strategy will require significant additional resources to achieve Appropriate funding, both recurrent and one-off capital injections will need to be provided as part of a resourcing strategy within Council's long-term financial plan.

To achieve the directions identified in this Strategy, Council will need to consider:

- Allocating or employing suitable Council staff to oversee and co-ordinate all park and street tree planting programs, including organising advanced plant procurement, supply methods and contracts, as well as scheduling and resourcing of planting programs and suitable after planting care.
- Maintaining suitably resourced and appropriately trained staff (or contractors) for the ongoing management and pruning of mature street and park trees.
- Maintaining suitably resourced and appropriately trained staff (or contractors) for the ongoing assessment and mitigation of tree risk.

A broad opinion of probable costs is outlined in section 5.4, as a guide. The project-related actions within the Strategy are proposed to be funded from various sources, including the following:

- Planning Proposals (PP), Development Assessment (DA) applications and Voluntary Planning Agreements (VPAs) - the Strategy will be used to negotiate suitable streetscape and other public domain improvements provided by others, where they are impacted by private development.
- Grant Funding Many projects will require external or grant funding from alternate sources. This Strategy will be used to help support applications for state and federal funding, with project-based opportunities in relation to urban greening, community development, education, health and heritage.
- The Western Sydney City Deal especially in relation to commitments like the restoration and protection of South Creek, as well as more general 'liveability' projects associated with urban green canopy and open space.
- Council funding the Strategy will inform Council funded projects within the city centre and inner suburbs, including capital works projects and recurring maintenance
- Council will also explore opportunities for further corporate sponsorships or philanthropic project contributions.



Figure 109: 'Baking' hot asphalt surfaces of carparks in summer can be cooled by shading with tree canopy. (Source: Arterra)



# Implementation Responsibility





# 5.2 Responsibility

Historically Council has not had a dedicated 'Urban Forest' manager, unit or department within Council. Given the growing importance of urban greening, biodiversity and climate change, Council will investigate the potential to establish a dedicated department and manager for these pursuits, under one banner. This would benefit outcomes with clearer definition of budgets, responsibilities and resources for this multi-faceted and cross-department resource.

In the absence of a single department, the directions outlined in this Strategy will be delivered in a crossdisciplinary manner, with responsibility distributed throughout virtually all Council's various teams and departments. These broader responsibilities include:

- Review of statutory documents in light of the Tree Management Framework.
- Incorporation of trees as a fundamental component of all existing and future street and public space design.
- Incorporation of water harvesting details within public projects.
- Championing the use of trees in the built environment with a strong emphasis on integrating good quality, appropriate trees in all new Council facilities.
- Management of contracts for tree supply, maintenance and planting.
- Developing and running community education programs.
- Preparation of information and educational materials for the website, social media and other outlets.
- Engagement with private owners of lands situated along riparian and other open space corridors.
- Collaboration with other agencies such as Western Sydney Parklands, Department of Defence and National Parks and Wildlife Service.
- Regulatory role in relation to development assessments and enforcing compliance with approvals.
- Engage of external specialist consultants and utility arborists to expand our capacity to deliver tree management in accordance with the Strategy.

Achieving a 30% canopy cover, requires Council to plant more than 100,000 new trees between 2024 -2050.

# .3 Prior

# Implementation Priorities and Timing

# 5.3 Priorities and Timing

While this strategy sets out tree canopy targets for the next 25 years, Council intends all the key actions to be instigated within a 2-5 year time frame. This is to allow for the large-scale, physical changes to the environment that can only come with the urban forest expanding and maturing, in the fullness of time. It is important we act now and act decisively. Physical conditions and targets will only become more difficult as time goes on.

The Tree Management Strategy does not identify any low priority items. The strategic directions are all part of an integrated approach of actions that need to be progressed concurrently and in a co-ordinated cross-department fashion, for a noticeable impact on canopy cover and heat mitigation and consequent lifestyle and health improvement for the community of the Liverpool LGA.

The climate emergency and western Sydney's high vulnerability to the effects of climate change, require immediate and ongoing action on all items. For this reason, actions are categorised as:

- Urgent Tasks
- Ongoing Tasks internal
- Ongoing Tasks outsourced

#### **Urgent Tasks**

- Adopt the Tree Management Strategy and Tree Management Technical Guidelines to establish Council's documented positions on tree protection requirements, tree management, canopy cover and tree planting targets, including a climate appropriate species lists, exempt species list and appropriate planting details and relevant specifications.
- Seek increased capital and recurring budgets for tree planting and management, including for streets, drainage and riparian corridors and other vulnerable areas.
- Adopt a formal, recognised and defensible Tree Risk Management approach.
- Initiate and maintain a comprehensive and user-friendly Tree Asset Management System.
- Update and align the LEP and relevant DCP for consistency with the Tree Management documents, particularly to achieve appropriate canopy cover targets for different land uses and to better cater for street tree planting in new subdivisions and avoid duplication and ambiguity.

#### Ongoing – internal

- Commence inventory of all public trees (parks and streets).
- Commence risk assessment of all priority parks and high use areas (CBD, transport interchange nodes, children's playgrounds)

- Commence improving canopy cover in key urban areas. Start in the most heat vulnerable areas (eg. Green Valley) and then progressively work outwards:
  - Audit of parks and identify immediate planting opportunities.
  - Audit non-bushland drainage reserves and dry basins and identify planting opportunities.
  - Start planting existing streets that have few or no street trees. Make sure trees are as large as possible for each selected location. Ensure they are planted with appropriate installation methodology, in accordance with the Tree Management Technical Guidelines.
  - Replace all existing dead and dying public trees in a timely fashion.
  - Initiate car park retrofits for tree planting with adequate soil volumes and WSUD detailing.
- Undertake tree planting in public areas, including establishment maintenance and formative pruning using dedicated in-house staff with appropriate resources and training.
- Initiate a strong and consistent approach to protection of trees on development sites including:
  - Thorough consideration of potential tree losses vs canopy targets in DA assessments, especially in the context of the 'green' and 'blue' nexus.
  - Consistent program of compliance checks for development applications and construction sites.
  - Initiation of bonds for protection and replacement of street trees in new subdivisions.
- Progressively update website and social media materials.

# Items critical to the success of the Tree Management Strategy

- 1. Instigation of a computerised tree asset management system.
- 2. Planting opportunity audit of all Council managed parks.

3. Begin street tree planting and replacements in suburbs and areas of least canopy cover.

4. Professional and recorded risk assessments for trees in high use areas.



Implementation Priorities and Timing



Figure 110: Trees should be seen as a vital part of all urban infrastructure. They are long term assets that take years to mature and provide their full benefits. (Source: Arterra)

- Liaise with other government stakeholders that are responsible for trees and tree planting within the LGA.
- Regularly monitor canopy and measure key performance indicators for progress.

### Ongoing – external

- Establish formal Contracts for tree work:
  - reactive and cyclic tree maintenance and pruning; and
- urgent risk mitigation work and other tree removals
  Establish briefs and contracts for ongoing assessments
- and studies using external consultants and contractors:
  - tree risk assessments;
  - assistance with tree inventory surveys;
  - street tree master plans and/or planting strategies for key urban areas;
  - ongoing Park audits and tree planting plans;
  - establishment of a Significant Tree Register; and
  - canopy cover measurement.

"The great French Marshall Lyautey once asked his gardener to plant a tree. The gardener objected that the tree was slow growing and would not reach maturity for 100 years. The Marshall replied, 'In that case, there is no time to lose; plant it this afternoon!' ".

John F. Kennedy



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Estimates of Cost and Funding

# 5.4 Estimates of Costs and Funding

The opinion of probable cost (more detailed and itemised in Appendix 6.1) is to be used as a guide to understand the overall magnitude of costs associated with the proposed actions outlined in the Strategy. It will be used to help inform Council's long-term financial plan and allocating suitable resources, staffing and funds for implementation of the Councils' Tree Management Framework. Further discussions will occur within Council to develop ongoing detailed capital and recurring budgets for each item.

Table X - Summary of Key Costs and Funding Requirements			
Strategic Direction Allocations	Approximate Capital or One off Expenditure	Approximate Annual Expenditure	
1. Value Trees - Identify and manage trees as assets	\$670,000	\$300,000	
2. Canopy Cover - Increase canopy cover and build resilience	\$560,000	\$2,651,000	
<b>3. Manage Trees</b> - Manage the urban forest in accordance with best practice	\$600,000	\$340,000	
4. Mitigate Tree Risk - Manage tree-related risks	-	\$70,000	
5. Living Elements - Recognise the vital connections between 'green' and 'blue' infrastructure	-	\$4,100,000	
6. Promote Trees - Protect and promote trees on privately owned land	\$40,000	\$112,000	
7. Capacity - Build Council capacity for tree management, planting and protection	-	\$1,646,000	
8. Education - Build community awareness and encourage participation in urban greening	\$350,000	\$200,000	
9. Protect Trees - Manage the impact of development on existing trees	-	-	
<b>10. Support</b> - Review planning policy and development controls to promote trees and tree retentions	-	-	
TOTAL	\$2,220,000	\$9,419,000	

Table X - Summary of Key Costs and Funding Requirements Based on Priority				
Total Funding Allocations per Capital or Recurring	High Priority - Needed for core Goals	Moderate Priority - Will actively support outcomes	Lower Priority- Could wait a short time until funding or grants become available	
1. Capital Expenses (\$2,220,000)	\$440,000	\$1,160,000	\$620,000	
2. Annual Expenses (\$9,419,000)	\$4,911,000	\$1,338,000	\$3,170,000	



# Implementation Monitoring and Review

### 5.5 Monitoring and Review

It is recommended that a review and update of the Tree Strategy and associated Tree Management Technical Guidelines be undertaken on a 10 yearly basis.

In accordance with the Integrated Planning and Reporting Guidelines, basic progress on the delivery of action items in the Strategy will be reported monthly and annually.

Ongoing measurement, monitoring and reporting of more detailed progress on the strategic directions for tree management should be undertaken every 3 years.

This should report on the following performance indicators:

- Canopy cover measure for net increase; identify gains and losses and where they have occurred.
- Number of trees planted measure for net increase, and as a comparison to number of trees approved for removal or otherwise removed by Council .
- Number of trees removed measure for net number of trees approved for removal, as compared to number of trees planted.
- Temperature readings in key urban areas measure for average temperatures and potential reductions or increases over time.
- Distance from a defined 'gridded' point system to the nearest green infrastructure or park, within urban areas.
- Community attitudes survey of residents for a better understanding of intrinsic attitude to trees, willingness to participate in greening activities, and success of community education and awareness programs.

Council will commit to canopy measurements being undertaken and analysed within the Council's GIS system on a minimum of 3-yearly basis, to assess how the initiatives of the Tree Management Strategy are progressing and whether there is a need to advance the delivery programs. 

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 ITEM 03
 Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management Technical Guidelines)

 Attachment 3
 Draft LCC Tree Management Strategy - May 2024

This section of the Strategy contains additional, related information.





ITEM 03Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management<br/>Technical Guidelines)Attachment 3Draft LCC Tree Management Strategy - May 2024



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**APPENDICES** 

**OPINION OF COST** 

6.1

#### **Opinion of Probable Cost** Responsible Cost Action Item Comment/implications department Strategic Direction 1 — identify and manage trees as assets 1.1 Policy position Identify trees in our streets and parks as essential assets of our urban infrastructure and incorporate tree management into broader asset management thinking and activities. 1.2 Engage external consultants \$250,000 annually Survey all public trees, managed by the City of Liverpool, including street trees, park trees and trees on Crown land managed by the Council. 1.3 Policy position Prepare a tree inventory as an electronic Tree Asset Register. The register will be established as an updateable electronic database that can hold complete history for each tree, with data including images and maintenance records. 1.4 Policy position \$50,000 annually The Tree Asset register will also maintain records of all assets that have undergone formal risk assessment, together with any actions identified to minimise tree-related risk, details of any compensation claims (eg for repairs to private structures) and scheduling of future inspections. 1.5 Update Council's asset \$250.000 Council will investigate whether to update the internal asset when the state of management system - one off cost + ongoing support. Purchase tree management system – one off cost + ongoing support \$250.000 1.6 Engage external consultants Engage a specialist consultant to survey key areas of the LGA for trees of heritage significance or other outstanding value; and to prepare a Significant Tree Register. Data entry/data export \$20.000 1.7 Co-ordinate the Tree Asset Register with information on known significant trees, so that significant trees managed by Council are clearly identified and managed accordingly. \$150,000 Engage external service 1.8 Undertake a tree canopy survey and establish annual (or maximum 3-yearly) reviews. Strategic Direction 2 — Increase canopy cover Policy position and engage enforcement officer \$52,000 annually 2.1 Protect existing canopy, avoiding unnecessary pruning or removals. Annual, recurring budget for: 4,300 Street trees \$2,409,000 annually being: 4,300 Street trees 2.2 Establish an annual tree planting program We will plan for the planting of over **7000** trees each year, for the next 11-year period. Street plantings will be of – 200L × 100 – 100L × 2,000 \$500.000 \$1,300,000 advanced, robust-sized trees of at least 45L and preferably 100L or above. Park trees will be planted in a greater variety – 45L x 2,200 2,700 Park trees \$374,000 2,700 Park trees - 200L x 50 - 100L x 150 - 45L x 300 of sizes and include small trees and tube stock, where appropriate, as well as substantial feature plantings of \$100.000 \$75,000 \$45,000 >200L trees for premier parks. Mass planting using tube stock will also be undertaken along drainage lines. \$ 5000 5L x 200 tube stock x 2000 \$10,000 2.3 Initial audit could be \$100,000 annually Undertake an initial audit for planting opportunities in Council park lands, then follow up with ongoing audit of outsourced if Council can't resource in house. park lands for further tree planting. 2.4 included above Council will manage public parks and plazas to create 'oases' of shade in the public domain.



# Appendices Opinion of Cost

Opinion of Probable Cost				
Action Item	Comment/implications	Responsible department	Cost	
2.5 Carry out 'gap' audit of existing street tree planting locations, in accordance with the Western Sydney Street Design Guidelines, that recommend achieving continuous canopy cover of both sides of every street. Fill any identified locations with an appropriate tree, including replacing of dead or senescing trees. Actively seek new locations for establishing tree planting, such as additional planting in wide areas of pavement, in-road planting in wide roadways.	Dedicated role within Council		\$90,000 annually	
2.6 An urgent replacement program will be established for dead or under-performing street and park trees, as well as a practice of scheduling replacement of any street or park trees that are removed.	Policy position & associated scheduling requirements.		included above	
2.7 Specific tree planting policies will be introduced into Park Management Plans, for the maintenance and replacement of trees, in accordance with this Strategy document and consistent with the Tree Management Specifications.	Implemented as park management plans are prepared.		-	
2.8 Street tree masterplans will be undertaken for key urban spaces, incorporating summer shade for pedestrian footpaths and cycleways, wherever possible. Trees will be introduced into all extensively paved public spaces such as plazas and carparks.	Updated Liverpool CBD and 10 x densely populated urban/suburban areas @\$50K/report/ master plan		\$60,000 \$500,000	
2.9 As much as possible, street tree installation will be detailed in accordance with the principles of Water Sensitive Urban Design. This will maximise stormwater harvesting in public places, to support soil moisture.			-	
Strategic Direction 3 — Manage the urban forest in	n accordance with best pra	octice		
<b>3.1</b> Practice the principle of 'right tree in the right place' with emphasis on using the largest tree possible for each location.	Policy position Implications for budget allowance		_	
<b>3.2</b> Utilise a mixture of trees species to provide diversity of sizes and habitat, achieving a mix from at least 3 different botanic families for all major streets and park plantings.	Policy position		_	
3.3 Increase urban forest diversity through considered tree species selection in all street and park masterplans.	Ongoing monitoring of tree asset register, no addition cost		-	
<ul> <li>3.4</li> <li>Achieve a diversity of mature tree sizes with a minimum of: <ul> <li>10% civic scale trees</li> <li>30-35% large trees</li> <li>50-55% medium trees</li> </ul> </li> </ul>				
<ul> <li>No more than 10% small trees.</li> <li>3.5 Improve soil conditions for newly planted trees, using adequate soil volumes and appropriate tree installation methodology, as per the Tree Management Guidelines.</li> </ul>	Implications for trees planted in streets and plazas. Allow up to \$15K for addressing over an above planting requirements for difficult sites		\$240,000 annually	
3.6 Select species and planting environments for changing climatic conditions and use the principle of 'the right tree in the right place', as outlined in the Recommended Tree Selection Schedule, in Tree Management Technical Guidelines.	Instigate broad use of Recommended Tree Selection schedule.		-	
3.7 Remove weed species and undesirable plants to remove potential weed sources and urban maintenance burdens.	Following Action 1.2, review asset register and plan for replacement of weed species.		\$100,000 annual allowance	

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# APPENDICES

6.1

# Appendices Opinion of Cost

Opinion of Probable Cost					
Action Item	Comment/implications	Responsible department	Cost		
3.8 Collect and re-use rainwater as much as possible. Identify storm water harvesting opportunities and install new street trees with storm water harvesting details, where appropriate.	Project based cost implications. Plan for 3 new installations per year?		Determined per project but allow \$600,00 for pilot projects, demonstration sites		
Strategic Direction 4 — Manage tree risk					
4.1 Maintain public safety and reduce the risk of property damage through the use of best practice tree assessment and risk mitigation.	Policy position		_		
<b>4.2</b> Promote tree risk management (for both public and private trees) that explores all appropriate opportunities for retention, over removal. A decision-making protocol for tree removals will be established, based on the Tree Policy.	Policy position		-		
<b>4.3</b> Active assessment of Council-managed trees will be undertaken in zones of highest occupancy at a regular interval, and expanded out to other areas over time, to include all trees on our asset management system.	Undertake formal certification of staff. Additionally outsource urgent work in well-treed high use areas - see also Action 7.5		\$20,000 annually		
4.4 Records will be maintained of the trees that have undergone risk assessment and any actions identified to minimise risk.	Ongoing record keeping		_		
<b>4.5</b> A process will be established to address risk mitigation requirements, in a timely manner, for any Council-managed trees that have been assessed as having elevated risks, and to generate appropriate work orders for risk mitigation actions.	Ongoing process for work order generation and implementation		\$50,000 annual allowance		
Strategic Direction 5 — Recognise the link between	n 'green' and 'blue'				
5.1 Ensure all planted parks are irrigated, to support trees transpiration processes and their cooling effect.	Design and installation of 'smart' irrigation systems to work in tandem with passive irrigation. Review park irrigation throughout LGA and allow for installation of irrigation,		\$3,000,000 annually		
	stormwater harvesting to 6 parks/year				
5.2 Introduce Water Sensitive Urban Design (WSUD) philosophy as a practical objective for all public spaces. Divert storm water to trees and green landscaped areas, wherever possible, using the LGA's extensive network of roadways to harvest water, through engineered, integrated systems of kerb inlet pits, rain gardens, constructed soil profiles and structural soils.	Policy position Over an above cost implications per project compared to status quo. Plan for 2 new/renewal projects per year? Included as part of project costs		\$600,000 annually		
5.3 Reduce the extent of impervious surfaces throughout the LGA. Where hard surfaces are necessary, preference the use of permeable pavements wherever possible, to mimic natural hydrological movement and contribute to recharging of ground water storage, particularly in the vicinity of tree plantings	Cost implication per project. Plan for 2 new/renewal projects per year? Determined per project, not part of tree budget.		\$500,000 annually		
<b>5.4</b> Encourage private use of local collection and storage of storm water for re use in landscape irrigation.	Policy position. See Strategic Direction 8. Implement through development assessment/ approval process, as appropriate.		-		



# Appendices Opinion of Cost

Opinion of Probable Cost			
Action Item	Comment/implications	Responsible department	Cost
5.5 Encourage use of 'smart' irrigation systems linked to soil moisture and weather conditions to avoid waste.	Policy position. See Strategic Direction 8		-
<b>5.6</b> Select tree species to balance drought and heat tolerance, with the need for transpiration and shading.	Implemented in association with Strategic Direction 3. Refer to Recommended Tree selection schedule		_
5.7 Establish ongoing irrigation of significant trees and trees in key public places. Respond flexibly to temporarily irrigate trees during drought conditions.	Following Action 1.2, establish irrigation for significant trees (including Heritage items 21, 22, 94 & 99). Add trees identified as part of Action 1.6.	Tree maintenance team	Determined per tree
<b>5.8</b> Make water issues more visible to the public and educate the community about water use and conservation benefits.	Refer Actions 6.2 & 8.2.		-
Strategic Direction 6 — Manage trees on privately	owned land (or land manag	ged by other agencies)	
<b>6.1</b> Council will consistently apply development controls related to trees to stem the loss of existing, mature and healthy trees.	Ongoing assessment of development applications and tree permits applications.		-
<b>6.2</b> Tree-related information on Council's website will be updated to inform and guide the community, private developers and contractors on all tree matters and be consistent with the Tree Management Strategy and Guidelines.	Web pages prepared internally. Content to be based on Tree Management Framework and normal Council reporting cycles.		\$15,000
6.3 Council will provide clear guidelines for risk assessment requirements relating to private trees, including: - Assessment and reporting requirements - Use of appropriately qualified arborists - Risk tolerance	Refer Actions 6.2 & 8.2.		\$25,000
<b>6.4</b> Council's policy will aim to achieve an offset ratio of 3 to 1 for any existing trees removed. That is, 3 trees to be planted for each tree removed.	To be implement as part of development assessment/ approval process and tree permit application process.		-
<b>6.5</b> Liaise with private owners of industrial sites backing the riparian corridors, to provide support with vegetation activities. The majority of South Creek and Kemps Creek are in private, rural residential holdings. Council will focus on private commercial landowners regarding vegetation activities.	May be undertaken internally or contracted to a community engagement consultant. Option to provide grant or similar cost matching contributions or donations of plants etc.		\$100,000 annual allowance to be spent primarily on achieving measurable outcomes of additional planting on private lands
<b>6.6</b> Proactively engage and partner with other agencies who manage trees within Liverpool LGA to share resources, build awareness and provide leadership for tree management.	Quarterly contact with other agencies such as Western Sydney Park, Aerotropolis, Western Sydnmey International Airport, Sydney Water, NPWS, TfNSW Allow 60 person hours annually, recurring		\$12,000 annually



6.1

# Appendices Opinion of Cost

Opinion of Probable Cost					
Action Item	Comment/implications	Responsible department	Cost		
Strategic Direction 7 — Build Council Capacity for Tree Management					
<b>7.1</b> Establish an appropriate annual budget for capital expenditure, as part of a long-term financial plan for achieving the aims of this Strategy.	Part of financial planning process.		_		
7.2 Establish a fund through annual budget allowance, state and federal government grants and development contributions for the management of trees in the LGA.	Preparation of grant applications for various projects. Can undertake this via a 6-month temporary part-time officer role (allow say \$40K salary) *Blacktown council was successful in being awarded 1.7M from the 2022 'Greening our City' grant		\$40,000 annually		
7.3 Establish a council Tree Team and build in-house tree expertise through increased staffing. Consider creating a Council officer position specifically for identification of tree planting opportunities and a council officer position to foster inclusion of Aboriginal ecological knowledge and Connection to Country	Additional 2 tree officers, AQF 5 for: - Management of database, ID planting opportunities and implementation of planting programs. - Input into DA assessments and compliance. Aboriginal ecological officer with tree expertise, to assist implementation of TMS and overlay with knowledge of Country, bush fire		\$300,000 annually		
7.4 Expand Council ongoing tree planting and maintenance capacity	management practices, etc. Second planting/ maintenance crew: 2 utility arborists (plus irrigation experience) + vehicle + equipment.		\$306,000 annually		
<b>7.5</b> Ensure adequate resources (including skilled personnel and time allocation) to carry out systematic, active tree risk assessments.	Engage qualified arborists. Allow assessment of 200 trees per year @ average of \$1,000/tree for consultant fees; Tree Risk Assessment training for tree team, see Action 4.3.		\$200,000 annually		
7.6 Ensure adequate resources (including skilled personnel and time allocation) to carry out identified physical programmed and reactive tree work. If there are insufficient personnel to carry out urgent tree work, this service could be outsourced.	Engage qualified utility arborists for periodic, emergency and urgent tree work.		Standing Contract with rates - say \$800,000 annually		
7.7 Use external contractors for additional capacity for tree-planting and cyclic maintenance.	As required, project-based		included above		
7.8 Use external consultants for additional capacity for tree surveys, and risk assessment.			included above		


### Appendices Opinion of Cost

Opinion of Probable Cost			
Action Item	Comment/implications	Responsible department	Cost
Strategic Direction 8 — Build community awarenes	s and encourage participa	tion in urban greening	
8.1 Develop a community engagement strategy for urban greening that promotes benefits of trees on Council website and through community and school events.	Policy position		\$100,000
<b>8.2</b> Prepare a comprehensive suite of public facing tree information 'pages' for Council's website. These should include information on tree removals as well as positive 'greening' messages.	Web pages prepared internally or outsourced. Content to be based on Tree Management Framework.		Internal graphic design staff
<b>8.3</b> Prepare printed educational materials that can be disseminated in community centres and other community institutions and events.	Graphics to be prepared internally or outsourced. Content to be based on Tree Management Framework.		Internal graphic design staff and community liaison officers
8.4 Provide the community and design professionals with tools to evaluate the quality of urban greening and differentiate between the benefits of say a large shade tree compared to an area of lawn.	Developed in association with materials for Action 8.2		included above
<b>8.5</b> Encourage participation in urban greening, bush care, and street tree planting activities.			\$20,000 annual allowance
8.6 Notify community about tree planting events.	Notices to be provided on Council website and newsletters.		\$10,000 annual allowance
<b>8.7</b> Establish a community nursery for growing and distributing locally suitable tree species.	Could be undertaken as a special funded project		\$250,000 setup then \$150,000 annually
<b>8.8</b> Undertake annual greening events such as National Tree Day, community planting days, free tree giveaways.			\$20,000
Strategic Direction 9 — Manage impact of development on trees			
Actions 9.1 to 9.6 - Part of normal Council functions and existing budgets -			
Strategic Direction 10 — Review planning policy and development controls			
Actions 10.1-10.9 - Part of normal Council functions and existing budgets			



### APPENDICES STAKEHOLDER AND COMMUNITY CONSULTATION

### Introduction

A community and stakeholder engagement and consultation plan was prepared with key intents to:

- Provide all stakeholders with information on tree issues in the Liverpool LGA and to assist them in understanding the opportunities and solutions.
- Offer those who will be affected by the outcomes, a chance to voice their opinions;
- Enable the project team to identify the key stakeholders and understand the relationship they have with the project;
- Bring the relevant people together to pool knowledge, experience and expertise to co-create solutions; and
- Listen to and acknowledge concerns and aspirations and provide feedback on how public input influenced the outcomes.

### **Internal Stakeholders**

The plan identified internal I stakeholders as follows:

- Mayor and Councillors
- Executive Leadership Team
- Liverpool Planning & Infrastructure Governance Committee
- Community & Lifestyles
- Chief Executive Officer
- Corporate Support
- City Futures
- Customer & Business Performance
- Operations
- Planning & Compliance

### **External Stakeholders**

- NSW Department of Planning and Environment
- NSW Department of Health (South Western Sydney Local Health District)
- Transport for NSW
- Heritage NSW
- Local Residents and Property Owners
- Local Businesses

### Methodology for Engagement

Internal briefings and consultation will follow Council's standard processes (to be provided by Council). NSW Government Departments and Agencies were/will be consulted through invitation to comment on the draft documents.

Community engagement has been undertaken by both passive and active methods. Information sharing on the draft Tree Management Strategy and Tree Management Technical Guidelines has been through the following:

- Council's website
- Advertisement in local newspapers
- Newsletter to letterboxes
- e-newsletter to subscribers
- Community meetings

Consultation has been by way of exhibition of the suite of documents comprising the Tree Framework: Policy, Strategy and Guidelines, for a period of 4 weeks, accompanied by invitation for feedback from individuals and communities, including business groups.

In order to convey the key ideas of the draft Tree Policy and supporting documents to parts of the community from culturally and linguistically diverse backgrounds, the executive summary was translated into the 10 most common community languages of the LGA and provided as part of the exhibition materials. Additionally, the Gandangara, Deerubin and Thrawal Local Aboriginal Land Councils were specifically invited to comment.

Once the Tree Policy, Tree Management Strategy and Tree Management Technical Guidelines are finalised and adopted, it is anticipated that in accordance with the actions outlined in this report a Community Engagement Strategy, specifically for urban greening will be developed to promote benefits of trees and identify ways the community can get involved.



### Appendices Stakeholder and Community Consultation

### Outcomes

The entirety of the feedback will be/has been considered in the finalisation of the Tree Management Framework.

Formal submissions from the Community and other stakeholders were collated and reviewed. Each emerging theme was considered by the project team. All/ key submissions are detailed in the table below, including how Council has responded and the way the feedback has influence the outcomes.

Other informal feedback, provided through conversations with the Mayor, Councillors and Council staff and through platforms such as social media, was noted in summary and also included in the table below.

<Add table, following close of public exhibition period>

### APPENDICES BENCHMARKING AND DOCUMENTS REVIEWED

Benchmarking of best practice in tree management was undertaken by review of a range of tree and urban forest strategy and management documents, from various Councils particularly in NSW, ACT and Victoria. The review focused on examples from the Sydney Metropolitan area demonstrating best practice strategies and built examples, for the increase and improvement of tree canopy cover in urban areas.

### **Benchmark Documents**

- City of Sydney, Greening Sydney Strategy, 2023
- City of Sydney, Street Tree Master Plan, 2022
- City of Sydney, Street Tree Technical Guidelines
- City of Sydney, Development Control Plan Section 3.5.3 Tree Management, 2012
- City of Melbourne Urban Forest Strategy 2012-2032
- North Sydney Council Urban Forest Strategy, 2018
- North Sydney Council Development Control Plan Section 16 Tree and Vegetation Management, 2013
- ACT Government Urban Forest Strategy 2021-2045
- Canberra's Living Infrastructure Plan: Cooling the City
- City of Ryde (Draft) Urban Forest Strategy, 2022
- City of Ryde Tree Management Technical Manual, 2016
- Newcastle Urban Forest Background Paper 2007
- Ku-ring-gai Council Urban Forest Strategy, 2022
- Ku-ring-gai Council Development Control Plan Part 13 Tree and Vegetation Preservation, 2022
- Wingecarribee Shire Council Street Tree Implementation
   Plan 2016
- Climate Ready Street tree trials A best practice guide
- Western Sydney Planning Partnership, Street Design Guidelines, 2020
- WSROC Urban Heat Planning Toolkit (2021)
- Low Carbon Living CRC Guide to Urban Cooling Strategies (July 2017)
- Clean Air and Urban Landscapes Hub Cities for People and Nature (2020)

### Policy Context - Liverpool City Council

- LCC Community Strategic Plan 2022-2032
- LCC Connected Liverpool 2040
- LCC Our Home, Liverpool 2027 (Community Strategic Plan Update Developed in 2017)
- LCC Local Environmental Plan 2008
- LCC Development Control Plan 2008
- LCC City Centre Public Domain Master Plan 2020
- LCC Recreation, Open Space and Sports Strategy
- 2018-2028
- LCC Climate Change Policy (Draft)
- LCC Climate Action Plan 2021
- LCC Liverpool Bike Plan 2018

### Policy Context – State and Regional

- Western City District Plan Our Greater Sydney 2056 (updated 2018)
- Western Sydney City Deal Smart Cities Plan
- A Metropolis of Three Cities Greater Sydney Regional Plan
- NSW Government Architects Office, Greener Places
   (2020)
- NSW Government Architects Office -The Green Gridcreating Sydney's open space network
- NSW Department of Planning, Industry and Environment, NSW Public Spaces Charter (October 2022)
- Committee for Sydney Nature Positive Sydney Valuing Sydney's Living Infrastructure (February 2023)



# APPENDICES

# APPENDICESSUMMARY OF NATURAL SOILS AND VEGETATION

Table 15 - Summary Table of Major Soil Landscape Associations and Natural Vegetation of the City of Liverpool			
Soil Landscape	Code	Location/ Suburbs	Vegetation
Blacktown	bt	Predominant soil landscape throughout the Liverpool LGA Found in Cabramatta; Prestons	<ul> <li>Eucalyptus tereticornis (Forest Red Gum)</li> <li>E. maculata (Spotted Gum)</li> <li>E. globoidea (White Stringybark)</li> <li>E. fibrosa (Broadleaved Ironbark)</li> <li>E. longifolia (Woollybutt)</li> </ul>
Luddenham	lu	Associated with higher ground of the LGA Found in Denham Court; Cecil Park	<ul> <li>E. maculata (Spotted Gum)</li> <li>E. moluccana (Grey Box)</li> <li>Allocasuarina torulosa (Forest Oak)</li> <li>Acacia implexa (Hickory Wattle)</li> <li>Lesser occurrences of: <ul> <li>E. fibrosa (Broadleaved Ironbark)</li> <li>E. crebra (Narrow-leaved Ironbark)</li> </ul> </li> </ul>
South Creek	sc	Around waterways: South Creek, Kemps Creek and tributaries Found at Prestons; Hoxton Park	Angophora subvelutina (Broad-leafed Apple)     Eucalyptus amplifolia (Cabbage Gum)     Casuarina glauca (Swamp Oak)     On elevated banks, tall shrubland includes:     Melaleuca spp (Paperbark)     Leptospermum spp (Tea Tree)
Berkshire Park	р	Around waterways: Georges River and tributaries Found at Chipping Norton; Holsworthy	<ul> <li>Eucalyptus fibrosa (Broad-leaved Ironbark)</li> <li>Angophora bakeri (Narrow-leaved Apple)</li> <li>E. sclerophylla (Scribbly Gum)</li> <li>Melaleuca decora (White Feather Honey Myrtle)</li> <li>M. nodosa (Prickly leaved Paperbark</li> </ul>
Richmond	ri	Around waterways Found at Crana; Wallacia	<ul> <li>Toona australis (Australian Red Cedar)</li> <li>Ceratopetalum apetalum (Coachwood)</li> <li>Melaleuca spp. (Paperbarks)</li> <li>Regrowth is dominated by:         <ul> <li>Acacia spp (Wattles)</li> <li>Eucalyptus piperita (Sydney Peppermint)</li> </ul> </li> </ul>

Soil Landscape	Code	Location/ Suburbs
Faulconbridge	fb	Associated with Hawkesbury sandstone of the Blue Mountains plateau. Little Mountain
Picton	pn	Small patches within Western Sydney Parklands
Hawkesbury	ha	Holsworthy site
Gymea	gy	Holsworthy site
Disturbed	xx	Associated with highly urbanised areas; CBD



Appendices Summary of Natural Soils and Vegetation



## 6.5 APPENDICES REFERENCES AND LINKS

### Websites and document links

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City of Sydney – Greening Sydney Strategy 2023 https://www.cityofsydney.nsw.gov.au/strategies-action-plans/greening-sydney-strategy

Liverpool Community Strategic Plan 2022-2023 https://www.liverpool.nsw.gov.au/\_\_data/assets/pdf\_file/0005/216968/Community-Strategic-Plan-2022-2032.pdf

NSW Biodiversity Conservation Act 2016 https://legislation.nsw.gov.au/view/html/inforce/current/act-2016-063

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## LIVERPOOL CITY COUNCIL

## TREE MANAGEMENT TECHNICAL GUIDELINES

[INTERNAL DRAFT] 10 MARCH 2024

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LIVERPOOL **GOV** CITY COUNCIL **GOD** 

### **Document Control**

Date	Revision Number	Revision Details	Issued	Approved
31 August 2023	P1	Internal Draft for Review	RWS	RWS
10 March 2024	P2	Internal Draft for Review	RWS	RWS

## For further information

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Front Cover Image: View looking west along Charlton Drive, Chipping Norton, Liverpool NSW. (Source: Arterra)

### EXECUTIVE **SUMMARY**

Liverpool City Council recognises that trees are an important part of our natural and cultural landscape. We are committed to promoting and protecting these important assets. This Tree Management Strategy is a vital part of our tree management commitment. It is a step towards maintaining and managing our trees in a professional, consistent and appropriate way.

Liverpool has a population of over 230,000 people, covers some 305 square kilometres and stretches some 33 kilometres from Georges River and Chipping Norton in the east to the Nepean River and Silverdale in the west. Over 40% of our residents are born overseas. We have over 500 open space reserves and land uses that range from native bushland through to high and low density residential, agriculture, and world class recreation, entertainment and tourism facilities.

We are part of South West Sydney's growth corridor, home to Western Sydney International Airport (Nancy Bird Walton) and the extensive Holsworthy Army Barracks. Liverpool City Centre is the main hub within this large and diverse area.

Trees are an important part of Liverpool. The trees tell the natural and cultural history of our area, reflecting the changes in land use and changes in cultural practices that have helped shape the landscape of the Cumberland Plains and the wider tree population. It is not simply the age, species or size of the trees that makes them important, it is their links to nature, the past, and their relationship with the story of the people and the changing landscapes of Western Sydney.

Council is mindful that the significant green infrastructure of our area, which include some extensive areas of remnant native trees, are some of the most defining and precious elements of the landscape. We must continue to expand, protect, manage and replace our trees in order to pass on a legacy for the enjoyment and benefit of present and future generations.



Image: St Andrews Park, Casual, Liverpool NSW. (Source : Arterra)

"Rich in nature, rich in opportunity, creating community; our place to share and grow."

## MESSAGE FROM

Trees are a vital part of Liverpool City Council's natural and cultural landscape. Council are committed to promoting and protecting these important assets. The Tree Management Strategy is a vital part of our framework and explaining our tree management and urban canopy cover commitment. It is a step towards maintaining and managing our trees in a professional, consistent and appropriate way. Trees provide a very broad range of social, economic and environmental benefits, and help us adapt and become a more resilient community, as we face a changing and warming climate.

Trees and other green infrastructure are some of the most defining and precious elements of our landscape. Council must continue to expand, protect, manage and replace our trees in order to pass on a legacy for the enjoyment and benefit of present and future generations. Council must also reasonably manage our liabilities and foreseeable risks associated with trees.

The Tree Management Strategy establishes the context and importance of trees within the Liverpool City Council area. It outlines their benefits and the relationship to other Council and government policies. The Tree Management Strategy has been designed to assist the Council to proactively manage both public and private urban trees. It is not designed to deal with bushland or natural area trees.

The Strategy analyses the numerous factors, as well other Government policies, that influence tree management and the future planting of trees throughout our community. The Strategy then establishes the goals that Liverpool is setting with regard to Council's tree resources and the strategic directions and then more specific actions that are required to achieve these goals over the next decade and beyond.

## MESSAGE FROM THE CEO



Trees are a vital part of Liverpool City Council's natural and cultural landscape. Council are committed to promoting and protecting these important assets. The Tree Management Strategy is a vital part of our framework and explaining our tree management and urban canopy cover commitment. It is a step towards maintaining and managing our trees in a professional, consistent and appropriate way. Trees provide a very broad range of social, economic and environmental benefits, and help us adapt and become a more resilient community, as we face a changing and warming climate.

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### Acknowledgment of Country

We would like to acknowledge the Cabrogal Clan of the Darug Nation who are the traditional custodians of the land that now reside within Liverpool City Council's boundaries. We acknowledge that this land was also accessed by peoples of the Dhurawal and Darug Nations.

Background Image: Indigenous artwork in Liverpool City Library forecourt, Liverpool NSW. (Source: Liverpool City Council)

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This section of the Guidelines establishes the context and importance of trees within the Liverpool City Council area. It outlines their benefits, why we need to manage them as valuable assets and the general context of this document with regard to other relevant Council and government policies.







## INTRODUCTION





### 1.1 Purpose of the Guidelines

The purpose of the Technical Guidelines is to provide documented and standardised processes that ensure consistency in our ongoing protection, management and maintenance of all urban trees within Liverpool City Council Local Government Area (Liverpool LGA).

Trees are one of Council's most significant assets. This document, together with our overarching Tree Policy and Tree Management Strategy, will ensure that we:

- Recognise that our existing trees are important natural assets that create many benefits.
- Establish our commitment and future strategic directions for the expansion, planting, protection, management and ongoing maintenance of our tree resource.
- Document our normal tree management and maintenance practices based on best industry practice.
- Provide a framework for consistent decision making, documentation and standardise our processes and policies.
- Recognise that some trees can have especially important natural heritage or cultural heritage significance that warrant enhanced protection and management.

When we care for our lands, and care about something no matter how small, it often contributes to the health of the whole. We need to acknowledge that we are all just a small part of something much bigger. We may plant the seeds, others will water and tend to those young seedlings, so that eventually others may stand under a tree and benefit from its shade and beauty.

When we plant trees and take responsibility for tending them while they grow, we contribute to the health of the wider environment by providing shelter, shade, food or habitat for animals, insects, birds, and ourselves. If each of us works to ensure the success of one plant, one tree, one animal, one small part of the landscape, then the 'whole' can flourish.



Figure 1: Trees are an extremely valuable part of our urban environments. This photo illustrates a wonderfully shaded walkway in Dunumbral Park, Cecil Hills, making Liverpool a more liveable and enjoyable place to reside, work and play. (Source:Arterra)

ITEM 03



### Introduction Purpose and Scope of the Guidelines

#### Scope of the Guidelines 1.2

The scope of this Guideline covers all trees under the direct management and control of Liverpool City Council. It also provides overarching guidance and direction for the management of trees that are privately owned or managed within the City, to the extent that it can apply.

This document is not intended to cover or inform activities such as native bushland regeneration or bushland management. Nor is it intended to directly control tree management practices for areas under the control of utilities providers, or other statutory or government bodies.

Tree management in these other areas will primarily be the responsibility of the relevant land manager, however, the principles contained within this document shall still be considered the basic standard and framework for tree management activities.

There are entire text books written about tree management. It is unrealistic for this guide to cover all elements and potential eventualities that surround tree management in a complex urban setting. It is designed to simply and succinctly outline Council's key principles, activities and requirements within our normally expected tree management and maintenance regime. It is also designed to provide guidance and education regarding the myriad of activities that are required to maintain these complex and living assets.

If a tree is well planned for, well selected, well planted and well established in its early years, in theory, it should require only minimal ongoing interventions. Every tree however, will have a finite lifespan and at some point may need to be managed or removed.

Obviously not every tree within the Liverpool LGA has had the benefit of excellent planning, selection and planting methods. Therefore, we also need to manage trees that exist within our area that may not be well positioned or the most appropriate species. We must always remind ourselves that trees are living things and sometimes factors well outside of anyone's control may also impact upon trees and require intervention.



Figure 2: Trees are an extremely valuable part of our urban environments. This photo illustrates a Smooth-bark Apple (Angophora costata) growing in Horningsea Park, making a valuable contribution to the streetscape, shade and canopy cover. (Source:Arterra)

INTRODUCTION





### Introduction Context and Framework



Figure 3: Liverpool urban forest has very diverse range of trees and conditions. Liverpool covers a very large area and has many differing types of land uses. At present we are also blessed with some large areas of bushland and native vegetation. (Source: Liverpool City Council)

### 1.3 Context and Framework

These Guidelines form a critical part of the Liverpool City Council Tree Management documents that provide the necessary tools to effectively manage trees in our area. The primary documents comprise Council's:

- Tree Policy
- Tree Management Strategy
- Tree Management Technical Guidelines

The Liverpool City Council Tree Management Guidelines have been considered in relation to many other existing and draft Council documents, as well as other government policies that will influence the future directions and outcomes of tree management and development in our area. This has included documents such as:

- Liverpool City Council Community Strategic Plan
   2022-2032
- Liverpool City Council Our Home, Liverpool 2027 (Community Strategic Plan Update Developed in 2017)
- Liverpool City Council Local Environmental Plan 2008
- Liverpool City Council Development Control Plan 2008
- Liverpool City Centre Public Domain Master Plan 2020
- Liverpool City Council Recreation, Open Space and Sports Strategy 2018-2028
- Liverpool City Council Liverpool's Biodiversity 2019
- Liverpool City Council Liverpool Bike Plan 2018
- Western City District Plan Our Greater Sydney 2056 (updated 2018)
- Western Sydney City Deal Smart Cities Plan
- A Metropolis of Three Cities Greater Sydney Regional Plan
- Clean Air and Urban Landscapes Hub Cities for People and Nature (2020)
- NSW Government Architects Office –(Draft) Greener Places (Oct 2017)
- NSW Government Architects Office -The Green Gridcreating Sydney's open space network
- Low Carbon Living CRC Guide to Urban Cooling Strategies (July 2017)
- National Green Infrastructure Network-Urban Ecology : Theory Policy and Practice in NSW (May 2017)
- The Nature Conservancy Washington Outside our Doors (2016)
- The Nature Conservancy Washington Planting Healthy Air (2016)
- NSW Department of Planning, Industry and Environment, NSW Public Spaces Charter (October 2022)
- Committee for Sydney Nature Positive Sydney Valuing Sydney's Living Infrastructure (February 2023)
- WSROC Urban Heat Planning Toolkit (2021)

### Introduction Context and Framework



Figure 4: Liverpool urban forest has very diverse range of trees and conditions from our CBD, parklands, low density residential development through to some extensive industrial and warehouse areas. (Source: Liverpool City Council)

Many of these documents have very compatible objectives and complement this Guideline. Likewise the implementation of many of the objectives and strategies contained in the Tree Management Strategy and this Guideline will enhance the realisation of these other policies, particularly by:

- Increasing planting opportunities within the City;
- Increasing the canopy coverage of the City;
- Reinforcing the primary green and habitat corridors within the City;
- Increasing and promoting the use of native tree species.

This document is broken into three main sections which focus on the most important tree management issues, being:

- Protection and preservation of our existing trees.
  New tree planting, their selection and their establishment.
- Tree risk management, routine maintenance and tree removals.

This document provides the framework for tree management to be applied consistently to our 'typical' operational requirements. The vast majority of situations will be broadly covered, however, should the specific circumstances of a particular tree, design project, capital works project or event not be adequately addressed, it remains the responsibility of the relevant project leader (design, operations or event) to seek adequate clarification before any work is undertaken in the vicinity of trees.



Figure 5: Trees and shade are more than just beautiful things. It is now recognised that they are vital for economic outcomes, social and environmental benefits as well as our health and well-being (Source: Arterra)



### Introduction Tree Management Objectives

### 1.4 Tree Management Objectives

The following tree management objectives have been formulated and are outlined in detail in our Tree Policy and Tree Management Strategy. These objectives are specifically aimed at trees located in actively used parks, streets and other urban settings. They do not specifically relate to natural bushland or agricultural areas. Trees in these areas are more appropriately managed under biodiversity and bushland provisions in the relevant legislation.



Figure 6: Liverpool has a wide diversity of trees to manage from magnificent endemic trees like this Grey Box (*Eucalyptus molucanna*) through to much smaller and non-native urban trees. (Source: Arterra)

The primary tree management objectives outlined by this Guideline are to:

- Proactively and properly protect and maintain our current tree assets.
- Conserve and enhance the historical, natural and cultural values of Liverpool.
- Ensure new trees are installed with the proper planning, selection, best-practice planting and establishment methods.
- Manage and maintain our trees, within intensively used areas, so that tree related risks are maintained at acceptable levels.
- Develop and maintain accurate records of our trees and canopy coverage to properly inform future management decisions and the future planning of all tree related resources.
- Educate and inform all staff, contractors, event organisers and the general community about the value of the tree resource and how it should be enhanced, maintained and protected.
- Selectively and appropriately remove existing trees that are inappropriately positioned or that are negatively impacting on natural, cultural, heritage, or scenic qualities of our area.
- Recognise that our existing remnant, and newly planted trees, can greatly enhance the biodiversity and wildlife habitats within our area and wider Sydney.



Figure 7: Trees should be seen as an integral and important part of all developments and adequately catered for from the start of the design process. (Source: Arterra)





Figure 8: Trees have numerous social, economic, environmental and human well-being benefits (Source: Arterra)

### 1.5 Tree Benefits

Trees are generally considered valuable by most people and can be important heritage and natural assets. Trees provide many social, economic and environmental benefits. They provide links to our natural and cultural heritage, beautify, soften and define outdoor 'rooms', provide wildlife habitat, provide shade to our play areas and other passive recreation spaces and play a significant role in determining the overall character of our City.

Some examples of the numerous direct and indirect benefits of trees and urban greening include:

- Reducing the urban heat island effect and moderation of other weather extremes and winds.
- Providing cooling and shading to pedestrians and buildings.
- Lowering energy use (due to the above).
- Increasing longevity of pavements and road surfaces due to shading.
- Shading of parked cars and reduction in hydrocarbon emissions.
- Storage of carbon dioxide.
- Interception and storage of rainwater and stormwater via leaves and roots.
- Filtering of particulate matter and polluting gases.
- Ameliorating wind.
- Production of atmospheric oxygen and uptake of carbon dioxide.
- Provision of habitat for native fauna, birds and insects.
- General human health, calming and wellbeing.

On this last point, Australia has one of the highest urbanised populations in the world, with around 90 per cent already living in cities and large towns and it's increasing. Higher density living comes with many challenges and impacts on our health and well-being. There is no greater good that can be done for promoting our health than the protection and enhancement of greenery on which all humans depend (Coutts, C. and Hahn M. 2015). This is especially for mental health. As outlined by the World Health Organisation, "good mental health enables people to realise their potential, cope with the normal stresses of life, work productively and contribute to their communities". Simply being in, nearby, or with a view of green spaces may help build mental health capacity, contribute to our ability to restore depleted cognitive capacities, enhance recovery from stress and increase our optimism. We also prefer to seek out greenery that has a higher density of tree canopy cover rather than simple spaces such as large grassed areas. (Astell-Burt, T., 2019)

The World Health Organisation calls 'stress' the health epidemic of the twenty first century. Mental ill health and suicide are costing Australia up to \$180 billion a year (the Productivity Commission found in October 2019). Anxiety and depression are estimated to cost the European Union €170 billion a year and in the USA over \$210 billion.

Finding a way to manage this is critical to our health and wellbeing and trees and other greenery can help immensely.



### Introduction **Tree Benefits**

A 2019 Australian longitudinal study titled 'Association of Urban Green Space with Mental Health and General Health Among Adults in Australia' by Prof Astell-Burt and Dr Feng found that urban communities with an adequate amount of tree cover - not just grass and green space - were psychologically healthier than those that didn't.

In neighbourhoods with a tree canopy of 30 per cent or more, adults had 31 per cent lower odds of developing psychological distress, and 33 per cent lower odds of rating their general health as fair or poor over six years. Urban green spaces with open grass, rather than a tree canopy, did not deliver the same benefits. This research, which focused on Sydney, Newcastle and Wollongong, helps provide a solid target to work towards to provide the community with tangible psychologically health outcomes.

Importantly, there are many other health benefits associated with urban greenery, such as reductions in cardiovascular disease, lower skin cancer rates, and 22 per cent lower odds of insufficient sleep.

Urban greening also has massive benefits for our urban areas connectivity and walkability. Walking and cycling are important benchmarks for a liveable city. High levels of walking mean a city is safe, vibrant and easily accessible by everyone.

Another pressing challenge is urban air quality. In most cities, the most damaging air pollutant is particulate matter. Fine particulate matter (less than 2.5 microns in diameter) can be deeply inhaled into our lungs and is estimated to cause 3.2 million deaths per year primarily from strokes and heart disease. It also contributes to chronic and acute respiratory diseases, including asthma. One study forecasts that by 2050, fine particulate matter could kill 6.2 million people per year world-wide. (The Nature Conservancy, 2016).

Trees and urban greening therefore play an important role in making our air healthier, too. Dozens of studies now show that the leaves of trees filter out particulate matter from the atmosphere, along with absorbing many other air pollutants. Air pollution has been found to be often worsened by excessive heat, which in turn, causes increased chemical reactions to occur with other volatile organic compounds. Ground level ozone concentrations are found to radically increase as ambient temperatures increase.

Finally, quality shade provision can also reduce exposure to damaging ultra violet light (UV) by up to 75 per cent. This can be provided by either built 'shade-giving' structures or trees, but trees also produce numerous other benefits.



Figure 9: We naturally prefer to seek out quality green space that has a higher density of tree canopy cover rather than simple spaces such as large grassed areas that provide little diversity or complexity. Areas with more than 30% tree canopy cover have substantial benefits to our health and well-being as well as addressing urban heat. (Source: Arterra)



Introduction Tree Costs and Liabilities



Figure 10: Although trees have substantial benefits, trees that are poorly planned or the wrong size and shape for the spaces provided can actually detract from our environments and ultimately represent a cost and liability to Council and the community generally. (Source: Arterra)



Figure 11: Insufficient preparation of planting areas and lack of the provision of soil volume for adequate tree growth is one of the leading causes of longer term costs and liabilities for the community and should be better addressed as part of Council's Tree Management Strategy and guidelines moving forward to help minimise longer term issues and liabilities. (Source: Arterra)

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### Introduction Tree Costs and Liabilities

#### 1.6 Tree Costs and Liabilities

While trees play a vital role in our urban landscapes, we also recognise that trees of the wrong type, in poor condition or growing in the wrong place, can create problems and risks that may not be considered tolerable. We have certain obligations with respect to the protection of trees, and also responsibilities to manage tree risks and other liabilities.

Tree management in Liverpool requires a delicate balance between all the various tree related liabilities (financial and otherwise) and the many benefits that trees provide. Our aim is to provide the best possible outcomes in terms of the preservation of heritage, environmental stewardship and the provision of safe, functional, accessible, sustainable and aesthetically pleasing public streets and recreation facilities.

We also need to consider that new trees are very costly to purchase, install and maintain, typically taking many years to grow large enough to provide all the benefits associated with a large, healthy, well established tree.

Tree planting requires very careful planning, and implementation to realise the greatest ongoing benefits. Poor planning, planting in the wrong position, poor planting area preparation, poor quality nursery stock and inappropriate establishment maintenance can all give rise to substandard trees. This can result in increased costs during ongoing maintenance or premature tree failure and replacement. All of this can result in wasted time, money and other resources.

Some of the issues we must consider when managing our trees or planning for new tree planting include:

- Are the species and location appropriate in the environmental and cultural context?
- Are the trees causing, or likely to cause, significant impacts to surrounding infrastructure? Appropriate physical offsets should be provided to minimise likely tree related impacts to buildings, shelters and other assets such as play equipment, lighting, pathways, roads, drainage, signage, and fences etc.
- Consideration of amenity, health and safety. Is the species appropriate to the location? Does it unacceptably contribute to slip, trip, or fall hazards? Does it unreasonably contribute to known irritant or allergen issues? Does it provide appropriate sight lines for passive surveillance or create unwanted screening that may facilitate or hide antisocial or undesirable behaviour?
- Is the species a recognised weed or a potentially invasive species? Is the tree appropriate to the natural or heritage context of the location? Should it be retained or removed for environmental reasons? Heritage contexts and environmental issues sometimes require a very delicate balance.



Figure 12: Any tree has the potential to fail. They are living things and neve stronger than the intrinsic properties of the wood that make them up structurally. Most failures are related to extreme weather. Some tree defects can be observed and suitable actions taken to limit risks from tree failures to acceptable levels using a recognised system of assessment. The removal of all risk, however is unreasonable as we all accept some level of risk when we go about our daily lives, in return for the benefits and enjoyment provided. The reality is that trees can and may fail but seldom is anyone injured. (Source: Árterra)



This section of the Guidelines establishes the requirements and procedures Council will apply to help retain and protect our existing trees.





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## 2.0

TREE PRESERVATION

### 2.1 Overview

Tree preservation, protection and management are very critical components within the overall management of Liverpool's natural and urban environment:

- To ensure the health and well being of our community
- To mitigate urban heat and adapt to a changing climate
- To ensure the protection and preservation of our existing and substantial natural and cultural heritage.
- To protect and enhance our natural ecosystems.
- To protect and enhance Liverpool's aesthetic appeal.

## 2.2 General Definitions & Guidance What is a tree?

All trees within the Liverpool Local Government Area are important, and need to be considered, as they contribute directly to our natural, aesthetic or heritage assets.

The intent of this document, is to specifically address what is considered a 'tree', as defined by our Tree Policy. A 'tree' for the purposes of our documents is typically defined as: A woody perennial plant greater than 5m tall and with a trunk diameter of at least 140mm when measured at a height of 1.4m above the ground or a canopy spread greater than 4m.

Clearing of vegetation, as it relates to urban trees, is covered under numerous items of legislation as well as Councils' own requirements. Figure 14 provides an overview of tree management and vegetation controls and the processes that may usually be involved in applications to prune or remove a tree. Other plants and vegetation shall typically be dealt with under other general landscape controls or bushland management provisions. We note that all vegetation on public land is protected regardless of size or species.



Figure 13: Council wish to manage all our tree assets in accordance with best practice. This includes a large variety of trees and settings, from our urban trees right through to roadside and other trees in the more rural areas of our LGA. (Source: Arterra)



### Tree Preservation General Definitions and Guidance



Figure 14: Clearing and Approval Guidance - Diagram illustrating the typical controls and process for trees within our LGA. (Source: Arterra)



### Tree Preservation General Definitions and Guidance

### Endemic, native, or exotic trees?

Species diversity is a critical component in managing a sustainable urban forest. The wider the range of botanical species and families, the lower the likelihood of canopy cover degradation and catastrophic losses in the event of unexpected pest and disease outbreak, or from critical impacts such as a changing, warming climate or extended droughts. Increased diversity also helps to support more diversity of fauna, by providing a variety of food and habitat throughout different times of the year.

While we will often favour the planting of species naturally occurring within our local area, it is important to recognise the vital role that trees from the wider Sydney basin, east coast Australia, and even further afield, can play, in providing a broader range of forms and ability to thrive in a broader range of conditions.

There is often much debate about the use of locally indigenous (often called endemic) tree species. Whilst locally indigenous species may be the most appropriate for some local environmental conditions and projects, the growing conditions within many of our more intensive urban environment are often very different from where such trees would naturally grow. The soils and hydrology are often radically altered, they are often surrounded by pavements and the trees need to work within urban conditions and acceptable ongoing maintenance regimes.

While we acknowledge that the natural vegetation assemblage in this part of Sydney would have been primarily open forests, and grassy woodlands, many of the species that grew in such communities would not greatly contribute to our wider urban forest goals. They would not always relate well to the new built forms or the streets. Disturbed soil profiles, soil compaction, higher nutrient status, altered drainage patterns and paved surfaces are just a few of the problems with which our urban trees must contend, and many endemic trees are not well adapted to deal with such environments.

When addressing this issue, a more useful division may be to view species origin and suitability in three categories:

- locally indigenous (or endemic) natives;
- natives from other parts of wider Sydney or Australia; and
- exotic species from other areas of the world.

Local natives have the advantage of being climatically suited and live in some degree of equilibrium with natural pest organisms such as insects and fungi. Use of local natives promotes biodiversity and the creation of wildlife corridors, reinforces an 'Australian' sense of place, and some can be very drought resistant.

Natives from other cooler or wetter regions may be less climatically adapted and while they may enjoy freedom from some local pest organisms, if they become infested they



Figure 15: Not all trees are the same and many have specific characteristics that make them better for urban areas. Trees such as this Weeping Lilly Pilly (*Waterhousea floribunda*) provide many benefits and particularly good levels of shade and will continue to cool our air and transpire during heatwaves. (Source: Arterra)

may succumb faster and be less able to recover. Exotics may be almost completely free of our native pests and diseases but run the risk of being devastated if other pests are accidentally introduced.

With regard to NSW east-coast native species, and their suitability as urban and street trees, the species that are often best adapted are usually from drier rainforest and rainforest margins, particularly those species that come from littoral rainforests. Most of these trees are long lived, shade tolerant and importantly shade producing. These species often continue to transpire during prolonged heat-waves, which can provide important cooling effects through evapotranspiration. Some other species like many of our Eucalyptus species (Gum trees) tend to slow or shut down their metabolic processes during the heat of the day and therefore make only modest contributions to mitigating urban heat island effects during summer. They also often have sparser crowns, so are not as successful as other species in providing worthwhile shading to our pavements, buildings and parks.

Another set of highly successful urban tree species come from freshwater swamps and other areas that are poorly drained and aerated. Species from these environments are often highly resistant to root rot organisms and their root systems are well adapted to particularly adverse soil conditions.



### **Tree Preservation** General Definitions and Guidance

Many of our more familiar natives such as *Eucalyptus* trees are often from relatively open and much drier vegetation communities. These species may perform poorly in our highly urban areas. They are often more adapted to soils of very low nutrient status and with lower rainfalls where rot organisms are at a disadvantage. Consequently these species are often less tolerant to interference with their root systems, including compaction, waterlogging and construction damage.

Some native tree species can also display highly variable habits which makes it difficult to establish and maintain a more consistent tree avenue, or achieve necessary clearances to buildings and vehicles. They are also highly adapted to natural fire regimes or dryland conditions and as a consequence they may be pre-disposed to 'bolt' in growth for brief periods when post-fire soil nutrients are temporarily higher. As this increased growth pattern can often persist in unnaturally high nutrient, moisture, or fire-free environments the tree can become structurally weak, thin and elongated and their foliage and bark can become susceptible to attack by insects and other pests. Prominent examples of this phenomenon are our Wattles (Acacia sp.) and Tea Trees (Leptospermum sp.) and some inland Eucalyptus species.

An important advantage of using exotic trees within an inner urban context is that they include numerous and useful options of deciduous species, which provide greater sun access to the streets, and residences through the winter

months. Some native trees are deciduous but generally they loose their leaves in spring or early summer (an inheritance of their more monsoonal origins). The Red Cedar and White Cedar (Toona ciliata, Melia azedarach) are the closest native trees we have to being winter deciduous but both of these suffer from severe pest problems under urban conditions and are often unreliable performers.

Many exotic deciduous species have the advantage of hundreds of years of selective breeding, which ensures quality stock and consistent performance. They are normally pollution tolerant and more resilient to interference with their roots or damage during construction works. The canopy shapes and branch architecture of many such exotic trees are readily able to tolerate pruning and shaping that is required for urban infrastructure and street clearances.

In summary, both natives and exotics have their strengths and weaknesses for use as trees within Liverpool. Our strategy aims to plant the right tree for the right location, for the right reasons and to continually strike an appropriate balance between the many competing objectives when it comes to appropriate tree selection. For further information and guidance refer to Section 3.0 Tree Planting and Selection.



Figure 16: Although we favour endemic species, deciduous and exotic trees nave a very useful role to play in built up and urban areas to provide good shade in summer as well as providing sun in winter (Source:Arterra)



Figure 17: Many of our native and endemic species are not well suited to intensive urban areas and may not provide useful and worthwhile shade or greenery (Source:Arterra)


## Tree Preservation General Definitions and Guidance

### Tree care basics

Trees are dynamic living organisms. Trees can be very susceptible to damage, stress and declining rapidly if overly impacted by pests, disease, inappropriate pruning, mechanical damage or construction related impacts.

Trees take decades to grow and mature but can be injured and killed in a very short time frame. This is particularly due to the irreparable damage of the often shallow, extensive and unseen root systems. It is rarely possible to repair a stressed or damaged tree after the damage has occurred. Proper tree protection is the key to minimising construction related and other impacts. Severing of roots can also lead to potentially unsafe instability of a tree, as a structure.

As a living organism a tree remains alive by completing the following chemical reaction -  $% \left( {{{\left[ {{{C_{\rm{B}}}} \right]}_{\rm{cons}}}} \right)$ 

Carbon Dioxide and water in combination with chlorophyll and light is converted to Glucose and Oxygen

 $[CO^2 + H^2O + light = sugar (CH^2O [Glucose]) + O^2]$ 

This complex natural process ultimately leads to the plant cells 'respiring' and producing energy for survival; a natural requirement for all living cells. Anything that affects a plant's photosynthesis and then cellular respiration will inevitably affect the overall plant health. The limiting factors of photosynthesis and respiration will typically be the availability of oxygen, water and nutrients that make up the important chemical molecules and reactions.



Figure 19: This image shows an exposed and relatively typical root system for an urban tree. It illustrates that roots are generally surface oriented, in order to capture water and air. (Image Source: https://twitter.com/ Fingalcoco/status/1017711142167293952/photo/2)



Figure 18: Although we all see and appreciate the above the ground parts of a tree, the unseen and often extensive roots are equally vital for the heath, resilience and longevity of the tree. Contrary to popular belief, tree roots are also generally surface oriented, in order to capture water and air and they spread well past the drip line of the canopy. (Source : International Society of Arboriculture)



## **Tree Preservation** General Definitions and Guidance

Trees have five basic requirements to survive and successfully grow:

- oxygen (and particularly oxygen within the soil allowing tree roots to survive);
- water (a cellular necessity and primarily taken up by the tree roots);
- light and sufficient foliage (in order to photosynthesise and create the resources needed for cellular survival);
- soil (for physical anchorage and the supply of critical chemical nutrients); and
- physical space (both above and below ground to grow).

Importantly, a minimum of 15% soil oxygen is required for active root growth and nutrient uptake. Less than 10% available soil oxygen starts to restrict root extension and growth and a minimum of 3% soil oxygen is required to just maintain root existence. Less than this will result in root death (Harris 1999).

### **Relevant Australian Standards**

The following documents represent the key standards that are applicable to tree preservation and protection. Council shall defer to these standards, or any relevant update or revision of these.

- Standards Australia, 2007, AS 4373-2007 Pruning of amenity trees. Standards Australia, Sydney.
- Standards Australia, 2009, AS 4970-2009 Protection of Trees on Development Sites. Standards Australia, Sydney.
- Standards Australia, 2007, AS 4687-2007 Temporary fencing and hoardings. Standards Australia, Sydney.
- Standards Australia, 2018, AS4419-2018 Soils for landscaping and garden use. Standards Australia, Sydney.
- Standards Australia, 2012, AS4454-2012 Compost, soil conditioners and mulches. Standards Australia, Sydney.



## Tree Preservation Tree Protection and Preservation

### 2.3 Tree Protection and Preservation

This document provides the technical guidelines and specifications for tree protection and management to be applied consistently to our 'typical' operational requirements. The vast majority of situations will be broadly covered, however, should the specific circumstances of a particular tree, design project, capital works project or event not be adequately addressed, it remains the responsibility of the relevant tree owner, manager, project leader (design, operations or event) to seek adequate clarification before any work is undertaken in the vicinity of any 'tree'.

### **Protected Trees**

A permit or development consent is required to ringbark, cut down, top, lop, prune, remove, injure or wilfully destroy a tree that meets the Council's definition of a tree (Refer to Section 2.2 - what is a tree).

All trees on public land whether under Council's control, or that of another government authority, shall also be considered and treated as a Protected Tree, **regardless of size, age or species.** 

Exceptions to 'Protected Trees' include tree species that are listed as 'Exempt Species' in Table 2 or are identified as 'Priority Weeds' within the Liverpool LGA on the NSW Weed Wise website. These exemptions only apply to trees on private land. These exemptions do not apply to any Heritage listed trees or properties or Heritage Conservation Areas.

### **Pruning of Trees**

Pruning has a direct impact on the health, structure and viability of a tree. All pruning of live tissue results in a wound to the tree, which the tree has to then attempt to seal and compartmentalise. Incorrect pruning techniques can lead to increased risks of internal decay and disease within the tree, much the same as a wound in animals can lead to disease and infection.

Pruning of the canopy also has the consequence of removing valuable foliage, which in turn removes an essential source of energy production from the tree. The tree will then also spend considerable reserves of energy in trying to re-grow the losses of the foliage. Branches and trunks are also important transport and storage tissues within the tree.

Tree pruning is to be undertaken by suitably experienced, insured and qualified Arborist's only. Pruning work is to be in strict accordance with to AS4373-2007 Pruning of Amenity Trees. Refer to Council's Standard Tree Pruning Specifications that are included at Appendix 5.5.

Tree pruning, when required, shall typically aim to minimise the size and number of wounds resulting from the pruning. It should ensure that any remaining canopy is well balanced with appropriate weight and crown distribution. Personnel should use only clean, sharp pruning implements for all pruning work, ensuring that cuts are made without damage, tearing or bruising of the remaining vascular tissue. Do not paint or treat any of the resulting pruning wounds.

### Minor Works and Tree Pruning

Tree pruning or other tree works that are of very minor nature and part of normal tree maintenance in an urban area or pest and disease control may be accepted and not require formal approval form Council.

Works that may be permitted to trees on private land, or to trees located on public trees only where, and to the extent, it overhangs a private property boundary, without the need for a permit or a development consent are outlined below. This is as long as the pruning:

- Is to provides clearances that are consistent with the Tree Management Technical Guideline for tree clearance pruning in Section 4.6 (Figure 68), and where the branch size is less than the diameter sizes detailed in Table 1.
- Does not remove more than 5% of a trees canopy and does not damage or affect the health or structural stability of the tree;
- Involves the pruning of very minor roots with a diameter of less than 50mm (but not with 2.5m of the trunk) or any roots occurring within a stormwater drain or sewer service line regardless of distance from trunk.
- Removes branches within 0.5m of electrical service lines to private properties. This exemption applies to tree branches only, not to tree trunks.
- Removes deadwood being completely dead branches that are still attached to the tree(s)
- Is undertaken in accordance with the relevant Australian Standard for the Pruning of Amenity Trees, using a qualified Arborist (minimum Australian Qualification Framework (AQF) Level 2 in Arboriculture).

Table 1 - Minor Pruning - Permitted Sizes									
Location	Maximum Branch Size								
To provide clearance over a local street vehicle travel lane where the branch is lower than 4.5m	100mm								
To provide clearance over a local street parking lane or pedestrian pathway where the branch is lower than 2.5m	100mm								
Within 2m above any approved building, measured from the surface of the structural component, such as a wall or roof on the building's edge	50mm								
Within 0.5m of a domestic power or telecommunication service line	50mm								
Tree root (but not within 2.5m of the trunk).	50mm.								

Pruning outside these parameter will need to be approved via an application to Council to through a Development Application. 220 ITEM 03 Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management Technical Guidelines) Attachment 4 Draft LCC Tree Management Technical Guidelines - May 2024



## Tree Preservation Tree Protection and Preservation

### Weeds and Exempt Species

Weeds or other invasive species, may have been intentionally planted in the past, but are now species that are considered undesirable or inappropriate to our public domains. Although many weeds are often grasses, small herbs and shrubs, they may also include some tree species.

Weedy trees and invasive tree species are found throughout the Liverpool area, often growing along our creek banks and in native vegetation regeneration areas. In more limited numbers they may also exist as scattered trees throughout various streets and park landscapes.

These trees typically include Willow (*Salix spp*), Camphor Laurel (*Cinnamomum camphora*), African Olive (*Olea europea ssp cuspidata*), Chinese Hackberry (*Celtis sinensis*), White Poplar (*Populus alba*), Privet (*Ligustrum spp*), Acacia baileyana (Cootamundra Wattle) and Silky Oak (*Grevillea robusta*).

Where resources permit, Council will attempt to systematically control and remove self-sown weed trees or other invasive tree species, unless they are historically relevant to a particular location or context. Our focus will be to target areas where they have the greatest potential to adversely impact important native vegetation communities, bushland or waterways.

Council will try to target trees while they are still young and small, and while they are relatively inexpensive and easy to remove. Larger trees may only be removed when funds and other relevant circumstances allow.



Figure 21: Celtis sinensis (Chinese Hackberry). (Source: Arterra)



Figure 20: Celtis sinensis (Chinese Hackberry). (Source: Arterra)



Figure 22: Olea euroea subsp. cuspidtata (African Olive). (Source: Arterra)

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TREE PRESERVATION

## **Tree Preservation** Tree Protection and Preservation

Table 2 - Exempt Species List										
Exempt Species	Common Name									
Edible Fruit Trees (such as Citrus spp., Prunus spp., Persea spp., Malus spp., Diospyros spp., Cydonia spp. (only when <10m in height) (and not including Syzygium spp. or Acmena spp.)	Edible Fruit Trees such as Lemons, Orange, Plums, Peach, Nectarines, Apple, Persimmon, Quince, Avocado etc.									
Acacia baileyana	Cootamundra Wattle									
Acacia saligna	Western Australian Golden Wattle									
Ailanthus altissima	Tree of Heaven									
Cotoneaster glaucophyllus	Cotoneaster									
Celtis sinensis	Chinese Hackberry									
Celtis occidentalis	Hackberry									
Cinnamomum camphora	Camphor Laurel									
Cupressocyparis leylandii	Leighton Green Cypress									
Cupressus macrocarpa "Brunniana"	Golden Cypress									
Dovyalis caffra	Kei Apple									
Erythrina crista-galli	Cockscomb Coral Tree									
Erythrina x sykesii	Coral Tree									
Ficus elastica and hybrids	Rubber Trees									
Gleditsia triacanthos (not including recognised hybrids)	Honey Locust									
Grevillea robusta	Silky Oak									
Lagunaria petersonii	Norfolk Island Hibiscus									
Ligustrum lucidum	Large Leafed Privet									
Ligustrum sinensis	Small Leafed Privet									
Lycium ferocissimum	African Box Thorn									
Melia azedarach (only when <10m in height)	White Cedar									
Olea europea subsp. cuspidata (syn. Olea africana)	African Olive									
Opuntia spp.	Prickly Pear									
Parkinsonia aculeata	Parkinsonia									
Poplar spp.	Poplars									
Prosopis spp.	Mesquite									
Robinia pseudoacacia ( <b>not including recognised hybrids</b> )	Black Locust									
Salix spp.	Willows									
Schefflera actinophylla	Umbrella Tree									
Schefflera arboricola	Dwarf Umbrella Tree									
Syagrus romanzoffiana (syn. Cocos plumosa	Queen Palm / Cocos Palm									
Tamarix aphylla	Athel Pine									
Toxicodendron succedaneum	Rhus Tree									
Vachellia karroo	Karoo Acacia									
Vachellia nilotica	Prickly Acacia									



Figure 23: It is illegal to damage, kill or remove a tree without consent. Council will vigorously defend against any wilful and deliberate vanadalism and damage to our valuable tree population. (Source: Arterra)

### Tree Vandalism, Damage and Unauthorised Removals

In accordance with the Liverpool Development Control Plan and Tree Policy it is an offence to damage, prune or remove a privately owned tree or any Council managed tree. Council may initiate legal action against any person, either in the Local Court or Land and Environment Court, who fails to obtain consent prior to intentionally pruning, damaging or removing a tree. (Refer Section 2.2 and Figure 14 and Section 2.4 Penalties and Enforcement)

Residents are specifically advised not to attach items to any Council owned or managed tree for any unauthorised purposes. As examples, residents and trades people must not:

- attach signs, flags, bunting or banners to trees;
- place wires, ropes or lights within the canopy or branches of trees;
- erect tree houses or other structures within or around trees;
- attach swings or rope ladders etc.; or
- cut or otherwise damage roots or trunks at ground level to undertake fencing, walling, garden edging, new planting or gardens where this may severe tree roots.

If a property owner believes that a Council managed tree is causing damage to their property, essential utilities or other such services, they are advised to consult the relevant Tree Management Strategy sections for further guidance and advice before taking any actions that may injure or kill the tree.



## Tree Preservation Penalties and Enforcement

### 2.4 Penalties and Enforcement

Council takes unlawful or unauthorised removal, branch or root pruning or damage to trees very seriously. Council may pursue enforcement and penalties. Refer to Section 2.2 for guidance on when approval is required for tree work and how to go about applying for tree removal or pruning.

Council may pursue action against both individuals or companies that may be found to willingly or negligently breach requirements for:

- Unauthorised removal of trees on public or private property
- Unauthorised clearance of vegetation which may include trees and other protected native vegetation
- Wilful or negligent damage to trees which may include intentional damage, ringbarking, pruning or poisoning.

Council will enforce unauthorised or unlawful tree removal or damage in line with its Enforcement Policy 2022.

An unlawful activity means any activity or work that has been or is being carried out:

- Contrary to the terms or conditions of a development consent, construction certificate, approval, or licence;
- Contrary to an environmental planning instrument that regulates the activities or work that can be carried out on particular land;
- Without a required permit, development consent, approval, or licence;
- Contrary to a legislative provision regulating a particular activity or work; or
- In contravention of an Act, and constituting an offence.

Unlawful activities and illegal clearing of vegetation are generally identified through complaints that are received from concerned members of the public or through Council's own routine inspections that are carried out by authorised Council officers. The nature of the tree removal, or tree related damage, will be assessed by Council staff (or by appointed independent consultants). Council will then take into consideration the seriousness of the breach when considering further action.

### Council may:

- Issue penalty notices (PN), per infringement, in line
  with current relevant policy and legislation. This means
  a penalty notice which is used for offences prescribed
  by legislation whereby a fine is given by the Council.
  Council may issue a penalty infringement notice, per
  infringement. Where multiple trees are involved this
  may result in multiple infringement notices. The value of
  such fines is prescribed by NSW legislation. Fines may
  vary depending on whether the entity responsible for
  committing the offence is an individual or a company.
- Council also has the option of initiating a criminal prosecution and thereby seeking a pecuniary (monetary) penalty in either the Local Court or the NSW Land and Environment Court. Fines in the NSW Land and Environment Court may exceed \$1million for corporations.

Council will apply industry guidelines when determining the potential valuation of a damaged or removed tree, when determining court action or issuing Penalty Notices. Councils tree valuation procedures are outlined in Section 2.7 Tree Valuation and Compensation for Removal.

## Tree Preservation Tree Reports and Assessments

## 2.5 Tree Reports and Assessments

### **Arborist Reports and Qualifications**

Council will require a professional arborist report be submitted to support the following activities:

- an application to prune or remove a tree;
- an application to prune or remove a tree due to potential risks to life or property; or
- an application for any construction activity that may impact on a trees health or stability or otherwise require its removal.

Minor pruning in line with requirements outlined in Section 2.3 and Table 1 will not require approval or a report.

A professional **consulting arborist** provides tree management advice and prepares tree reports. A **practising arborist**, **utility arborist** or **tree worker** undertakes tree pruning and removal works. Council will only accept tree reports prepared by consulting arborists with a qualification equivalent to the Australian Qualifications Framework Level 5. (AQF5)

An arborist's report shall normally be reviewed and assessed by a Council officer who also holds this same level of qualification. Tree reports must be impartial and only contain opinions that can be substantiated.

Most consultant arborists are members of professional organisations that require ongoing professional development. This helps ensure they provide up-to-date, appropriate and professional advice.

Consultant arborists usually charge for written and verbal advice. The cost of a tree report depends greatly on the report type, scope and number of trees to be assessed. There are no standardised professional rates but most consultant arborists have similar hourly rates to that of engineers, architects and landscape architects. You should always agree on the consultancy fees and confirm this and the scope of work in writing before work starts.

### **General Arboricultural Assessment Reports**

An arboricultural assessment report assesses the overall condition of a tree and its growing environment and gives management recommendations. It usually forms part of an application for approval to remove or prune a tree on private property.

All reports should have the following as a minimum:

- **Title page**: with the site address, client, date, revision number, and name, contact details and qualification of the author.
- Introduction: outlining scope of the report and purpose

- **Methods**: methods used in the report, limitations and list of plans and documents reviewed as part of the report, and noting any revision or issue numbers and dates.
- **Site**: description of the site and any site/ environmental conditions which may impact the trees.
- **Tree data**: species, dimensions, health and structural condition assessment this must reflect the size and condition of the trees at the time the report is submitted to us.
- Discussion and recommendations: including interpretation of results and recommendations.
- **References**: resource material referenced within the report using the Harvard system.
- **Appendices**: supporting information, clear photographs of trees and identified defects, and plan showing tree locations.

The following more specialised reports may require additional and more specific information to be addressed.

### Tree risk assessment reports

A tree risk assessment report determines the level of risk posed by a tree over a specified time frame. The consultant arborist must utilise, and be qualified in the application of, a recognised tree risk assessment method such as QTRA, TRAQ or VALID.

If your consultant arborist finds a potential major, internal structural defect in your tree, they may recommend further internal diagnostic testing. The two most common testing devices are resistance drilling (Resistograph) and sonic tomography (Picus Tomograph). Test results from these assessments should be included in any risk assessment, if they are undertaken and relied upon for tree management recommendations.

### Root mapping assessments

A tree root mapping report may be requested if Council has concerns regarding the likely impacts of proposed development on tree roots, or a property owner is asserting that a tree is causing structural damage to significant structures, and seeking its removal or pruning of the roots. A root mapping assessment must include the minimum requirements of a General Arboricultural Assessment Report plus the following additional information .

- A scaled plan showing trench location in relation to the subject tree and relevant structures, and tree protection zone and structural root zone areas
- Trench information including orientation, length and depth (including impediments to achieving the required excavated depth), along with clear photos of the trench and roots.
- Root information: location, size and orientation of roots greater than 25mm in diameter.



## **Tree Preservation Tree Protection During Construction**

- Discussion and recommendations that evaluate the impacts of the proposed works on the tree, mitigation of impacts, and recommendations for alternative/tree sensitive design and tree protection methods.
- Appendices that include supporting information, clear photographs of trees and identified defects, and overall plan showing tree locations.

### Tree pruning reports and specifications

A tree pruning report may be requested if Council has concerns regarding the likely impacts of proposed pruning, or a property owner is seeking major pruning of a tree. A pruning report and specification must include the following.

- The reason for the pruning, including the pruning requirements and pruning class applied as defined by Australian Standard 4373 (2007) Pruning of Amenity Trees
- Branch information: branch size, location and percentage of crown to be removed.
- Photographs: annotated photos that clearly show the individual branches to be pruned.

#### **Tree Protection During** 2.6 Construction

A critical tree management outcome for existing trees on development sites is to maintain and protect the tree assets we currently have. Lack of coordination, or thought for trees, by different disciplines, consultants and contractors who organise or carry out work within our area can have significant impacts to the existing trees.

Council shall insist that all assessment and work on construction sites, that may impact trees, is undertaken in strict accordance with the steps and principles outlined within AS 4970-2009 Protection of Trees on Development Sites.

### Important Definitions

Appropriate protection of trees, particularly through the establishment of adequate Tree Protection Zones (or TPZ), is the key to minimising construction or event-related impacts to our trees.

A TPZ incorporates the 'minimum' area both above and below the ground at a given distance from the trunk in order to provide protection for the tree. Most importantly it represents the root zone required to be kept uninjured to maintain a healthy and viable tree. Roots will usually extend well beyond this zone, so this represents the minimum remaining root zone required, assuming all others are lost or damaged due to construction or other disturbance. It is typically calculated as a circle centred on the trunk, unless existing site conditions indicate otherwise.

The Structural Root Zone (SRZ) is the smaller area immediately around the base of the tree at a given distance from the trunk. The woody roots and soil cohesion in this area are considered vital to the 'structural' stability of the tree. Damage or removal of soil or roots from this area will typically render the tree unstable and require its removal. It is typically calculated as a circle, centred on the trunk, unless specific site conditions indicate otherwise.

### **Designing and Working Around Trees**

Tree protection must start at the planning stage of any proposed subdivision, building work, renovation, landscape or earthwork project, service upgrade or repair. Tree protection must not be an after thought.

It is essential an accurate topographical and feature survey is undertaken prior to starting the planning and design of any work. This is normal practice and should include the exact location, levels and details of all existing trees.

After this is completed, it should be issued to an AQF Level 5 consulting arborist who shall then complete a predevelopment tree assessment. Ideally this should be done and issued to all relevant design or engineering consultants together with their brief, to inform all design processes.



Figure 24: As part of additional information to support developments o claims of damage, Council may insist on suitable non-destructive root mapping and exposure. (Source: Arterra)

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## **Tree Preservation Tree Protection During Construction**

The consulting arborist's recommendations and TPZ offsets should be implemented by the design team for all trees intending to be retained. This is particularly important if designing within the vicinity of any trees identified as Significant Trees, which must be given extra consideration.

As a rule, no work of any kind shall typically be allowed within a tree's SRZ unless extensive, non-destructive investigations are undertaken and orchestrated by an  $\ensuremath{\mathsf{AQF}}$ Level 5 consulting arborist, to verify the proposals will not have any detrimental impacts to the tree.

All new works should be designed to avoid tree damage and impacts. Consideration must include not only the proposed works but also any proposed services, construction methods, construction access and even final landscaping. Typically, new work should be restricted to areas outside the calculated TPZs. There should be no cultivation of existing soils within a TPZ. Any landscape planting within the TPZs should be installed within a 100-200mm thickness of newly imported, manufactured topsoil. Topsoils from other sites or of unknown origin shall not be used. Use of plants of an appropriate size (typically smaller than a 200mm container size) helps avoid damage to existing surface roots, when landscape planting is undertaken around existing trees.

Tree protection is important even for small works. Minor works such as seat or furniture installation, service repairs etc. that may not involve detailed design or documentation should still give due consideration to tree protection. Employees or Contractors of the Council should complete a suitable minor works checklist prior to starting any work and confirm that the processes or methods they are intending to employ have taken into account tree protection requirements (both overhead and below ground).

The following outlines the process for managing tree protection during construction works. Where significant works are proposed and are to take place within the vicinity of any tree(s) the following process shall typically be adhered to.

- A detailed site survey shall be undertaken and a predevelopment tree assessment completed and issued to relevant design professionals.
- The project design and documentation shall be prepared in consultation with a nominated consulting arborist with a view to minimising the foreseeable project impacts on the adjacent tree(s).
- As part of any formal Contract for any works undertaken by Council, or on private development sites, a suitable Tree Protection Plan and accompanying Specification shall be prepared that clearly shows the proposed extent of works and the detail and location of all the required tree protection measures that are to be installed and remain in place for the duration of the construction.



Figure 25: Trees can be easily damaged by careless construction activity Proper protection from the start is key to successful tree protection and retention. (Source: Arterra)

### **Driveways and Site Access**

Removal of an existing street tree should be a last resort for any new or relocated driveways, unless the tree(s) is very small or has clearly reached the end of its useful life expectancy.

When planning any new driveway, or driveway modification, an owner needs to clearly demonstrate that alternative design solutions have been explored to preserve any existing street trees, before Council will consider the removal of an otherwise healthy street tree.

Where there is a request to expand an existing driveway or install a new driveway (or other such access) to a private property and it requires the removal of a street tree, the following considerations shall be made by Council in reaching a determination.

## 2.6

## **Tree Preservation** Tree Protection During Construction

- Are there suitable alternatives or options to relocate the driveway elsewhere?
- How significant and prominent is the tree and its contribution to the local environment or streetscape?
- Is the tree healthy and vigorous?
- Are there suitable alternative locations for a replacement tree if the driveway is installed?
- Allocation of suitable tree removal and tree replacement costs, should the removal and a replacement tree be agreed. (Refer to Section 2.7)

The supply of a new tree, the tree pit preparation and the methods of planting the tree shall follow the relevant technical guidelines, specifications and planting details as outlined in Sections 3.0 and 5.0 of this Guideline document.

Street and park trees will typically not be allowed to be pruned for any temporary or construction related access. The developer or owner must ensure that suitable measures are implemented to protect the tree(s) throughout the construction phase. If no other alternatives are available, the Council may approve minor pruning, in which case it must be undertaken in accordance with requirements outlined in this Guideline and undertaken only by a qualified practicing or utility arborists.



Figure 26: When working close to trees, it may even be necessary to install temporary trunk protection measures to limit accidental damage to delicate bark and branches. (Source: Arterra)

### Tree Assessment Requirements and Development Applications

As part of a Development Application, where works may impact existing trees within or immediately adjacent to a development site, an Arboricultural Impact Assessment is to be submitted. This shall be undertaken by a suitably qualified consulting arborist (minimum AQF5) and include all trees likely to be impacted by the proposed works. This may include neighbouring property trees or immediately adjoining park or street trees.

This assessment shall include assessment of impacts for temporary excavations, gantries, construction access, deliveries, cranage, piling and all services. This assessment shall clearly indicate what impacts, if any, are likely to be experienced and how they are intended to be managed or mitigated.

The assessment shall include a suitable Tree Protection and Removal Plan, clearly showing all the trees to be retained and any trees proposed for removal. Their nominal TPZs shall be documented and prepared by the Consulting Arborist to accompany the Impact Assessment, for the Council's review. As a minimum, all Arboricultural Impact Assessment Reports shall include the following.

- A clear summary of the proposal.
- The tree retention values and relevant tree protection zones and structural root zone for all trees within 5m of the property boundaries and any tree protection zones of trees on adjoining properties that extend into the site.
- An impact assessment which includes a suitable listing of trees proposed for removal or retention, the percentage of tree protection zone and structural root zone encroachment and if this is minor or major, and consideration of factors for any major encroachments and options for mitigation of impacts, and recommendations for alternative/tree sensitive design and tree protection methods.
- Where pruning works are specified the assessment must include the pruning requirements, the pruning class as defined by Australian Standard 4373 (2007) Pruning of Amenity Trees, the branch sizes and locations (including photographs which clearly show individual branches to be pruned) and the estimated percentage of crown to be removed.
- Tree plans showing tree removal and/or retention and tree protection zones and structural root zone for trees proposed for retention. These plans must be drawn to scale and show an accurate representation of the existing canopy.



## **Tree Preservation Tree Protection During Construction**

### **Root Mapping and Investigations**

Where major incursions are proposed Council may insist on appropriate 'non-destructive' root mapping or other such investigations are carried out in order to support the level of impact that may be suggested.

Any root mapping investigations and subsequent reports must be carried out in accordance with Root mapping assessments, specified in Section 2.3.

### **Minimum Tree Protection Requirements**

Tree Protection shall typically be expected to be installed as per any approved Tree Protection Plans and the required tree offsets shall be enforced by Council.

Prior to the commencement of any site works, and at appropriate intervals as conditioned by Council, the Council's Tree Management representative (for Council projects) or the nominated project consulting arborist, (for private works) shall regularly inspect the site to confirm, record and report back to the Council or relevant Private Certifier on the following:

- Required tree protection is appropriately installed as per the Tree Protection Plan.
- Confirm the status of the tree protection measures noting any breaches or shortcomings that need to be rectified in the tree protection measures.
- The condition of the trees, specifically noting any damage or visible deterioration of tree health since the previous inspection.



Figure 27: A key protection measure is the provision of adequate exclusion fencing to protect both the above and below ground portions of the tree from damage. (Source: Arterra)



28: When access is required close to trees it may be necessary to igure install temporary or permanent ground protection to prevent root damage and soil compaction. (Source: Arterra)



## Tree Preservation Tree Protection During Construction

### Tree Bonds, Compliance and Enforcement

Council may impose enforceable monetary bonds in order to protect trees during construction and allow for suitable remedies or replacements to occur should trees be removed or damaged during development or construction works. The amount of the bond and the method upon which the bond will be issued shall be outlined in the relevant Development Application - Conditions of Consent. This is similar to the approach Council takes in applying bonds on other public infrastructure such as roads, kerbs and footpaths.

The Council may also impose monetary penalties, in the case where bonds are not applied, should property owners, or their Contractors, be found to have negligently or wilfully caused damage to trees. Refer Section 2.4 Penalties shall be structured to place a monetary value on the tree as a whole, in the case of serious damage or death of the tree, and also on a pro-rata basis for any damage caused to only part of the tree. This will be based on the relevant size of the component damaged (ie. root or branch) and using accepted tree valuations methods that are outlined within Council's Tree Management Strategy and the following Section 2.7.



Figure 29: Council may impose a bond on trees to ensure they are better protected and to also fund suitable and timely replacements should they be damaged during development (Source: Arterra)

## Tree Preservation Tree Valuation and Compensation for Removal

## 2.7 Tree Valuation and Compensation For Removals

Trees are assets and have numerous values. These values are monetary, social, economic, environmental, historic and aesthetic. Council understands that trees are unique assets and also living organisms and therefore their monetary value varies depending on a multitude of circumstances such as their:

• Size;

- Age;
- Historical or cultural association;
- Environmental, canopy or shade contribution;
- Species;
- Location and public visibility;
- Habitat value; and
- Numerous other contributing factors.

Council may attribute a monetary value to a tree, or a group of trees, for one of the following reasons.

- To determine the broad economic value of trees as assets to Council and the community at either a LGA or precinct scale.
- To value a tree(s) that has been unlawfully or negligently damaged or removed.
- To determine appropriate monetary bonds or contractual penalties to be applied during construction, development or events.
- To determine the appropriate and reasonable compensation amount to be applied to a tree(s) when a public tree is being requested to be removed for the needs of a private development (for example the remove of a street tree for access).
- To determine the level of effort or budget that is reasonably spent when trying to retain, support or prolong the life of a significant tree.

There are numerous published and recognised methods for calculating the monetary value of trees. A tree valuation methodology shall be adopted by Council that is consistent with, or endorsed by, the current version of Arboriculture Australia's "Tree Valuation – Industry Guidance on Tree Valuation Methodologies, Practices and Standards". Council's preferred valuation methods shall be one of the following:

- The Thyer Method (refer also practice note below regarding relevant base costs).
- Tree Valuation method presented within the Tree Valuation – Industry Guidance on Tree Valuation Methodologies, Practices and Standards (MIS506) (Arboriculture Australia & New Zealand Arboricultural Association, 2022).
- The Melbourne City Tree Amenity Tree Valuation Method.
- One of the relevant methods outlined within the Council of Tree and Landscape Appraisers Guide (9th Edition or later).
- The calculated ecological services value utilising the i-Tree valuation tool.
- A direct replacement cost (but only where a tree is very small or young enough to be reasonably replaced, like for like).

These above methods are considered reliable and suitable methods under the recent Tree Valuation – Industry Guidance on Tree Valuation Methodologies, Practices and Standards (MIS506) (Arboriculture Australia & New Zealand Arboricultural Association, 2022). Council reserves the right to utilise any suitable valuation method that meets the above the requirements. The costs associated with any required tree removal, necessary ground preparation and establishment maintenance costs are all usually reasonable to include within a tree valuation. Some of the methods outlined above do this overtly while others may not.

**Practice Note.** When using the **Thyer Method**, the value of the 'base cost' should be extrapolated from the originally used 2011 figures for planting a 5 litre sized container tree in a grassed area that were given by the NSW Landscape Contractors Association. In 2011 this was a cost of \$ 24.20. Using an averaged annual CPI increase from that date, of 3% p.a., a **2024** figure of **\$36.60** shall be applied as the base cost.



## Tree Preservation Tree and Event Management

## 2.8 Trees and Event Management

### **General Considerations**

Festivals and events often involve the movement and setup of numerous large and small vehicles, stalls, marquees, generators, carnival rides and other mobile equipment. The event can then also draw very large crowds, some of which are forced through small or controlled entry points. All of this can have very significant and potentially long lasting impacts to the Council's trees. The potential tree impacts that need to be managed during an event are summarised below:

- Ground surface damage and compaction of the tree root zones and soils from intensive pedestrian traffic, vehicular traffic, loading and unloading of equipment, storage and stockpiling of materials, parking of vehicles, plant and equipment;
- Contamination of soils in the vicinity of trees from; accidental chemical spills, wash down/ cleaning of equipment, refuelling of generators and dumping or spilling of waste liquids;
- Damage caused by inappropriate attachment of items, cables, ropes or signage to trees;
- Mechanical impact damage from passing vehicles and equipment; and
- Physical damage to trees and branches resulting from inappropriate patron activities.

The key considerations to minimise potential related tree impacts include:

- Careful consideration of the event site location, layout and parking needs.
- · Controlled vehicular site access and parking.
- Exclusion zones, fencing or other protections to avoid mechanical damage to trees (trunks and overhanging branches).
- Installation of temporary tree protection barriers and temporary ground surface protection, wherever required, to limit or prevent excessive soil compaction.
- Communication with event organisers, including mandatory site inductions which include and stress tree protection requirements.
- Event security during the event to include active crowd supervision in order to prevent or limit damage to trees during the event, or inappropriate vehicle parking or other anti-tree behaviour.
- Careful planning and consideration of fuel storage and equipment refuelling.
- Careful planning and consideration of generator placement and the location of any hot exhaust emissions.
- Implementing appropriate penalties or bonds to cover negligent tree related damages.



Figure 30: Events within some of our streets, parks and reserves are common and need to be carefully controlled and managed to avoid tree impacts. (Source: Arterra)



## Tree Preservation Tree and Event Management

### **Event Planning**

Council has prepared a simple Event Planning protocol and information sheet (refer Appendix 5.2). This shall be given to all event organisers to facilitate them lodging a suitable event plan and considering tree related matters.

All event organisers must submit to Council at least 4 weeks before any planned event a detailed plan, preferably with reasonably scaled and accurate diagrams that clearly indicate the proposed location and extent of equipment being brought in, or installed. This should also include the location of primary access points for bump in-bump out. The requirements for tree protection and consideration must be clearly communicated to event organisers during all negotiations and arrangements with the Council's event liaison officer, to ensure it is not an after-thought.

Suitable contingency plans must be put in place should inclement weather conditions occur. Extensive rain prior to the event bump-in, for example, could make the ground largely impassable to vehicles and greatly increase the risk of unacceptable soil compaction.

### **Event Site Layouts**

The best tree protection measure is to design the event layout to maintain adequate clearances between trees and any equipment being brought in or installed. Appropriate clearances will minimise the likelihood of both impact damage and soil compaction within the root zone of trees. Event organisers must:

- Consider and maintain appropriate clearances to all lower branches of trees as well as to the trunk.
- Ensure stalls and other facilities shall typically be sited to be accessed clear of trees and to be easily accessed from already hard paved areas or from 'ground protected' walkways.
- Ensure intensive pedestrian activity (eg. dance or performance areas) when placed under the drip-line of any tree, that is only covered in grass or earth, suitable temporary ground protection matting is applied for the extent that is applicable under the tree's drip line.
- Ensure generators are typically maintained and positioned at least 10 metres from any tree trunk.
   Exhausts from generators must not discharge towards trees or upwards when under tree canopies.

### Vehicle Movement and Ground Protection

The movement of vehicles is of particular concern. Appropriate clearances and ground protection are necessary to minimise the likelihood of both impact damage and soil compaction within the root zone of trees. Event organisers must adhere to the following principles.

 Primary site access points - heavy equipment installations and storage areas within close proximity to trees shall be clearly identified and have temporary ground surface protection matting or suitable plates or boarding installed per the approved site layout plans and event planning document.



Figure 31: Trafficking of wet ground near to trees can have devastating effects to soil and roots and must be avoided. Temporary ground protection will normally be needed whenever vehicles need to cross soft ground to load and unload equipment. (Source: Arterra)



Tree Preservation Tree and Event Management



Figure 32: Appropriate ground protection is often readily available and can make a great difference to tree protection and patron enjoyment in vehicle or high pedestrian traffic areas. (Source: Arterra)

- Vehicular access the parking of vehicles, storage and installation of heavy equipment under any trees on the site shall typically be prohibited unless approved temporary ground surface protection matting or plates are installed per the approved site layout plans.
- Where vehicular access is required for 'Bump In' and 'Bump Out', under or through trees, and the area is not already hard paved, the access way shall have temporary ground surface protection matting or plates installed per the approved site layout plan to limit soil compaction and tree root disturbance. This will be exceptionally important if any periods of wet weather are experienced within 7 days of the event or during the event.
- All vehicular movements in the vicinity of trees, particularly of vehicles greater than 3.5 metres in height and/or 8 metres in length, must be supervised by a 'spotter'. This must be an authorised employee or representative of the Council to ensure compliance with tree protection standards. This is particularly important during the periods of most intensive vehicular activity such as during 'Bump In' and 'Bump Out'. All large items that are unloaded by crane or vehicle mounted lifting equipment should also be subject to a 'spotter' to limit potential foliage or branch impacts. The 'spotter' must supervise the truck movement and signal to the driver, warning of any possible conflict to be avoided between the truck, its load and nearby tree branches and trunks. Alternative access arrangements must be implemented if the truck cannot safely fit under existing tree branches. No tree branches are to be pruned or snapped off.

- If a truck must leave a paved pathway to avoid any low hanging trees, suitable ground protection mats or plates must be placed over the grassed areas being travelled by the vehicle.
- The nominated event manager is to ensure strict compliance with the above by all suppliers and delivery personnel to prevent tree damage.

### **Communication and Site Inductions**

Event organisers shall ensure that all contractors and stall operators are appropriately inducted prior to working on the event site. Tree protection shall be a key component in the site induction and must be maintained at the forefront of event workers' minds.

All site inductions shall include explanation of any exclusion zones and the description and identification of the tree protection protocols and the restrictions surrounding access and activities with regard to maintaining tree protection.

### Generators, Fuel Storage and Equipment Re-fuelling

Contamination of soils from fuel or other chemical spills can have devastating effects on trees, grass and other vegetation. The following must be adhered to during events.

- Any on-site, bulk fuel (fuel cells) must be stored a minimum of 15 metres away from the trunk of any tree.
- Generators, or other powered equipment (light towers, portable cold rooms, etc.) shall typically be positioned at least 10 metres from any tree. Exhaust emissions shall be directed away from any overhead canopy or branches.
- Mobile equipment refuelling is to be carried out with extreme care to prevent any spills or overflow.
- Refuelling shall be done at a minimum of 10 metres from the trunk of any tree and with appropriate bunding and/ or spill trays or ground protection in place.
- A 'fuel spill management kit' is to be on hand at the location of all refuelling activities.
- All refuelling is to be carried out by a team of two people. One to control the filling mechanism the other to observe the integrity of the equipment, manage any malfunctions and efficiently deploy the spill kit in the event of any fuel spill.



## Tree Preservation Trees and Event Management

### Security and Crowd Control

The Event organisers shall ensure the event security team and other event volunteers are adequately briefed to ensure they actively engage with patrons to particularly prevent adults and teenagers from climbing trees during the event, to minimise the likelihood of tree limb failure and accidental injury to patrons. Security and volunteers shall also be vigilant to prevent intentional or accidental vandalism to trees.

### **Extreme Weather**

In the process of event planning, due consideration should be given to the possibility of extreme weather impacting upon the event. The risk of tree failures is greatly elevated during periods of very heavy or prolonged rain or during very strong wind conditions.

Consideration should be given to how the event will be managed to minimise risks associated with possible tree failures in the event of extreme weather conditions. Winds of gale force (8 on the Beaufort scale or in excess of 63-75km/h) present a very serious and real risk to trees. Even healthy trees with no observable defects may fail in such high wind conditions. Branches may break out of trees and trees may even be up-rooted, particularly if it is preceded by periods of prolonged or heavy rains. It is recommended that events be suspended and the site evacuated should winds of this level be experienced.

### Penalties

Consideration shall be given by Council (depending on the size and purpose of the event) to imposing contractually enforceable penalties, that may be charged against event organisers, should their contractors and/or stall-holders be found to have caused avoidable damage to trees.

Penalties shall be structured to place a monetary value on the tree as a whole, in the case of serious damage or death of the tree, and also on a pro-rata basis for any damage caused to only part of the tree. This will be based on the relevant size of the component damaged (ie. root or branch) and using accepted tree valuations methods that are outlined within Council's Tree Management Strategy and the Tree Valuation section 2.7.



## Tree Preservation Tree Disputes and Appeals

## 2.9 Tree Disputes and Appeals

Council shall not intervene or resolve any disputes between neighbours concerning trees or tree related matters on private property. Any such disputes shall be referred to resolutions under the NSW Trees (Disputes Between Neighbours) Act 2006.

It is worth noting that the above Act does not apply to trees on land that is vested in, or managed by, Council.

If a Council managed tree is suspected of causing notable damage to significant private structures it will typically be a requirement for the owner of the property to adequately and clearly establish that the tree is actually causing the damage. They also need to reasonably demonstrate that the damage is significant and that continued and future damage cannot be overcome by any other reasonable and practical measures.

A property owner is responsible for inspecting and maintaining all built structures on their land. Council does not inspect private properties for signs of damage.

If property owners or residents believe that they have been unfairly treated with regard to any tree related matters, or Council has been negligent or unprofessional in their management of trees or tree related requests they should raise their concerns directly with the Manager of Council's Tree Management Team.

Alternatively they may refer their concerns to Council's Internal Ombudsman. The Internal Ombudsman provides residents, community members, ratepayers, local businesses, staff, Councillors and other Council stakeholders with an impartial service to address concerns or complaints about administrative conduct, unethical behaviour by Council, corrupt conduct, misconduct or maladministration.



This section of the Guidelines establishes the requirements and best practice procedures that Council will apply when selecting and then planting new trees throughout our community.





236 ITEM 03 Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management Technical Guidelines) Attachment 4 Draft LCC Tree Management Technical Guidelines - May 2024



# **3.0** TREE PLANTING AND SELECTION

# TREE PLANTING

## TREE PLANTING AND SELECTION

### 3.1 Right Tree, Right Place

Street and park trees are long term assets and investments that may typically live between 50 to 150 years, so appropriate species selection is vitally important.

Many of Liverpool's streets and parks are already planted with established or remnant trees. Council adheres to the principle of the 'right tree for the right location'. Council will generally aim to preserve and protect our existing trees wherever possible. Some exceptions to the this general policy may occur and include trees and species that are:

- performing poorly;
- considered 'grossly' out-of-scale with the street or particular location; or
- have proven themselves to be particularly damaging to pavements and other structures within that location.

In assessing what tree to choose for any given space, it is vital to recognise that trees are living organisms. No tree can accommodate all potential constraints and requirements perfectly. There is no perfect urban tree. It will always be necessary to find the "best" fit for certain spaces, street and park circumstances and potentially compromise on some aspects.



Figure 33: Council will always seek to select and plant trees that are appropriate to their position. Our aim will always be to maximise the potential for shade and canopy cover and longevity. We also need ot be looking to trees that are climate adaptive. (Source: Arterra)

Our key tree selection objective is still to ensure the selection of the 'right tree for the right location'. In other words, to ensure that the selection of the species is optimised for the local environmental conditions and the other constraints of the planting location. We aim to ensure that the tree makes a positive contribution to the environmental, amenity, aesthetic and heritage values of the area and that foreseeable negative aspects are minimized as much as reasonably possible.

When selecting an urban tree it is vital to consider numerous important physical and other characteristics. These relate to the fundamental environmental, functional and aesthetic requirements. The basic criteria that need to be considered in selecting any tree are:

- The ultimate size, habit and form of the tree.
- General form and branching architecture and its ability to be formatively pruned and its natural clearances to the ground and other overhead structures.
- Tolerance to being used in paved or urban areas.
- The type and quality of the shade that it casts.
- Tolerance of the tree to a variety of prevailing soil conditions.
- Tolerance and adaptability of the tree to potential future climate regimes over the next 50-100 years and also the site specific microclimate and other extremes that might occur.
- Expected heatwave and drought tolerance.
- Pest and disease tolerance.
- Deciduous or evergreen foliage.
- Foliage size and colour.
- Wind tolerance and resistance to undue damage or branch failures.
- Longevity and growth rate.
- Pollution tolerance.
- Potential of the tree to be an allergen or irritant.
- Maintenance levels required (pruning, disease control, fruit fall; etc.).
- Amount and nature of potential tree generated litter (such as bark, flowers, fruit, leaves, twigs).
- Commercial availability in a variety of larger sizes.
- The risk of it becoming an environmental or invasive weed.
- · Contribution to biodiversity and habitat outcomes.





Figure 34: Adequate canopy coverage, shade and transpiration during hot months is key to our long term targets and outcomes. Good quality shade makes our streets, parks and plazas more usable in summer and can promote healthy activity and walking within our communities (Source: Arterra)

Research has consistently shown that medium to large trees provide the greatest ecological and community benefits in comparison to small trees. They create more canopy spread and shading benefits, absorption of more gaseous pollutants, lower levels of tree vandalism, and achieve higher canopy clearances, than very small trees. Medium and larger growing trees are also commonly longer lived than smaller trees. Larger trees, however, do require larger soil volumes and more physical space above and below ground than small trees. This needs to be designed and factored in to any new plantings. However the ultimate benefits to the community are often exponentially increased over their lifetime.

Using the paradigm of 'right tree for the right location', a medium to large tree will only be specified and planted in an area where there is sufficient space, and the growing conditions are suitable for the reasonable foreseeable life span of the tree. Smaller trees will also have a place in the urban forest particularly for areas where physical space, overhead wires, parking and traffic restrictions or exposure present overriding factors.

### **Canopy Cover Is Crucial**

In addressing extreme heat, numerous research studies now consistently outline the benefits that trees and tree canopy cover provide. These affects have been measured at both the individual street or lot level and on a precinct scale. When addressing the impacts of urban heat, research confirms that we need tree canopy at both these local and precinct scales - ideally with a minimum of 30 per cent canopy cover.

Increased urban greening is now a recognised, mainstream technique to mitigate urban heat. 'Urban greening' facilitates the cooling of our homes, businesses, plazas, streets and parklands via evapotranspiration, shading and providing cooler surfaces thereby reducing the mean radiant temperatures.

Canopy trees actively help to cool any hot air and hot surfaces around them, through shading and evaporative cooling. Even individual trees can make a valuable difference to air temperatures at the scale of an individual property, but recent studies have shown that larger groupings of trees, that combine to provide >40% canopy cover, at the scale of a city block can reduce local ambient air temperature by more than 1.3°C (Ziter, C. et al 2019).



Reducing paved surfaces at the same time also helps to reduce heat that is absorbed and radiated back into the air. Therefore extreme heat is moderated most effectively where there are both more tree canopy cover and less hard paved surfaces.



Figure 35: Tree selection when close to native bushland areas may also need to consider Asset Protection Zone requirements and avoid species that may contribute to hazard and fire spread. (Source: Arterra)

### **Bushfire and Asset Protection Zones (APZs)**

A large area of the Liverpool Council area is identified as bushfire prone land. Many of the our urban areas are surrounded by large areas of native vegetation or border significant riparian corridors.

Many streets that are on the edges of the urban areas that front these larger areas of native vegetation may form part of an Asset Protection Zone. The planting of additional trees within these zones may increase the risk of fire damage to persons and property and may also limit safe access for emergency services during a bushfire. Careful consideration should be given to planting of street and park trees on the urban periphery to manage bush fire risks.

A number of factors need to be considered when planning street and park tree planting when in fire prone areas. This includes the characteristics of particular tree species and the placement and spacing of trees along a street or park. Trees with the following characteristics may also reduce the impact of bushfires on our urban areas, including trees with:

- high moisture content in their leaves;
- an open branching pattern;
- a clear trunk to at least 2m from ground level;
- smooth bark on the trunk and branches; and
- wide, thick and fleshy leaves.

The placement of street trees in bushfire prone areas can reduce the risk of fire damage if the trees are:

- spaced so that the canopies do not touch when mature;
- a safe distance from buildings, driveways, water supplies and powerlines; and
- planted away from shrubs or other small bushy trees that could transport a ground fire into the canopy.

The planting of trees in some streets may increase the bushfire hazard and as such, not all streets that may appear to have sufficient space, will be planted with street trees. This will be assessed by Council on a case by case basis.



Figure 36: Some residential areas front remnant native bushland and therefore the provision of appropriate Asset Protection Zones will be required. (Source: Arterra)





Figure 37: Although we may favour the use of native and endemic trees, in many situations, the community greatly appreciates the beauty of deciduous and exotic trees and trees that can provide valuable solar access to walkways and living spaces in winter. (Source: Arterra)

### Solar Access

Where appropriate, species should be selected that will provide an appropriate level of solar access to nearby dwellings during winter. This is usually most important to east-west oriented roads in areas with lower-rise flanking buildings. It can also be important in higher-rise apartment streets where deciduous or less dense trees can provide light to other otherwise very shaded streets in winter. In meeting this objective, consideration is also given to other principles such as species diversity and the existing street and park characters.

An important advantage of many exotic species, in a suburban and particularly urban contexts, is that they include most of the useful and proven deciduous trees that can provide far greater solar access to the streets and houses through the winter months. There are very few Australian native trees that are deciduous, and generally those that are, loose their leaves in spring or early summer.

Many exotic deciduous species have the advantage of decades, if not hundreds of years of selective breeding which ensures improved stock. In summary, both natives and exotics have their strengths and weaknesses for use as urban trees. Liverpool's Tree Management Strategy aims to plant the right tree for the right location, for the right reason and strike an appropriate balance between endemic and non-endemic species.

### Habitat

Council is aiming to achieve a far greater diversity of urban tree species, thereby providing a greater diversity and abundance of food sources, shelter, roosting and nesting opportunities. This will typically be through providing a greater diversity of trees within individual streets or parks, often in combination with an increased use of native species, while still catering to some important other needs such as heritage, winter solar access, appropriate tree sizes, tree longevity, tree form and habit, ongoing maintenance requirements and community expectations.

The natural landscape of Liverpool and the wider Sydney area has changed dramatically and is almost unrecognisable from its state before colonisation more than two centuries ago. Ecosystem health and biodiversity are still important for a sustainable world. Protecting and improving our urban biodiversity, while also reclaiming and managing functional ecosystem health in Liverpool, can play a vital role in improving the health of our residents and the liveability of the LGA. Biodiversity and habitat can be enhanced by providing environmental conditions and supporting functional ecosystems that will support a diversity of plant species and then in turn these plant communities may provide habitat for wildlife. (Rowe, B., 2019).



Figure 38: Trees provide enormous benefits to us and also to wildlife. They are valuable for birds and other large and small animals. (Source: Arterra)

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Figure 39: Liverpool has an extensive and diverse urban forest but there is still much work to be done to enhance and expand this valuable resource. (Source: Arterra)

Our overall tree management approach strives to achieve a far greater diversity of species. Urban trees are a vitally important part of our wider urban forest and can provide valuable and linked corridors of vegetation and tree canopy that can promote and enhance native habitat and provide sources of food, shelter and other benefits for our native birds, animals, insects and other creatures. Well planted and shady streets and parks can provide important respite and corridors for the movement of species. This can be particularly important for bees and other insects that may not be able to fly large distances in more open or exposed areas.

We are planning to introduce far more trees into our streets, including some streets that may have never had trees. We also aiming to reduce reliance on exotic species in favour of more regionally endemic native species. The combination of these initiatives and our continued goal to increase urban greening generally will allow our streets, parks and drainage reserves to be utilised to improve ecological connections and provide useful stepping stones for our native urban fauna, particularly between our major parklands such as Western Sydney Park, South Creek Corridor, Bents Basin and the Georges River foreshores.

We have focussed on exploring and choosing tree species that will be more resilient to identified and foreseeable climate change impacts, thereby providing greater resilience for our tree canopy and urban forest in times of droughts, heatwaves and generally warmer climate scenarios.



## 3.2 Planning and Design Considerations

### **Climate Change**

Adapting to climate change is critical for a resilient, sustainable and forward-thinking approach to our tree planting. We recognise that there needs to be a change and adoption towards tree species that have been assessed as better suited to warmer climates and increased heatwave extremes. The City also needs to increasingly investigate and promote the use of water sensitive design strategies that may assist to passively irrigate our urban trees wherever possible. This will allow them to better deal with extremes and drought conditions.

Climate change poses a serious risk to all people, future generations and should be treated as a national emergency. Average temperatures climbing above 2°C from existing temperatures would have a devastating impact on Australia, including:

- more extreme weather events;
- reduced rainfall and prolonged droughts;
- longer, hotter and more frequent heatwaves;
- water scarcity;
- more extreme bushfires;
- increased risks to food production;
- reduced biodiversity; and
- inundation of low lying and coastal areas.

As Australia's climate inevitably changes over the next 50-100 years, the species of trees and other plants used in our LGA today may not be suited to the range of conditions presented by the new climate. Research has found that Sydney's climate would be more like present day Grafton, in less than 30 years. As part of our Tree Management Technical Guidelines we have selected several suitable tree species that have not been commonly used in Liverpool. These trees have been chosen as they are expected to cope better with our future climate. Likewise we have ceased to utilise and promote some commonly used species that we believe are not going to be well suited to our future hotter and drier conditions.

It is expected that potential water use restrictions and lower than average rainfalls, that have previously been experienced in Sydney, will continue and potentially worsen into the longer term. Trees that we select now will need to be capable of surviving average drought periods, in reasonable condition and without reliance on potable water supplies. Passive irrigation through the use of Water Sensitive Urban Design initiative will be designed into many of our new or upgraded park and street tree planting projects and will assist our trees by allowing additional water in times of drought and generally promote better health and growth during normal times.



Figure 40: Beyond the obvious dilemmas of heat and drought, one of the concerns for tree management is increased storm and storm intensity (Source: Arterra)



Figure 41: Droughts, extreme heat and bushfires could all have major impacts to our urban forest and we need highly resilient and appropriate tree planting to cope and flourish into the future (Source: Arterra)

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### Intrinsic Climate and Soils

Trees are living things. The capacity of any tree to establish and grow successfully depends greatly on the basic environmental conditions at the planting site being within the tolerance range of the species selected. The underlying geology and soil provides access to nutrients and water as well as physical support for the tree. Soils can differ greatly in terms of the nutrients they provide, their drainage characteristics, oxygenation and depths. In Liverpool our dominant soils are formed from the underlying Wianamatta shales. These usually produce relatively heavy clay soils with only moderate fertility but good water holding capacity.

In some outer lying eastern and western areas of the LGA, the underlying geology is transitioning to Hawkesbury Sandstones which typically produce very shallow, sandy, and extremely low nutrient soils.

We must also remember that many urban areas throughout Liverpool are also highly disturbed. In many instances the original topsoils will have been completely disturbed or removed and replaced with imported materials, often including rubble, building debris and other unnatural landfill materials. This is particularly common around industrial areas, the Liverpool CBD, and some river foreshores.

With regard to our natural climatic conditions, Sydney is located on the south-east coast of Australia and enjoys a relatively moderate (temperate) climate. We generally escape the extremes of temperatures that are more common in the interior of the continent and the very high humidity and rainfalls of the more tropical coastal areas.

We generally experience warm and wet summers and autumns and then a cool and drier winter and spring. Our average daily maximum temperatures around 28°C occur between December and March with our average daily minimum temperatures of around 6°C occurring between June and August. Importantly we do average around 7 or 8 days a year where temperatures are less than 2°C and numerous winter mornings where frosts are common. Any trees selected must be able to thrive in both our current, and also our predicted future, climatic conditions.

Being slightly inland from the coast we usually experience typical 'sea breeze' phenomenon in our warmer months. Winds in the morning are generally light and from the west or south-west. Later in the day when the land heats up and the air above rises, it is replaced by air and winds that switch to the east and south-east bringing cooler 'sea breezes'. Our strongest winds are typically in summer months and from the south and south-east.



Figure 42: Endemic trees are well placed to cope with our natural soils, climate and pests and should be a foundation for future tree planting (Source:Arterra)



Figure 43: Our soils are often far from natural as we move into disturbed and more intensive urban areas. This is where exotic species can help play a part in our urban forest solutions (Source:Arterra)



In winter there is a general trend of cooler breezes blowing form the west and south west, generally lighter in the mornings, and becoming stronger during the afternoons.

Often more importantly, however for tree planting in urban areas, is the consideration of microclimatic conditions that are present within a particular location. In the CBD and around high-rise and dense apartment areas, in particular, overshadowing caused by taller buildings, wind tunnel effects and reflected and re-radiated heat from north or western facing areas can result in the need for tree species that are particularly hardy and resilient to these adverse conditions.

### **Species Diversity**

Trees provide shelter, food and other habitat resources for a range of fauna species, including small mammals, birds, reptiles and insects. Wherever possible, consideration will be given to planting trees that expand and provide greater connections between open spaces or larger vegetated areas, particularly those identified as priority habitat areas. This is to increase the area of available habitat and assist in the movement of native fauna species between those areas. Although native trees are preferable in this regard, exotic species also have some habitat value. A mix of species may be used where appropriate to improve outcomes and resilience of our urban forest.



Figure 45: Planting small trees too close to edges and not taking advantage of parks and open spaces to plant larger trees is a massive waste of opportunity and resources. (Source: Arterra)

### Size and Space

Very large trees within confined spaces often result in unacceptably high management costs and potential infrastructure and property damage. Conversely small growing trees within broad streets or open parklands rarely contribute significantly to our environment or the visual quality of the street or to enhancement of our vital canopy coverage and habitat. We will endeavour to select trees that are in scale with their surroundings. Where appropriate we will always aim to utilise the largest growing species possible, for the space available.

Species should still be selected such that the ultimate mature size of the tree has consideration of the relevant constraints, such as footpath and nature strip widths, overhead power lines, building setbacks and vehicle clearances.

The optimum range is a tree that is not too small that it fails to make a contribution to amenity of the urban area, and not so large as to dominate and cause significant problems to its surroundings. In some instances, the constraints imposed by a particular street or urban environment will limit the size of a tree selected or occasionally restrict tree planting altogether.



Figure 44: Our naturally heavy clay soils often lead to challenges around waterlogging and soil aeration and compaction (Source: Arterra)



### Hardiness and Longevity

Proven performance of the species under the current and future environmental conditions of the locality is vitally important. Trees are a very long term investment and substantial amounts of money are often invested in their purchase, planting and maintenance. New species should be trialled and tested on a smaller scale before implementing their more widespread use.

Our selected tree species have been chosen to be resistant to foreseeable pests and disease. A greater diversity of species across Liverpool and even within individual streets and parks, is also important in reducing the potential impact of any future devastating diseases that may impact on a specific tree species.

Many of the costs associated with the management of trees in an urban environment are associated with either the early establishment phase or the senescent phase and the ultimate removal of the tree. Using hardy, longer lived tree species that require less frequent replacements or mid-life maintenance helps us to minimise tree management costs and maximise tree related benefits.

### Form and Habit

Selected urban tree species should have an appropriate and predictable form, usually with an upright trunk, spreading canopy and stable branch structures. Street trees, in particular, need to have a form that allows traffic and pedestrian movements around and under the tree. In the CBD desirable tree forms include trees that exhibit a single straight main trunk that supports a domed crown. In some particularly restricted areas and locations they may need to have narrow columnar forms. In some areas with particular constraints and small soil volumes we may rely on the use of hardy palm trees, in order to provide any planting.



Figure 46: The right tree for the right location can add substantial benefits and amenity to even the most urban of areas, both deciduous and evergreen have their place. (Source: Arterra)

### Tree Type - Evergreen or Deciduous

Our urban tree species palette includes both evergreen and deciduous trees. Evergreen species can provide year round screening, greenery and shelter from winds. Deciduous trees provide stimulating seasonal interest whilst maximising access to winter sunlight. In some residential areas and some CBD streets, deciduous trees are extremely useful to maximise summer shading and winter light, particularly for well used footpaths and park areas, and to buildings located on the southern side of an east-west oriented street.

### Availability

The selected tree species must also be capable of being commercially grown and available in a suitable size for urban and public tree planting. Generally, the tree stock that will be used for our streets and prominent parks are larger and advanced container grown stock in order to provide the suitable visual impact, pedestrian clearances and the adequate resistance to casual damage or intentional vandalism.

We will typically have greater flexibility for species and installation size selection when planting within lesser used parks and open spaces.





Figure 47: Quality nursery stock is key to all successful tree planting and long term results. (Source: Arterra)



Figure 48: Any tree can fail for a variety of reasons. Species that are known to commonly cause maintenance or safety issues will be typically avoided for use where such issues may cause ongoing burdens to Council or the community. (Source: Arterra)

### Invasiveness

Some species are known to be, or have the potential to be, serious environmental weeds due to their ability to self propagate and invade bushland and water way areas. Those with known propensity for this within a local and urban context will be avoided.

Some species may have a slight propensity for invasiveness, but can still be suitable and valuable selections for urban planting when used well away from bushland areas.

### Safety and Maintenance

All trees that are selected have been identified to require minimal maintenance once they have become established. Trees that require regular and ongoing maintenance, pruning, pest and disease control are typically avoided.

Limb loss can occur on an occasional basis in most trees, due to age or to wind and storm breakage. Trees that are renowned for having particularly brittle branches, poor branch attachments and are more regularly known for sudden limb failure of larger branches (commonly known as summer branch drop) will normally be avoided for use in higher use urban areas.

All trees shed bark, leaves, twigs, fruit and flowers. This is a natural process, part of their growth and needs to be accepted. However, our selected urban tree species must have an acceptable level of nuisance that may be created through the natural shedding of leaves and fruit, particularly when used within a street or plaza environment. Those with very large or heavy seed pods, excessive leaf drop, or hard and rounded fruits or fleshy fruits or flowers that may lead to slip and fall hazards will typically be avoided.

Most urban tree species, due to their positions and nature, have the capacity to interact with and cause some damage to buildings, kerbs, pavements and services. Their considered placement, provision of adequate soil volumes from the start, creation of suitable pavement openings and the choice of an appropriate species for the spaces available are all important.

Despite this, tree species that are renowned for extremely vigorous root systems, buttressing roots systems and excessive root flares that often cause pavement uplift should be restricted to areas where adequate space can be provided such as within parks. Council may also investigate the use of alternative footpath materials and other design measures to help minimise tree root and infrastructure interaction. This is particularly important in retaining existing trees. We may explore removing paving around tree bases, expanding tree pit size, utilising flexible or suspended pavements in order to retain important existing trees.



### **Timing of Planting**

Trees are living things and when they are young they are at their most vulnerable. Tree planting should ideally be undertaken in either Autumn or Winter. This will greatly increase the success of the planting and reduce the establishment maintenance burdens. Planting in spring and summer often exposes trees to incredible stresses from heat and evaporation well before they have managed to expand and grow their root systems to support that burden. Likewise, pests and diseases are often more prevalent in these warmer months.

This timing should be adopted for all new major tree planting projects undertaken by Council. Private developers and other authorities should also be encouraged to consider proper timing for any major tree planting projects. Trees must be regularly maintained, ideally for a minimum of 24 months from the date of their planting, to ensure adequate establishment maintenance and survival. This is to include pest and disease monitoring and control, watering and timely replacement of any failed trees, where required. Undertaking planting and then not seeing that though to the ultimate survival of the tree is a waste of valuable efforts and resources. It is most efficient to properly plan and resource tree planting to give young trees the best chances of success and effective establishment.



Figure 49: The best time for new planting is during autumn or winter. This allows young plants to establish some roots and resilience before the challenges of excessive heat or dry weather that often causes severe stress in young trees. (Source: Liverpool City Council)



Tree Planting and Selection Species Selection



Figure 50: There are many forms and types of trees. From evergreen to deciduous and from tall and narrow canopies to broad and spreading. There are numerous factors that need to be considered when selecting species and much will depend on whether it is in a park with good space, or it is on a street or in private property close to buildings and pathways. (Source: Arterra)



Figure 51: Large and spreading trees such as this Morton Bay Fig, where space can be provided, can provide important, long lived and civic scaled trees. These will greatly contribute to our canopy cover, livability and amenity over the next 50-100 years and need to be planted and replaced. (Source: Arterra)

## 3.3 Species Selection

When we plant any tree within Council managed areas, we need to make sure that the proposed species is appropriate. The species selection should relate to prevailing urban conditions and when in a larger park or more natural areas, it should ideally relate to more naturally occurring vegetation types that would have occurred in and around our area.

Species selection must always be carefully considered. We have already covered many of the fundamentals but again to reinforce that the final species selection must involve considering:

- Environmental Conditions Any tree planted must be appropriate to the local soils, drainage and microclimatic conditions. It is unrealistic to expect trees that are not well suited to overcome these inherent issues and they will inevitably fail or present an unnecessary maintenance burden on Council.
- Size Is the ultimate size of the tree properly considered and will there be enough space around the tree and in between other trees. Surrounding trees and overshadowing can easily suppress or alter the proper forms of a tree and render it permanently disfigured.
- **Type of Tree** Trees can be evergreen, deciduous, and various basic forms (fastigiate/columnar and narrow or broad and spreading). Will it provide dense or dappled shade? Both may be appropriate depending on the particular circumstances.
- Other Issues Does the tree present any known allergy or irritant problems, does it have any known pest or disease susceptibility, is it likely to become an environmental weed? Is it known for excessive limb drop, fruit or flower shedding? All of these should be weighed up before the final selection.
- Views and screening Will the tree potentially impact or detract from any important views? Will it provide the required or desired screening? Different trees have different inherent heights and density of foliage. Will it block view lines between pedestrians, cyclists, signage and vehicles?

# TREE PLANTING

### **Preferred Species List**

Council has developed a comprehensive species list of trees considered most suitable for planting within our area. We have analysed hundreds of potential trees based on their physical traits, expert experience and opinion, biodiversity needs, historical performance, indigenous knowledge, and their ability to survive into the future changing climate. These are trees selected from a very wide range of candidates and have been determined to be most suitable and desirable for planting within the LGA.

This list importantly covers a broad range of possible locations such as our streets, urban and civic plazas, carparks, larger public parks, smaller neighbourhood parks, and even private properties.

The Preferred Species List provides a list of tree species and highlights those considered more suitable for particular locations, such as fulfilling the most taxing needs of street planting and planting under wires.

Although there are potentially thousands of trees from which to choose, only a select set of trees have been identified as ideal candidates for planting within Liverpool to try and meet our strategic objectives, more effectively spend our limited resources and try and prevent use of inappropriate trees.



Figure 52: Street trees are important but need to be very carefully considered based on verge size, surrounding pavement and relationship to traffic lanes. (Source: Arterra)

LIVERPOOL CITY COUNCIL TREE MANAGEMENT TECHNICAL GUIDELINES

This listing has been developed using the knowledge of Council's experienced staff and specialist advisers, that together have a very long history of managing and installing trees throughout Western Sydney. We have also engaged with a number of industry and technical experts in the field of tree selection. Table 3 outlines our preferred species listing and will be the guide and basis for most tree selections undertaken by Council. Users of this list should pay particular attention to the 'guidance of use' columns, which indicate where certain tree species may be more suitably used.

Our Preferred Species List is a diverse assemblage that caters well for the majority of tree planting needs in the near future. It includes over **100** different tree species with over **50** different genus of trees and **27** different families. When one examines the different tree species recommended the following diversity is highlighted.

### Tree Size

12% are civic-scaled trees 33% are large trees 28% are medium sized trees 26% are small trees

### **Tree Origins**

41% are endemic to the area 25% are native to other areas of NSW or Australia 34% are from other parts of the world

### Tree Type

75% are evergreen trees 23% are deciduous trees 2 % are palm trees

### Glossary of Terms Used in the Species List

### Potential Height

This is the reasonable mature height range for a tree in a normal urban situation, within western Sydney. Trees may or may not achieve these heights depending on soil volumes and growing conditions. It is important to note that larger heights and sizes may be given for trees in some sources based their natural forest situations but they will usually never reach these heights when growing in harsher and non-natural environments like urban parks and streets.

### **Ultimate Size Class**

This is a broad classification to indicate the mature trees contribution to canopy cover and general landscape amenity. It is based on both the height and spread of the tree. Civic trees are trees that usually require a lot of space and should only be planted in larger parks or areas specifically assessed as capable of supporting the tree.

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### Canopy Cover

This is the approximate mature contribution to canopy cover based on the area of canopy, as projected in plan view onto the ground. It is expressed in square meters and is based on the expected size of the tree at approximately 40-50 years of age.

### Native / Exotic

Native is a tree that is native to wider Australia while the term Endemic is used to refer to a species that hails from the Sydney Bioregion. In this context endemic may be used interchangeably with the term indigenous. Exotic is tree not native to Australia.

### **Usage Guidance - Parks**

Tree suitable for use in parks and similar open spaces where soil volumes and space are typically not constrained.

### Usage Guidance - Bushland / Riparian

This term is used to indicate trees that may be considered when closer to natural areas or along reconstructed or urban drainage reserves, detention basins and the like. This is not intended to indicate species suitable for bushland or native area restoration. It is noted that Liverpool LGA is a very large and diverse natural area and has a multitude of natural soil conditions. Consideration must be given to species selections that relate to either a sandstone dominated environment or that of the more wide spread shale landscapes. (Refer to Section 3.5 and Appendix 6.4 within the Tree Management Strategy for further information and guidance surrounding naturally occurring tree species).

### Usage Guidance - Streets Urban

This term is used to indicate trees that may be suitable for streets that are more urban and constrained in nature. For example they are typically streets that are in more built up areas and may have narrow verges and normally will be full paved. Soil volumes may be highly constrained and needing improvement at the time of planting. Buildings and traffic movement may be relatively close by to the tree.

### **Usage Guidance - Streets General**

This term is used to indicate trees that may be suitable for streets that are more residential in nature and less constrained for tree planting. For example they are typically streets that are in older and lower density housing areas or industrial estates that may have reasonably wide verges and normally will be expected to have grassed or planted strips in which to plant. It may be expected that the tree can access and utilise surrounding natural soils and the buildings and traffic movement lanes are further from the tree.

### **Usage Guidance - Under Wires**

This term is used to indicate trees that may be suitable for streets when there are overhead power lines or other utility wires and limited opportunities for planting a larger tree away from the wires. In this instance a small tree that may grow under the wires, without excessive pruning, is better than no tree planting.



Figure 53: Tree selection should aim to install the largest reasonable tree while still considered important contexts such as its relationship to buildings, soil volumes that are able to be provided, biodiversity and proximity to natural areas. (Source: Arterra)

### Usage Guidance - Invasive Alert

This term is used to indicate trees that may be suitable for planting but only in specific and controlled situations. This includes species that may be good urban trees and historically used, but may have a propensity to self seed into natural or semi-natural areas or peoples yards or vacant lands. They maybe still suitable for highly built up areas or areas well away from native vegetation or waterways.

### Soil Volume Guidance

This is provided as a very broad guideline to the expected minimum soil volumes made available for reasonable tree health and growth. Site specific conditions, numbers of trees and harshness of the planting site, and availability of water must all be factored to any final planting decisions. Generally speaking, the more soil volume provided, the healthier the tree will be.



## Tree Planting and Selection Preferred Species List

### Table 3 - Preferred Species List

Species	Common Name	Potential Height	Ultimate Size Class	Typical Ultimate Canopy Extent (Canopy Cover)	Native/ Exotic	Evergreen/ Deciduous	Parks	Bushland /Riparian	Streets Urban	Streets General	Under Wires	Invasiveness Alert	Guideline Soil Volume Requirement	Comment or Note
CIVIC SCALED TREES														
Afrocarpus falcatus	Outeniqua Yellow Wood	20-25m	Civic	314m2	Exotic	Evergreen	Y					Y	50-90m3	
Agathis robusta	Queensland Kauri	20-25m	Civic	175m2	Native	Evergreen	Y						50-90m3	
Araucaria bidwillii	Bunya Pine	20-28m	Civic	78m2	Native	Evergreen	Y						50-90m3	Large cones - not near high use areas
Araucaria columnaris	Cook Pine	20-28m	Civic	78m2	Exotic	Evergreen	Y			Y			40-60m3	Civic for height
Araucaria cunninghamii	Hoop Pine	20-28m	Civic	78m2	Native	Evergreen	Y						50-90m3	
Corymbia citriodora	Lemon-scented Gum**	20-25m	Civic	314m2	Endemic	Evergreen	Y					Y	50-90m3	Overused, invasive - limited use only
Eucalyptus camaldulensis	River Red Gum	20-28m	Civic	314m2	Native	Evergreen	Y						50-90m3	
Eucalyptus pilularis	Blackbutt	20-25m	Civic	314m2	Endemic	Evergreen	Y						50-90m3	
Eucalyptus saligna	Sydney Bluegum	20-28m	Civic	314m2	Endemic	Evergreen	Y						50-90m3	
Ficus macrophylla	Morton Bay Fig	20-25m	Civic	314m2	Native	Evergreen	Y						70-100m3	
Ficus microcarpa var. hillii	Hills Weeping Fig	20-25m	Civic	314m2	Native	Evergreen	Y						70-100m3	Avoid frost prone areas
Ficus obliqua	Small Leaf Fig	20-25m	Civic	314m2	Native	Evergreen	Y						70-100m3	
Quercus Iusitanica	Lusitanian Oak	18-25m	Civic	175m2	Exotic	Deciduous	Y						50-90m3	
LARGE TREES														
Angophora costata	Smooth-barked Apple	12-20m	Large	175m2	Endemic	Evergreen	Y	Y	Y	Y			40-60m3	
Angophora floribunda	Rough-barked Apple	12-20m	Large	175m2	Endemic	Evergreen	Y	Y		Y			40-60m3	
Angophora subvelutina	Broad-leaved Apple	12-20m	Large	175m2	Endemic	Evergreen	Y	Y		Y			40-60m3	

\*\* = Limited and specific ongoing uses only - minimise general usage # = Only use small trees within parks when larger trees are specifically not suitable

60 LIVERPOOL CITY COUNCIL TREE MANAGEMENT TECHNICAL GUIDELINES

		otential Height	ltimate Size Class	rpical Ultimate anopy Extent anopy Cover)	ative/ Exotic	/ergreen/ eciduous	arks	ushland /Riparian	reets Urban	reets General	nder Wires	vasiveness Alert	uideline Soil olume Requirement	
Species Castanospermum	Common Name	<b>≚</b>	5 Large	175m2	Z Native	Evergreen	Å	ā	St	St	'n	In	Ū≯ 40-60m3	Comment or Note
australe														over car parks
Casuraina cunninghamiana	River She-Oak	15-18m	Large	175m2	Endemic	Evergreen	Y	Y					40-60m3	
Casuraina glauca	Swamp She-Oak	15-18m	Large	175m2	Endemic	Evergreen	Y	Y					40-60m3	
Corymbia maculata	Spotted Gum	18-25m	Large	175m2	Native	Evergreen	Y	Y		Y			40-60m3	
Eucalyptus amplifolia	Cabbage Gum	20-25m	Large	175m2	Endemic	Evergreen	Y	Y		Y			40-60m3	
Eucalyptus baueriana	Blue Box	20-25m	Large	175m2	Endemic	Evergreen	Y	Y		Y			40-60m3	
Eucalyptus botryoides	Bangalay	18-25m	Large	78m2	Endemic	Evergreen	Y	Y		Y			40-60m3	
Eucalyptus crebra	Narrow-leaved Ironbark	20-25m	Large	175m2	Endemic	Evergreen	Y	Y					40-60m3	
Eucalyptus elata	River Peppermint	20-25m	Large	175m2	Endemic	Evergreen	Y	Y					40-60m3	
Eucalyptus eugenioides	Thin-leaved Stringybark	20-25m	Large	175m2	Endemic	Evergreen	Y	Y					40-60m3	
Eucalyptus fibrosa	Broad-leaved Ironbark	20-25m	Large	175m2	Endemic	Evergreen	Y	Y					40-60m3	
Eucalyptus longifolia	Woolybutt	20-25m	Large	175m2	Endemic	Evergreen	Y	Y					40-60m3	
Eucalyptus microcorys	Tallowood	20-25m	Large	175m2	Native	Evergreen	Y			Y			40-60m3	
Eucalyptus moluccana	Grey Box	20-25m	Large	175m2	Endemic	Evergreen	Y	Y					40-60m3	
Eucalyptus parramattensis	Parramatta Red Gum	20-25m	Large	175m2	Endemic	Evergreen	Y	Y					40-60m3	
Eucalyptus paniculata	Grey Ironbark	20-25m	Large	175m2	Endemic	Evergreen	Y	Y		Y			40-60m3	
Eucalyptus sideroxylon	Mugga Ironbark	20-25m	Large	175m2	Endemic	Evergreen	Y	Y		Y			40-60m3	
Eucalyptus tereticornis	Forest Red Gum	20-25m	Large	175m2	Endemic	Evergreen	Y	Y		Y			40-60m3	
Ficus rubiginosa	Port Jackson Fig	15-20m	Large	175m2	Endemic	Evergreen	Y	Y					40-60m3	
Liriodendron tulipifera	Tulip Tree	15-20m	Large	175m2	Exotic	Deciduous	Y		Y	Y			40-60m3	
Platanus x acerifolia 'Bloodgood'	London Plane**	18-25m	Large	175m2	Exotic	Deciduous	Y						40-60m3	Climate, allergies issues - very targeted use only

TREE PLANTING

\*\* = Limited and specific ongoing uses only - minimise general usage # = Only use small trees within parks when larger trees are specifically not suitable

LIVERPOOL CITY COUNCIL TREE MANAGEMENT TECHNICAL GUIDELINES 61
TREE PLANTING

		otential Height	ltimate Size Clas	ypical Ultimate anopy Extent Canopy Cover)	ative/ Exotic	vergreen/ eciduous	arks	ushland /Ripariaı	treets Urban	treets General	nder Wires	ivasiveness Alert	uideline Soil olume equirement	
Species	Common Name	18-25m	⊃ Large	175m2	Z	<u>ش ۵</u> Evergreen	ě. V		St	St	D	-	<u> </u>	Comment or Note
elatus	Pine		5-											
Quercus acutissima	Sawtooth Oak	18-25m	Large	175m2	Exotic	Deciduous	Y						40-60m3	Round hard fruits-not in high pedestrian areas
Quercus canariensis	Algerian Oak	18-25m	Large	175m2	Exotic	Deciduous	Y						40-60m3	Round hard fruits-not in high pedestrian areas
Quercus cerris	Turkey Oak	18-25m	Large	175m2	Exotic	Deciduous	Y			Y			40-60m3	Round hard fruits-not in high pedestrian areas
Quercus coccinea	Scarlet Oak	18-25m	Large	175m2	Exotic	Deciduous	Y			Y			40-60m3	Round hard fruits-not in high pedestrian areas
Quercus phellos	Willow Oak	18-25m	Large	175m2	Exotic	Deciduous	Y		Y	Y			40-60m3	Round hard fruits-not in high pedestrian areas
Quercus rubra	Red Oak	18-25m	Large	175m2	Exotic	Deciduous	Y			Y			40-60m3	Round hard fruits-not in high pedestrian areas
Syncarpia glomulifera	Turpentine	18-25m	Large	175m2	Endemic	Deciduous	Y	Y		Y			40-60m3	Round hard fruits-not in high pedestrian areas
Ulmus parvifolia 'Todd'	Chinese Elm	10-12m	Large	175m2	Exotic	Deciduous	Y		Y	Y			40-60m3	Ensure true cultivar - this is a sterile variety
MEDIUM T	REES													
Acacia implexa	Hickory Wattle	10-15m	Medium	78m2	Endemic	Evergreen	Y	Y					25-35m3	
Acacia melanoxylon	Blackwood	10-15m	Medium	78m2	Endemic	Evergreen	Y	Y		Y			25-35m3	
Acmena smithii	Creek Lilly-Pilly	10-15m	Medium	78m2	Endemic	Evergreen	Y	Y	Y	Y			25-35m3	Climate - targeted use only with adequate water
Alpitonia excelsa	Red Ash	10-15m	Medium	78m2	Endemic	Evergreen	Y	Y		Y			25-35m3	
Angophora bakerii	Narrow-leaved Apple	10-15m	Medium	78m2	Endemic	Evergreen	Y	Y					25-35m3	
Caesalpinia ferrea	Leopardwood	10-15m	Medium	78m2	Exotic	Deciduous	Y		Y	Y			25-35m3	Avoid frost prone areas
Celtis australis**	Southern Hackberry	10-15m	Medium	78m2	Exotic	Deciduous	Y		Y	Y		Y	25-35m3	
Corymbia eximia	Yellow Bloodwood	10-18m	Medium	78m2	Endemic	Evergreen	Y	Y	Y	Y			25-35m3	
Corymbia gummifera	Red Bloodwood	10-18m	Medium	78m2	Endemic	Evergreen	Y	Y		Y			25-35m3	
Eucalyptus haemastoma	Scribbly Gum	10-15m	Medium	78m2	Endemic	Evergreen	Y	Y					25-35m3	
Eucalyptus racemosa	Hard-leaved Scribbly Gum	10-15m	Medium	78m2	Endemic	Evergreen	Y	Y					25-35m3	

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Constant line	Comments Name	otential Height	lltimate Size Class	ypical Ultimate anopy Extent Canopy Cover)	lative/ Exotic	vergreen/ beciduous	arks	ushland /Riparian	treets Urban	treets General	Inder Wires	wasiveness Alert	uideline Soil olume equirement	CN.
Eucalyptus punctata	Grey Gum	18-25m	Medium	78m2	Endemic	Evergreen	Y	Y	S	Y		4	25-35m3	Comment or Note
Eucalyptus robusta	Swamp Mahogany	10-15m	Medium	78m2	Endemic	Evergreen	Y	Y		Y			25-35m3	
Flindersia australis	Crows Ash	15-20m	Medium	78m2	Native	Evergreen	Y		Y	Y			25-35m3	
Fraxinus pennsylvanica 'Urbanite or Cimmaron'	Red Ash	12-18m	Medium	78m2	Exotic	Deciduous	Y			Y			25-35m3	
Glochidion ferdinandi	Cheese Tree	8-12m	Medium	78m2	Endemic	Evergreen	Y	Y	Y	Y			25-35m3	
Harpullia pendula	Tulipwood	8-12m	Medium	78m2	Native	Evergreen	Y		Y	Y			25-35m3	
Jacaranda mimosifolia	Jacaranda	10-15m	Medium	78m2	Exotic	Deciduous	Y		Y	Y		Y	25-35m3	
Koelreutaria bipinnata	Chinese Rain Tree	10-15m	Medium	78m2	Exotic	Deciduous	Y		Y	Y		Y	25-35m3	
Lophostemon confertus	Brush Box	20-25m	Medium	78m2	Native	Evergreen	Y		Y	Y			25-35m3	
Melaleuca leucadendra	Weeping Paperbark	15-18m	Medium	78m2	Native	Evergreen	Y			Y			25-35m3	
Melaleuca quinquinervia	Broad-Leaf Paperbark	18-20m	Medium	78m2	Endemic	Evergreen	Y	Y		Y			25-35m3	
Nyssa sylvatica	Black Tupelo	8-12m	Medium	78m2	Exotic	Deciduous	Y		Y	Y			25-35m3	
Pyrus nivalis	Snow Pear	8-12m	Medium	78m2	Exotic	Deciduous	Y		Y	Y			25-35m3	
Pyrus ussuriensis	Macnhurian Pear	8-12m	Medium	78m2	Exotic	Deciduous	Y		Y	Y			25-35m3	
Quercus ilex	Holm Oak	12-15m	Medium	78m2	Exotic	Evergreen	Y			Y			25-35m3	Round hard fruits-not in high pedestrian areas
Syzygium paniculatum	Brush Cherry	8-12m	Medium	78m2	Native	Evergreen	Y			Y			25-35m3	
Waterhousea floribunda 'Green Avenue'	Weeping Lilly Pilly	18-25m	Medium	78m2	Native	Evergreen	Y		Y	Y			25-35m3	
Zelkova serrata 'Green Vase'	Japanese Zelkova	10-12m	Medium	78m2	Exotic	Deciduous	Y		Y	Y			25-35m3	

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Species	Common Name	Potential Height	Ultimate Size Class	Typical Ultimate Canopy Extent (Canopy Cover)	Native/ Exotic	Evergreen/ Deciduous	Parks	Bushland /Riparian	Streets Urban	Streets General	Under Wires	Invasiveness Alert	Guideline Soil Volume Requirement	Comment or Note
SMALL TRE	ES													
Acacia binervia	Coastal Myall	8-12m	Small	38m2	Endemic	Evergreen	Y#	Y					10-25m3	
Acer buergerianum	Trident Maple	8-12m	Small	38m2	Exotic	Deciduous	Y#		Y	Y		Y	10-25m3	
Backhousia citriodora	Lemon-scented Myrtle	7-10m	Small	38m2	Native	Evergreen	Y#		Y	Y	Y		10-25m3	
Brachychiton populneus	Kurrajong	7-10m	Small	38m2	Native	Evergreen	Y#			Y			10-25m3	
Buckinghamia celsissima	lvory Curl Flower	7-10m	Small	38m2	Native	Evergreen	Y#		Y	Y			10-25m3	
Callistemon viminalis cv.	Bottlebrush	7-10m	Small	38m2	Native	Evergreen	Y#		Y	Y	Y		10-25m3	
Camellia sasanqua cv.	Camellia	6-8m	Small	38m2	Exotic	Evergreen	Y#			Y	Y		10-25m3	
Cupaniopsis anacardioides	Tuckeroo	8-15m	Small	38m2	Endemic	Evergreen	Y#	Y	Y	Y			10-25m3	
Elaeocarpus eumundi	Eumundi Quondong	10-20m	Small	38m2	Native	Evergreen	Y#		Y	Y			10-25m3	
Gordonia axillaris	Gordonia	5-8m	Small	38m2	Exotic	Evergreen	Y#			Y	Y		10-25m3	
Guioa semiglauca	Wild Quince	8-10m	Small	38m2	Native	Evergreen	Y#		Y	Y			10-25m3	
Lagerstroemia indica x L. fauriei cvs.	Crepe Myrtle	8-10m	Small	38m2	Exotic	Deciduous	Y#		Y	Y	Y		10-25m3	
Livistona australis	Cabbage Tree Palm	15-20m	Small	38m2	Endemic	Palm	Y#	Y	Y				5-10m3	Palm - good for very restricted areas
Magnolia grandiflora 'Exmouth'	Bull-bay Magnolia	12-15m	Small	38m2	Exotic	Evergreen	Y#		Y	Y			10-25m3	Climate - targeted use only with adequate water
Magnolia grandiflora 'Little Gem'	Bull-bay Magnolia	5-8m	Small	38m2	Exotic	Evergreen	Y#		Y	Y	Y		10-25m3	Climate - targeted use only with adequate water
Melaleuca decora	White Feather Honeymyrtle	8-10m	Small	38m2	Endemic	Evergreen	Y#	Y		Y	Y		10-25m3	
Melaleuca linariifolia	Snow in Summer	8-10m	Small	38m2	Endemic	Evergreen	Y#	Y		Y			10-25m3	
Melaleuca styphelioides	Prickly Paperbark	8-10m	Small	38m2	Endemic	Evergreen	Y#	Y		Y			10-25m3	
Pyrus calleryana 'Chanticleer'	Callery Pear	6-8m	Small	38m2	Exotic	Deciduous	Y#		Y	Y	Y	Y	10-25m3	
Syzygium leuhmannii	Riberry	8-12m	Small	38m2	Native	Evergreen	Y#						10-25m3	

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Species	Common Name	Potential Height	Ultimate Size Class	Typical Ultimate Canopy Extent (Canopy Cover)	Native/ Exotic	Evergreen/ Deciduous	Parks	Bushland /Riparian	Streets Urban	Streets General	Under Wires	Invasiveness Alert	Guideline Soil Volume Requirement	Comment or Note
Tristaniopsis laurina	Water Gum	7-10m	Small	38m2	Native	Evergreen	Y#		Y	Y			10-25m3	
Tristaniopsis laurina 'Luscious'	Glossy-Leaved Water Gum	6-8m	Small	38m2	Native	Evergreen	Y#		Y	Y	Y		10-25m3	
Viburnum odoratissimum	Sweet Viburnum	6-8m	Small	38m2	Exotic	Evergreen	Y#			Y	Y		10-25m3	
Photinia x fraseri 'Robusta'	Red Photinia	6-8m	Small	38m2	Exotic	Evergreen	Y#			Y	Y		10-25m3	
Washingtonia filifera	Desert Fan Palm	20-25m	Small	38m2	Exotic	Palm	Y#						5-10m3	Palm - good for very restricted areas
Washingtonia robusta	Mexican Fan Palm	20-25m	Small	38m2	Exotic	Palm	Y#						5-10m3	Palm - good for very restricted areas
Xylosma senticosum	Xylosma	6-10m	Small	38m2	Exotic	Evergreen	Y#		Y	Y	Y		10-25m3	

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Figure 54: A wide variety of native and exotic trees are required throughout our urban areas. We also need to be utilising trees that are more likely to survive and flourish in our changing climate (Source: Arterra)



#### Tree Planting and Selection Species Selection

#### Edible Fruit Trees

The request for Council to plant edible fruiting trees often arises, particularly in built up urban areas. This is particularly prevalent where residential allotments are small and private open space is very limited or confined to courtyards or balconies. There may also be great cultural desires to plant trees such Olive Trees.

Whilst fruit trees can be highly desirable, they are not generally appropriate for use as urban street or park trees due to a range of factors which are outlined below. Council promotes the planting of fruiting trees within private gardens and courtyards or within specific public areas like 'community gardens', where such planting is endorsed and highly applicable. Management obligations in these settings are also more clearly defined. Care will still be needed, however, to ensure fruiting trees do not invade our bushland and waterways or become weeds. Appropriate thought should also be given to not planting trees that pose an excessive nuisance to your neighbours.



Figure 55: Fruit trees have their place, but their placement and management needs to be carefully considered before using them as urban trees (Source: Arterra)

The main implications in using fruit trees as street or public domain trees are:

- A fruit tree is usually small growing and does not achieve our desired and endorsed urban tree canopy outcomes. They also tend to be relatively short lived compared to many other tree species that would otherwise be utilised. Often a fruit tree only has a productive life for production of fruit of 15 to 25 years before it is usually replaced in an orchard situation.
- Generally speaking, for a fruit tree to successfully grow and produce edible fruit they require very favourable growing conditions. Typically, urban trees face a much harsher and neglected growing environment than is suited for a fruit tree to grow, thrive and produce good fruit.
- The level of maintenance required for a fruit tree is much greater than many other species of trees. Most fruit trees need regular and expert pruning and fruit thinning to succeed. The onus of cleaning up spoiled fruit, spraying for pests and diseases, etc. and the ultimate responsibility and liability regarding the fruit is also unclear, and can lead to numerous legal complications. Community members who may undertake to diligently tend to such trees initially may also move away, and then maintenance falls back on Council.
- The financial cost involved to maintain and manage a fruit tree would ultimately be greater and would fall back to Council, even if residents initially offer to maintain such trees.

Ultimately the decision to plant a fruit tree will be determined by Council on a case-by-case basis, and only when the other overall objectives of the Tree Management Strategy are not compromised and canopy coverage in our streets or parks is already well catered.



Tree Planting and Selection Soil Volumes and Soil Quality

#### 3.4 Soil Volumes and Soil Quality

Tree growth is strongly influenced by soil fertility and soil structure, as it affects the movement of air, water and nutrients. Well-constructed and quality soil conditions function like a reservoir, enabling trees to accept, store and transmit water, nutrients and energy and provide room for roots to expand and propagate. (Carpani, 2016, Lindsey and Bassuk, 1991)

Tree roots typically grow in a shallow and wide plate-like arrangement (Refer Figure 17 and 18). They do this to maintain appropriate access to water, nutrients and most importantly soil oxygen. It is therefore more appropriate to provide wide and shallow rooting areas for all new trees. Tree pits with depths greater than 1.2 metres will typically be a waste of resources as the tree will rarely access soil volumes at these lower depths. This is particularly relevant for the soils associated with Liverpool as the ability to achieve soil depths without excessive excavation are limited. Tree pit design shall typically be required to achieve the minimum soil volumes specifies below and have available minimum soil depths of ideally 0.8 metres. The typical maximum depth of soil that should be calculated and provided is 1.2 metre, unless very specific considerations are required. The typical methods to achieve urban tree soil volumes include such systems as:

- Providing larger open soil areas such as grass or garden areas immediately surrounding the new tree.
- Vaulted soil pit design where pavements surrounding the trees are suspended just above the tree pit soils via suspended and reinforced concrete sub-pavements and piers and/or beams.
- Structurally supportive systems such as proprietary reinforcing systems like 'MastaVault', 'Strata Vault' and 'Strata Cells'.
- Structurally supportive soils (specifically designed and manufactured aggregate and soil mixes that provide a soil matrix capable of supporting pavements and loads while still providing aerated spaces for root development).

The opportunity exists for these systems to be utilised, where necessary during any detailed design for new tree planting. Regardless of system, any new trees should ideally be located within designated gardens or planting areas with sufficient space around the base of the trunks to allow for the proper ultimate expansion of the trunk, root flare and its structural root zones. Trees should typically be planted at least 1.5 - 2.0 metres away from any walls, buildings or pavement edges, and even further for larger trees. In existing street contexts this may need to be relaxed to 0.7 metres.



Figure 56: Numerous methods are now available for integrating trees and their necessary soil volumes within urban environments while still allowing pavements and roads to continue successfully above. The above illustrates a proprietary system, Strata Vault by Citygreen, being used at Barangaroo Sydney. (Source: Citygreen)







Figure 57: Numerous methods are now available for integrating trees and the necessary soil volumes within urban environments while still allowing pavements and roads to continue successfully above. The above illustrates results of providing excellent soil conditions throughout this area using a proprietary structural soil system below pavements at Barangaroo Sydney. (Source:Arterra)



Tree Planting and Selection Soil Volumes and Soil Quality



Figure 58: Despite being unseen, adequate soil volumes and soil quality usually result in much healthier and resilient trees for the longer term . (Source: Arterra)



Figure 59: Examples above of the extensive soil resources provided beneath the final pavements for the trees installed at Chatswood Mall in 2009 which has resulted in exceptionally successful growth. (Source: Arterra)



Figure 60: Numerous methods are now available of integrating trees and their necessary soil volumes within urban environments while still allowing pavements and roads to continue successfully above. With nearly 70 m3 of soil for each tree the growth, health and resilience of the trees is clear to see. (Source: Arterra)



#### Tree Planting and Selection Soil Volumes and Soil Quality

If planted within a paved area, the tree should be planted within a well-designed, properly prepared and designated 'tree pit' with sufficient surrounding soil volumes and subsoil drainage to prevent excessive infrastructure damage or premature tree failure and poor condition in the future. When planting new trees within pavement areas or restricted areas, the soil volume should be to sufficient to enable the tree to reach its mature size in a healthy and full state. To survive indefinitely a mature tree requires a minimum of 0.6 cubic metres of soil for every square metre of the mature trees projected canopy area.

As a guide, for trees that are likely to achieve the following canopy spreads they should be provided with the following soil volumes.

- 4 metres spread needs approximately 8-10 cubic metres of soil.
- 6 metres spread needs approximately 20-25 cubic metres of soil.
- 8 metres spread needs approximately 30-40 cubic metres of soil.
- 10 metres spread needs approximately 50-70 cubic metres of soil.
- 20 metres spread needs approximately 180-200 cubic metres of soil.

The above guidance is within a normal street, plaza or landscape setting. The needs per tree can be marginally reduced if the trees can share soil volumes with other adjoining trees or if the soil is subject to regular and permanent irrigation. In order to provide these volumes it will be very necessary to consider the following strategies highlighted previously.

- Use of expanded sized tree pits / planting areas.
- Use of structural soil systems (structural soils or plastic support mechanisms).
- Use of 'vaulted' soil pits with pavements bridging over the root zones.

An important consideration for Liverpool is the existing site constraints where heavy clay soils or compacted and altered urban sub-soils may radically inhibit tree root development, putting further emphasis on the importance of providing adequate soil volumes at the time of design and planting. For example, the above adherence to soil volumes becomes much more pertinent in areas where the trees are located over rock, buried structures or on raised on-structure podiums or where other major infrastructure or building basements will inevitably inhibit the available rooting volume. It is also critical that all new trees are intsalled at the correct depths with any new soil and mulch carefully placed and allowing the top of the pre-existing root flare to just remain visible.

For trees planted within grassed areas, the base of the trunks should be surrounded with a minimum 3 metre diameter of recycled hardwood coarsely chipped mulch. This prevents the otherwise avoidable impacts to the trunk and root flare from mower and line trimmer damage. It is important the mulch is not too deep and is of a free draining nature. Excessively thick mulches or very fine organic mulches can become hydrophobic and actually prevent water from reaching the soil zone or introduce unwanted pathogens to the soil and tree.



Figure 61: Apart from suspended pavements or proprietary plastic products, another common solution is the use of structurally gap-graded soils that support pavements while leaving spaces for roots to grow in a finer soil matrix between the coarse aggregate. (Source: Arterra)



Tree Planting and Selection Planting Positions and Restrictions



Figure 62: Planting a tree correctly is important to its long term success. It must be well chosen, well positioned and well cared for in its first few years. (Source Liverpool City Council)

# 3.5 Planting Size, Positions and Restrictions

Where should our trees be positioned? When finally placing the tree the people installing it need to look up, look down, and look around. Is the tree appropriately positioned with regard to all the surrounding constraints? This must particularly consider the ultimate size of the tree and the likelihood it will be growing and increasing its size for many decades. It is often far too easy to forget about the ultimate size of the tree, its trunk and roots will attain.

Trees must be correctly positioned with regard to existing or proposed infrastructure. When planting a tree within the public domain consideration shall be given to the distance the tree is from:

- road kerbs, crossings, intersections and edging;
- edge of pathways and cycleways;
- playground apparatus and the future climbability of the tree;
- underground services and pits, including irrigation and power;
- light poles, lights and CCTV cameras;
- nearby buildings, shelters and awnings;
- gates and the required clearance for gate opening;
- important road or approved business signage;
- building openings, solar collectors and digital receivers;
- fences and the future climbability of the tree; and
- existing adjoining trees or other future proposed trees.

Nursery stock for planting in any public area (by Council or private developers) shall meet AS2303 Tree stock for landscape and follow the following size guidelines.

Table 4 - Sizes - Parks and General Urban Areas								
Container Volume	Min. Supply Height (m)	Clear trunk height (m)	Comment / Application					
<150mm	0.3	n/a	Well protected areas in parks (mass planting only)					
5 Litre	0.5	n/a	Well protected areas in parks (mass planting or when species difficult to acquire)					
15-25 Litre	0.7	n/a	Special use only. Must be pre-approved					
45 Litre	1.5 - 2.0	0.8	Typical minimum size for quiet residential streets or specimens in parks					
75 Litre	1.8 - 2.4	1.2	Preferred size for parks and existing local streets					
100 Litre	2.0 - 2.4	1.5	Minimum for new local streets and urban streets and district or regional parks					
200 Litre	3.0 - 3.5	1.5	Business districts and near any major intersections					
400 Litre	5.5	2.0	Preferred for major plazas and streets within Liverpool City Centre					

## Tree Planting and Selection **Planting Positions and Restrictions**

There are many limitations to the positioning of street trees on verges and immediately behind street kerbs. Distances from infrastructure elements such as intersections, pedestrian crossings, light and electricity poles, stormwater inlets, underground service pits and bus stops are important consideration when determining final planting locations. Typically this will require individual site assessment and will be assessed and determined on a case by case basis.

#### **Typical Street Tree Spacing**

It is important to not over plant or plant trees too closely together. This can often result in a very malformed tree or suppressed tree growth. It is often far better to plant trees with regard to their ultimate sizes and not have them over-compete for limited available soil and resources.

Avoid over planting for short term or instant effects. A measured approach to planting should always be adopted to allow future trees to mature with full and symmetrical canopies wherever possible. This generally makes the trees easier to manage in the long term, with better health and the ability to replace them more easily when the time comes. Such forethought gives the trees greater potential to find adequate resources rather than competing with each other, above and below ground.

Taking into account other relevant clearance requirements, urban trees, when planted in groups or as formal or informal rows are to be typically planted as follows:

- small trees spaced at a minimum of 7 to 10 metre intervals;
- medium trees spaced at a minimum of 10 to 15 metre intervals; and
- large trees spaced at a minimum of 15 to 20 metre intervals.

Exceptions to these requirements may be warranted and considered for specific hedge or screen planting requirements or for drainage corridor or embankment stabilisation projects.

#### Sight Lines and Distances from Infrastructure

It is important to identify existing or proposed road elements and infrastructure when placing trees within a street. Acceptable clearances and sight lines to intersections, signs, light poles, crossings and other road elements should be maintained. The following table outlines the standards that Council will typically apply with regard to tree placement in road reserves. These dimensions are for typical streets and may need to be increased depending on the design speed of the streets and traffic volumes.

The following tables outline the minimum standards that will typically be applied for all new tree planting, as well as for any self sown seedlings that may inadvertently occur.

Table 5 - Minimum Planting Clearances - Parks and General Urban Areas					
Layout, Item or Consideration	Typical minimum distances or other requirement				
Major Services & Stormwater Inlet Pits - distance from nearest edge of pit structure	2.0m				
Minor Infrastructure Pits (eg. irrigation and water valves etc.) - distance from nearest edge of pit structure	1.2m				
Masonry Buildings - distance from nearest wall or footing	3.0m				
Lightweight / Non-Masonry Buildings or shelters - distance from nearest wall or footing	2.0m				
Building Awnings & Canopies – where they project out from the structures. Distance from overhead structures taken as the vertical alignment projected to the ground and the centre of the trunk	1.0m				
Pathways – distance from nearest edge of path to the centre of the trunk	2.0m				
Inflexible Kerbs and Edges – distance from nearest point of edging to the centre of the trunk	1.0m				
Playground Equipment and required fall zones (including extent of any moveable items) – distance from apparatus to the centre of the trunk	1.5m				
Fencing – distance from fence to the centre of the trunk	1.5m				
Fencing – distance from fence to the centre of the trunk if clear stem of 1.8 metres is achieved at time of planting and fence is not a masonry fence with below ground footings	0.5m				
Gate swings and opening – distance from any projected and required gate swing path to the centre of the trunk	0.8m				
Light poles/ CCTV – distance from pole to the centre of the trunk	3.0m				
Signs – distance from pole to the centre of the trunk on the visible side of the sign	2.0m				
Existing Mature Trees – with low and overhanging canopy	New trees not planted under canopy of existing trees, particularly if they are low or dense.				
Adjacent to new or proposed trees – distance between centre of the trunks for row or avenue planting	Not less than 4m for small trees Not less than 8m for medium sized trees Not less than 15m for large trees				



#### **Tree Planting and Selection Planting Positions and Restrictions**

Council may consider alterations to these dimensions when the placement of the tree can be shown to not adversely affect safety or the future integrity of nearby infrastructure. Considerations shall also be given to pre-existing street trees and site conditions. Council will not normally remove a mature tree that has historically been planted within these tolerances unless the impacts of retaining the tree are found to be clearly unacceptable and can not be otherwise mitigated through appropriate pruning or infrastructure relocation.

Where possible, street trees should be located at least 3m (or 5m on 80km/h roads) from the edge of nearby travel lanes, but only when the verge is currently wide enough for this to reasonably occur. The width of roadside opportunities for parking or otherwise marked travel lanes can be taken into consideration when assessing this distance and does not necessarily mean the tree needs to be 3m from the edge of the "kerb". This distance is also a measurement to the centre of the new tree and not to the estimated edge of future trunk growth.

Table 6 - Tree Placement Guidelines Within Streets						
Road and Layout Element	Typical Street Tree Planting Clearance					
Street intersection - distance from projected line of the intersecting kerb line on approach side	10m (on approach) 6m (on departure)					
Stormwater inlet pit - distance from nearest edge of pit structure	2m					
Driveway - distance from driveway edge on approach side	3m					
Driveway - distance from driveway edge on non-approach side	2m					
Traffic Lights - distance from signal pole on approach side	> 10m					
Pedestrian crossings - distance from outer edge of crossing on either side	10m (on approach) 7m (on departure)					
Street lighting pole - minimum distance from the pole to centre of tree trunk (unless there are other light sources to consider)	3m					
Cycle ways - clearance from edge of cycleway path to centre of tree trunk	0.5m					

#### **Bus Stops**

Clearances and setbacks for trees near bus stops are to be determined on a case by case basis. When a bus stop is proposed by other authorities to be installed in a street that currently has not had a bus stop or a bus stop is proposed to be relocated, the existing street trees should be considered as a material constraint.  $\bar{\mathsf{E}}\mathsf{x}\mathsf{isting}$  street trees should not be unreasonably removed to facilitate a new bus stop unless all other possible alternatives have been explored. Where a bus stop is positioned adjacent to an existing street tree, the impacts to the trees roots and canopy shall be considered and minimised to maintain the tree's health and vitality.



Figure 63: Tree planting is a crucial step we must get right in our overall tree management strategy. (Source: Liverpool City Council)



Figure 64: Tree positions with streets must consider the practical aspects of their surroundings, like bus stops and pedestrian crossings. (Source: Arterra)

3.5

## Tree Planting and Selection Planting Positions and Restrictions

Table 7 - Recommended 'B	est Practice' Tree Planting Metho	odology
ltem	Timing	Comment
Excavate planting hole to optimum depths and diameter	At the time of delivery of stock or before, depending on scale of planting and size of hole required	Depth shall typically be at least the depth of the supplied container plus 100mm. The diameter shall be at least 3 x times the diameter of the supplied container diameter. This may need to be varied, however, for sites that have identified contamination or archaeological impacts or constraints.
Assess and check drainage in planting hole or area	At the time of delivery of stock or before, depending on scale of planting and size of hole required	Ensure free draining and rectify through appropriate means if drainage is impeded. Suspend planting operation if serious concerns are observed. Partially fill planting hole with water and observe infiltration rate.
Ensure safe handling of stock at delivery	At delivery and installation	Always lift by handles on bags or pots. Large trees are to be lifted by machines taking majority of weight via rootball. Avoid lifting by trunks at all times as this often causes injury. Avoid rough handling or relocating tree using the trunks or branches.
Water stock immediately upon delivery	At delivery and then daily until planting	Water directly on to the rootball using suitable soft spray nozzles and then water daily if the stock is not installed immediately.
Water stock well immediately prior to planting	Just prior to installation	Saturation of rootball should be achieved approximately 2-3 hours prior to planting
Prune rootball extremities	Just prior to installation or before backfilling for very large stock	'Shave' the entire sides and bottom of rootball by 10-15mm using a clean and very sharp spade or saw or knife to trim of any encircling roots and promote good root direction and division.
Plant the tree with appropriate 'North' orientation	At installation	North should be indicated by N or a paint mark line on the container of trees that are >45L
Plant at the correct depth and ensure trunk is vertical	At installation	Ensure rootball crown (top) is maintained at existing site soil levels or just above, particularly if drainage is in anyway compromised. Build up small pad of well consolidated site or imported soil under the rootball to prevent any settlement. Adjust levels of tree to ensure tree is planted in a balanced orientation and trunk is not leaning.
Backfill the planted tree	At installation	Backfill with appropriately firmed and consolidated layers of soil and in the correct profile of soils. Avoid deep burial of any rich organic matter or over compaction of the soils. Incorporate ameliorants as required and ensure rootball crown is not buried or covered over by backfill soils.
Water once installed	At installation	Ensure thorough watering of rootball and surrounding soil immediately after installation using a suitable soft spray nozzle. Irrigation to be installed if available.
Support the tree if required	At installation	Trees should not require staking but if the tree is not fully self supporting or exposure to extreme winds is likely, provide a temporary timber stake and loosely applied hessian strapping support as per standard planting details and specifications.
Establishment maintenance	24 months following installation	Apply regular watering, and slow release fertilising and formative pruning as per establishment maintenance procedures outlined.
Documentation and replacements	At installation and then every 12 months	Trees shall be immediately entered into the Councils database of trees with their species, date of planting and supporting photographs. Damage or failures of trees to be recorded and appropriate replacements undertaken.



Tree Planting and Selection Tree Procurement and Quality

#### 3.6 Tree Procurement and Quality

Considerable effort can be wasted if new trees die shortly after planting, or if the tree is supplied in a substandard form or condition that may ultimately lead to its poor performance or the later development of serious structural defects and poor health. As outlined by authors such as Gilman (Gilman 2012), most tree defects that occur within mature trees were present and readily identifiable at the time the tree was initially planted. It is therefore essential that the tree and its roots be in optimal condition when it is delivered and planted.



Figure 65: Trees must be grown and delivered to achieve certain minimum standards. Sub-standard trees with obvious defects should never be accepted. (Source:Arterra)

An important aspect in the implementation of tree planting is in the planning and procurement of nursery stock. Implementing a 'forward-thinking' and pre-planned approach to plant procurement has numerous benefits, which include the following.

- Securing favourable contract growing prices.
- Ability to prepare and coordinate planting at optimum times of the year.
- Ability to purchase trees of the required species and cultivars.
- Ability to purchase trees of the required sizes and dimensions and formatively pruned to suit street tree, plaza or park installation.
- Assurance of the required quantities, including allowance for replacements when necessary.
- Ability to inspect and demand high quality stock, free of above and below ground defects.

In summary, wherever possible and reasonable all trees should be sourced and supplied as part of an advanced plant supply contract with one or more reputable commercial suppliers and they shall conform to the NATSPEC "Guide for assessing the quality of and purchasing of landscape trees" by Ross Clark 2003 and AS AS2303 – 2018 Tree Stock For Landscape Use. In short, substandard trees with obvious defects should never be accepted.



Figure 66: Well grown trees from the start can alleviate a lot of future issues. Most tree defects that occur within mature trees were present and readily identifiable at the time a tree was initially supplied and planted. (Source: Arterra)







Figure 67: We must plant more trees to achieve our long term objectives and create a beautiful, resilient and sustainable environment for our community. (Source: Arterra)



Tree Planting and Selection Tree Establishment, Staking and Protection

# 3.7 Tree Establishment, Staking and Protection

The maintenance of planted trees shall commence immediately following their installation, and then be continued for a period of no less than twenty four (24) months to ensure their successful establishment within Council managed areas. After this period the maintenance of the tree shall fall into the general requirements outlined in Section 4.0 Tree Maintenance and Management.

The tree establishment maintenance shall typically be focused on the following principles.

- Maintenance and monitoring of any appropriate protection methods and staking with removal of any stakes or temporary tree guards as soon as the tree is satisfactorily established and unlikely to be subject to further foreseeable damage.
- For smaller trees appropriate vermin control (particularly for rabbits or similar) may need to be implemented, but again this should be removed as soon as practicable, and ideally recycled or reused for next rounds of planting.
- All newly planted trees should be regularly assessed for their watering requirements. Appropriate supplementary watering applied whenever necessary during the first 24 months will help ensure the trees continue to thrive, despite potential adverse weather conditions. Care should be exercised by staff and contractors to ensure trees are not over watered, which often presents with similar symptoms to lack of water. Another symptom that often presents as water deficiency is the root rot disease, Phytophthora. If tree failure is not readily explained by under or over watering the manager should undertake a test with the Royal Botanic Garden Sydney Plant Pathology Department or other appropriate testing facility. It is increasingly common that soil around plants from even reputable nurseries may contain Phytophthora disease prior to delivery.

- An appropriate slow release fertiliser shall be applied prior to the completion of the establishment maintenance period to ensure the surrounding soil is provided with all essential nutrients and trace elements prior to transferring to general ongoing tree maintenance regimes.
- Assess and undertake any formative or clearance pruning. If trees are appropriately grown and sourced from reputable nurseries, the need for formative pruning should be relatively minimal. Within the first 24 months following planting, however, each tree should be inspected at least once by an AQF Level 5 Arborist and formative pruning carried out, as required. This will correct any visible growth defects, poor branch structures and/or start to guide appropriate long term clearances to vehicles, pedestrians and to other assets. If this is done when pruning wounds are less than 50mm in diameter, the young tree will usually quickly compensate and seal the wounds, and is far preferable to allowing serious defects to develop within a more mature tree.
- Replace any failed, vandalised or otherwise damaged trees in a timely fashion.



Figure 68: Creating a substantial mulched area around our trees can alleviate a lot of maintenance issues and usually promotes good and healthy tree growth. (Source: Arterra)

 ITEM 03
 Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management Technical Guidelines)

 Attachment 4
 Draft LCC Tree Management Technical Guidelines - May 2024

This section of the Guidelines establishes the requirements and procedures that Council apply when managing and maintaining our existing trees and future trees that are planted throughout our community.









# TREE MAINTENANCE

#### 4.1 Overview

Trees are one of the most difficult and complex elements to manage in an urban environment. They are living and dynamic items that respond to, and interact with their surrounding environment.

Inappropriate maintenance such as improper pruning can also impact the trees, leading to increased risks of failure, inappropriate reductions of all-important foliage and increased risk of pathogen attack or decay. Lack of care and control of hygiene can also lead to the inadvertent spread or introduction of diseases.

Trees drop leaves, bark, fruit, cones, flowers and sometimes even branches. Trees offer habitat for birds and animals, that may also cause nuisance and unwanted mess. This is part of natural processes and part of a tree's living and growing. Just because a tree does these things, does not mean it is a problem or dangerous. We need to accept many of these things in return for the enormous environmental, aesthetic, social, heritage and economic benefits they provide.

In natural environments, trees can live, die and fail with little or no detrimental impact to humans. However, in more highly used and urban settings, trees need to be more proactively managed. Tree risks are not equal for all areas. Large trees, in close proximity to heavily used areas and in the declining stages of their life need far different care, monitoring and approaches than smaller trees in the middle of a large park or in a more natural area, that is rarely visited.

While tree maintenance is a necessity in an urban setting, if the tree is well planned for, well selected, well planted and established in its early years it should usually require only minimal ongoing maintenance. Every tree, however, will have a lifespan and at some point will need to be removed. We must remember, however, that not every tree within Liverpool has had the benefit of excellent planning, selection and planting. Therefore, we also need to manage trees that may exist within the LGA that may not be well positioned or the most appropriate species. Sometimes factors well outside of Council's control may also impact upon trees and require intervention.

The main tree maintenance activities that we will carry out are:

- management of identified unacceptable tree related risks to life and property;
- tree pruning for clearances, sight-lines, improvement of tree structure, or reduction of risks;
- tree removals due to risk, tree decline or management of undesirable environmental or heritage impacts;
- tree surround maintenance such as mulching, fertilising, soil improvement and occasional supplementary watering; and
- pest and disease monitoring, and where feasible and economically realistic, disease control.

The Liverpool City Council area covers a very large area and contains a large number of trees. We also have a very limited budget to maintain all of the Council trees and other facilities. The management of the tree assets, like other elements, has to be prioritised. We employ staff and contractors to manage our assets and have prepared detailed technical specifications for all types of asset maintenance, including tree maintenance.

Tree work shall be undertaken in line with the specifications included within this document. Importantly, part of Council's commitment includes the inspection and monitoring of most of the trees within our care and control. Over the coming years, all trees within the main urban areas and parks will be inspected and recorded. This will provide the Council with more accurate information regarding our current tree population and will fulfil Council's obligation to exercise a reasonable duty of care. It is intended this inspection regime will be ongoing, so that all Council's trees within urban and more heavily used areas are visually inspected for issues or defects, at least once every 3-5 years and where required, in some instances even more frequently.



Figure 69: Trees are a valuable asset and resource but they must be managed throughout their life to ensure they are not posing an unacceptable risks to our community. (Source: Arterra)



#### Tree Maintenance Managing Tree Related Risks

#### 4.2 Managing Tree Related Risks

Trees provide us with substantial benefits. They are also dynamic, living elements and potentially large structures. They will live, decline and die and therefore they may present a variety of risks throughout their life. We all accept a certain level of risk as part of our daily lives. The provision of 'no risk' is not a realistic prospect.

It is important to note that any tree can fail, even healthy trees, and particularly in extreme weather. This failure can be for a large variety of reasons, both natural and man-made. Defects in trees are not always visible. They may be internal, very high up or below the ground. Appropriately trained professionals can identify some defects and some symptoms and features that may relate to an increased likelihood of failure.

Council will inspect and monitor the trees within our urban areas and higher use parks and other actively used locations on a regular basis to fulfil our obligation to exercise a reasonable duty of care. The Council will not inspect or monitor trees on private property or in areas managed and controlled by other government authorities. The rigour and frequency of our tree inspections will be dictated by the:

- location and the level of use surrounding the tree(s);
- proximity to important structures or infrastructure;
- size of the tree(s); and
- the historical or environmental significance of the tree(s).

The basis of our tree risk management will be through the use and application of formally accepted tree risk assessment protocols.

These are tree-specific, systematic processes that provide information to help us make informed decisions that promote the safety of people and property while enhancing tree benefits, health, and longevity.

The assessment of tree risk currently adopted by the Council is the engagement (or direct employment) of appropriately trained professionals that are qualified in an internationally recognised tree risk rating system, being one of:

- the Quantified Tree Risk Assessment (QTRA) System;
- the International Society of Arboriculture's Tree Risk Assessment Qualification (TRAQ); or
- Valid Tree Risk Assessment system (VALID).



#### Tree Maintenance Managing Tree Related Risks

Tree risk management is not about precisely predicting or preventing tree failure. Tree risk management is about taking a systematic approach that broadly identifies tree related risks and then determining, using a uniform and repeatable method, the probability of a tree failure event and its likely consequence.

Trees with even a very high risk of failure may be completely acceptable in areas that are seldom visited. Conversely trees in very highly used areas may need to be actively managed or even removed to appropriately manage risk. The levels of acceptable risk may also be affected by the relative importance or significance of the tree. In some instances, for very important trees for example, we may tolerate an elevated level of risk.

In practical terms, it is Council's role to reasonably manage tree related risks to an 'acceptable' level. But often there can be a gross disproportion between the costs of undertaking risk mitigation compared to the actual 'risk of harm'. For example if the risk is very remote or the consequence of a failure is very minor it may be completely unreasonable to spend hundreds or even thousands of dollars to reduce the identified risk any further.

It is expected that Council staff, and also members of the wider community, will undertake passive assessment for tree related risks in all parts of the LGA, at all times. That is, our tree and park management staff, will typically note and then report on any visibly obvious tree risk features, as they go about daily routines. When these are noted, or reported to Council, these shall be dealt with via our more active and formalised risk assessment protocols.

Council tree management teams will normally focus on more active risk assessments. The frequency of inspections that will be undertaken by Council shall be using the following general guideline:

- For important trees with a previously identified elevated risk of harm, inspections shall be undertaken annually
- For trees in highly used areas or within 30 metres of significant property assets such as major playgrounds, historic structures, significant shelters or toilet facilities, and car parks, inspections shall be undertaken at least every 3 years
- For all other streets and parks, inspections shall be undertaken at least once every 5 years.

It is important to understand the 'costs' involved in tree risk mitigation are often not just a monetary measure. The impact of unnecessary pruning or removal of a significant tree must also be considered a 'cost'. Aging or vulnerable trees may not recover from extensive pruning works. As significant trees age and decline, and the level of risk from their failure becomes unacceptable (as determined by a recognised system), rather than pruning or removal, a more appropriate course of action may be to simply exclude public access from around the tree. This will remove the potential for harm and consequently lower the risks to acceptable levels.

Ultimately what is deemed an acceptable level of tree related risks will be impacted by a number of key variables.

- The significance of the tree (heritage, environmental, aesthetic).
- The location of the tree and the number and monetary value of potential targets (this could be people and cars per day, or the value of the assets under threat).
- The size, location and type of the hazard (the size of the part likely to fail and the direction in which it is likely to fail).
- The probability of the failure occurring at all and whether it may be weather affected. For example in some situations it may be highly unlikely for any people to be under a tree when it is raining heavily or a wild storm.
- The relative 'costs' and viability of risk reduction or mitigation measures. Costs are principally monetary or personal injury but we must also consider loss of heritage, habitat and amenity.

Each tree subject to inspections will be assessed on their specific needs and merits. Some of the risk mitigation measures that we may typically adopt include:

- More intensive or internal assessment of the tree such as aerial inspections, or special internal decay testing or static load testing.
- Selective pruning to remove the hazardous part.
- Complete removal of the tree depending upon the circumstances and the significance of the tree
- Installation of simple signage notifying people of the potential hazard and the conditions that may lead to increased risks (eg. high winds).
- Establishment of an informal or formal exclusion zone around the tree.
- Relocation of picnic, seating or play equipment.
- Closure of roads or parking areas to reduce the number of likely 'targets' in the event of tree failure.
- Artificial bracing, propping or reinforcing of the tree.

All of the above must consider the relative 'costs' and viability of target reductions or risk mitigation. We must also consider the loss of public access, accessibility, inconvenience or potential revenue that may be foregone.



#### Tree Maintenance Tree Roots and Infrastructure

#### 4.3 Tree Roots and Infrastructure

Tree roots can sometimes impact sewers, stormwater pipes or other building structures. It is important to establish the cause of the problem and who may be responsible for rectifying it.

If a tree is suspected to be causing notable damage to significant private structures it will typically be a requirement for the owner of the property to clearly establish that the tree is actually causing the damage and that the damage is significant and that continued and future damage cannot be overcome by any other reasonable and practical measures. A property owner is responsible for inspecting and maintaining all built structures on their land. Council does not inspect private properties for signs of damage.

In regard to the above, significant damage is a relative term, and will usually be assessed with respect to the likelihood of the need for repetitive repairs and the relative costs compared to the significance and value of the individual tree(s) concerned. For example repairs or replacement of very minor pavements or garden walls once every 15-20 years due to tree root growth would generally be considered acceptable. However, the replacement or repair of walls or pipes every 2-3 years near a tree that will continue to substantially increase in size would indicate that the tree is generally unsuitable for the location.



Figure 70: Roots can interact with our structures and other infrastructure may cause damage that may need to be addressed. Council will usually require clear evidence that it is actually the tree roots are primarily causing the issue and the damage that is claimed. (Source: Arterra)

Tree roots rarely cause major structural damage to buildings. This is because the footings of buildings are usually deep and substantial, and not easily moved or damaged by roots. Likewise, it is rare for a tree root to cause a crack and enter into a properly installed and well-maintained pipe. However, once a pipe has deteriorated or is damaged, roots from all different types of trees, plants and even grasses can grow into the pipe. Movements in the surrounding soil can cause joint failures or cracking which then causing moisture and nutrients to leak into the soil. Failure of junctions between PVC and terracotta pipes is also common. PVC pipe systems have fewer joins that are securely glued together and rarely fail. The most efficient way to prevent root damage to your services is to replace old terracotta pipes with new PVC or UPVC pipes. Upgrading essential infrastructure is an important part of owning a property.

It's also common for old, and even new, buildings to have fine cracks in cement rendering or plaster. These are known as settlement cracks and usually do not indicate a structural fault. They are not usually a cause for concern. Large or wide cracks (wider than 5mm) in the structural supporting walls of a building may indicate movement in the foundations of a building or other structural weakness. There are many possible causes of property damage. Many older properties show cracks and signs of damage due to the construction techniques and materials used at the time they were built. Clay soils common in Liverpool can expand and contract in reaction to the amount of moisture in the soil. This is known as having reactive clay foundations. Inadequate compaction during construction or excess moisture in foundation soils can also cause subsidence and movement in buildings.

The removal of a tree is generally not considered justified when the damage is restricted to very minor structures such as unit paving, fencing, minor footpaths or driveways or due to old and deteriorating sewer or drainage lines where reasonable and practical repairs can be carried out. This is a principle largely upheld by the NSW Land and Environment Court.

#### What to do

What should you do if you think damage to your pipes or structure may be caused by a tree on Council land? Where possible you should expose the area, carry out any essential repairs in the case of leaking pipes, inform Council and ask us to investigate. If council-owned trees have caused the damage, you may be able to claim for the cost of the repairs. It is best if you undertake the following:

1. If concerned about structural cracks, the property owner should engage a structural engineer to assess the damage and advise of the likely cause. The engineer must base their assessment on evidence rather than just theoretical assumptions that the damage is caused by a tree. They should illustrate the damage and document the reasons or the evidence that clearly shows why they believe the Council owned tree is the cause of the damage. This may involve excavating within your

# TREE MAINTENANCE

#### Tree Maintenance Pest and Disease Control

property to locate and photograph roots and their proximity to the building or the significant structure. At this stage, the roots should not be severed or removed.

- 2. Obtain three written quotations for the necessary repairs.
- If the works require an excavation on a Council road or footpath, you will need to obtain a separate roadopening permit from the Council prior to undertaking the work.
- 4. Most importantly, notify Council of the scheduled works so that Council can arrange for an appropriate Council officer to inspect the exposed pipes, or proof of the root causing damage to footings, or structure, during the works. This will enable all parties to confirm if Council tree roots have caused the problem or if the pipe or other structure has been damaged or deteriorated for some other reason.
- 5. While on site, the Council officer will take photos to keep on record. You should also keep your own records of the damage, the investigations and repairs.
- 6. Carry out any necessary repair work to avoid any further damage and/or reduce the hazard. This does not mean the Council has accepted any liability for damages. It is the property owner's decision to carry out the repairs.
- 7. If the above investigations reveal the damage has been caused by Council owned trees, you may make a formal claim for the cost of repairs. Include all the above information in your claim and address it to the Risk Management Unit at Liverpool City Council. Council will then assess our liability and make a determination as to whether the Council can assist you with the cost of the repairs.

#### Why Council Takes This Approach?

This approach is required for insurance and governance purposes because the works relate to a private asset and may involve spending of public funds on the repair. It is important to have very clear evidence for any insurance claim, particularly if there is a chance that the initial damage may have been the result of other causes. The clearer the evidence provided, the greater the likelihood of a positive result in any claim.

#### 4.4 Pest and Disease Control

Pests and diseases can pose a great risk to the health and longevity of our tree assets. Pest and disease threats are increasing and changing within our urban environments due to climate change, greater global trade, movement of people and gradual reductions of Australia's biosecurity measures.

Pest and disease control in public trees and parks and on a large scale can be challenging, costly, and in many circumstances, not even practical or feasible. Some diseases will also have no effective treatments. Where feasible, Council shall attempt to take appropriate preventative and corrective actions to ensure that pest activity and disease outbreaks do not pose a significant risk to our urban forest or impact on the visual quality or enjoyment of our area.

There are several known pests and diseases that have, and can affect the trees in Liverpool. As with much of Sydney, these include:

- Australian Honey Fungus (Armillaria luteobubalina)
- Plane Anthracnose (Apiognomonia veneta)
- Cuban Laurel Thrips (Gynaikothrips ficorum)
- Eucalypt / Grey Box Psyllid (Cardiaspina sp.)
- Fig Psyllid (*Mycopsylla fici*)
- Figleaf Beetle (Poneridia australis)
- Fusarium Wilt (Fusarium oxysporum)
- Painted Apple Moth (Teia anartoides)
- Pink Wax Scale (Ceroplastes rubens)
- White Rots (Phellinus sp.)
- Phytophthora dieback (Phytophthora cinnamomi)
- Sycamore Lace Bug (Corythucha ciliata)
- Winter Bronzing Bug (Thaumastocoris sp.)
- Myrtle Rust (Uredo rangelii)



Figure 71: In a changing climate there is often increased risk of pests. Many of our trees may become more susceptible to serious pests and disease outbreaks and we therefore need a resilient and diverse urban forest to prevent any devastating consequences. (Source: Arterra)

## Tree Maintenance Watering and Fertilisation

These diseases can have a devastating effect on tree populations. Overseas examples, such as Dutch Elm Disease and Emerald Ash Borer, illustrate how quickly entire tree populations can be all but wiped out. Analysis and ongoing monitoring of any major pests and diseases is a critical part of our tree management. The ways we will deal with pests and diseases include:

- Monitoring for pests and diseases on a continuous basis as part of regular tree inspections, our proactive maintenance program and any reactive tree maintenance works. Regular monitoring and timely intervention is critical to limiting impacts on the tree population. Treatments for pest and disease, if available, cost effective and safe to perform, shall be performed at the earliest opportunity after identification. The timing of treatment may be dependent on the nature of the pest, as some treatments will be best performed at certain stages of the pests life cycle.
- Maintaining existing trees and selecting new trees to create a diverse range of species thereby managing the inherent risk from pest and disease outbreak. The more diversification, the less risk of major tree and canopy cover loss from a major pest or disease event.
- Maintaining appropriate and healthy trees. Maintaining existing trees in as healthy state as possible and ensuring any new plantings are installed with best practice methods helps provide a resilient tree population. A tree's ability to cope with a pest or disease depends in large part on the environment in which it is growing. Some of our trees are growing in very tough environments. Coping with compacted soils, shade, wind, pollution, limited water, constricted root system and over pruning often makes it more difficult for trees to deal with pests and disease outbreaks.
- Reviewing any unexplained tree deaths. Typically we will submit suitable tissue and soil samples for analysis to an appropriate plant pathology laboratory so that we can record and understand the reason behind tree decline.
- Implementing appropriate hygiene protocols such as cleaning and sterilising of tools (cutting and digging tools) when moving from one tree to the next, and limiting opportunities for cross contamination via cuttings or soil movement between different areas, particularly if pest or disease has previously been recorded in that portion of the area.

#### Watering and Fertilisation 4.5 **Passive Irrigation & WSUD**

The twin challenges of modern-day stormwater management and climate resilience require our urban developments and tree management to depart from out-dated and traditional approaches and implement a new view on water infrastructure. The more that we embrace integrated stormwater management, the more we will have a cleaner, greener future where we are able to better manage risks, keep water costs low, and provide the widest possible range of environmental, economic and social benefits. It will also reduce our reliance on, and use of very valuable potable water. (Valderrama, 2018)

Water and plants are natural partners. Many natural systems rely on the intrinsic connections between plants and water. Plants require water for photosynthesis and growth, and without adequate water plants will die. Plants also contribute to the natural cycle of water through the landscape, as their roots absorb moisture from the soil and transpire it into the atmosphere. In doing so, they effect local humidity and temperature. (CoS-GSS, 2021)

Mutual benefits are gained from a more sustainable and integrated approach to water management. For example, recent stormwater studies conducted in Melbourne reveal that the integration of trees within 'rain gardens' has the potential to markedly increase the evapotranspiration of water from the 'rain gardens' and therefore further reduce volumes of stormwater runoff (Thom, 2020).

The design of all new streets, plazas, parks and urban renewal precincts must focus on using the local water as a resource to increase and sustain our greening initiatives Renewed efforts need to be placed on conserving, capturing and reusing water that would otherwise be collected and immediately discharged. Potential opportunities to enhance and reconnect water and green infrastructure exist at all scales, and include:

- diverting surface stormwater to green landscaped areas and trees whenever possible;
- using permeable pavements (where hard surfaces are necessary) to allow water to recharge ground water storage;
- local collection and storage of storm water for use in efficient landscape irrigation and passive irrigation;
- localised treatment of wastewater and re-distribution for use in private and public greening;
- promoting the greening of previously hard surfaces, including available space within roadways and rooftops;
- ensuring the use of 'smart' irrigation systems that are linked to soil moisture, prevailing weather and other sensors to avoid wastage; and
- careful species selection that balances drought and heat tolerance, together with the need for transpiration and shading during hot days and heatwaves.

#### Tree Maintenance Watering and Fertilisation

Investing in a landscape driven approach to sustainable water management can often cost less to construct, reduce the amount of impervious surfaces, better manage or eliminate stormwater runoff, and protect our fragile streams more effectively than conventional approaches. Inspired by nature, these predominantly vegetative systems also provide ancillary benefits that underground pipes and concrete channels do not, including:

- conserve water and embodied energy;
- reduce urban heat island effects and reducing thermal gains in our creeks and waterways;
- recharge groundwater supplies;
- create additional habitat and supporting biodiversity;
- buffer and reduce noise, sediments and other pollutants;
- improve human health and comfort;
- provide more adaptive, multi-use, attractive and resilient infrastructure; and
- make water and pollution more visible and re-educate people about waters use and benefits (Liptan, 2017).

Future street and park designs shall typically direct surface water and runoff, wherever technically possible, towards existing and new trees and other green infrastructure to passively irrigate the plants in an ever-warming climate.

#### **Fertilisation**

Given the size of the LGA and the numbers of trees being managed by Council, it is not considered practical to provide wide spread or ongoing application of fertilisers, or the like.

Similarly, many of our park and drainage corridor trees are native and well-adapted to surviving in the current soil conditions. Major soil chemistry abnormalities are not normally observed or expected. Where we need to manage important or significant trees, that may be showing unexplained signs of ill health we shall typically take a representative soil sample and have it tested by a reputable testing laboratory for any serious nutrient or other chemical imbalances. Where practical, we shall then implement the recommendations to improve the horticultural qualities of the soil through appropriate application of ameliorants immediately around the required tree(s).

For important trees that may be showing signs of acute stress or nutrient deficiency the following guidance is provided. Fertiliser shall typically be a quality and controlled release fertiliser applied at the recommended dosages. This will typically be less than 50 grams/m<sup>2</sup>. The use of soil wetting agents such as 'Wettasoil™', 'Saturate™', 'Chemwet™' or other approved alternatives may also be used in accordance with manufacturer's recommendations. This can be important to improve the water penetrating capacity of any hydrophobic or compacted soils.

For particularly stressed or injured trees the use of growth stimulants such as 'Auxinone™' by Barmac Industries at a rate of 10ml Auxinone™ mixed with 10 litres of water together with a soil wetting agent to the area around the tree root surfaces may be applied to trees in accordance with manufacturer's recommendations.



Figure 72: All vegetation needs water to grow and survive. We must continue to improve the way we support our trees and other vegetation through better use of passive irrigation and water sensitive urban designs that provides water to trees when it does rain. (Source: Arterra)



Tree Maintenance Tree Pruning

#### 4.6 Tree Pruning

#### **Pruning Standards**

Pruning should not be seen as an essential, normal or necessary tree activity for most trees and will generally not be required except for specific and identified reasons. Pruning has a direct impact on tree health, structure and viability. All pruning of live tissue results in a wound to the tree, which the tree will attempt to seal and compartmentalise. Incorrect pruning techniques can lead to decay and disease within the tree.

Pruning of the canopy also has the consequence of removing valuable foliage, which in-turn removes an essential source of energy production from the tree. The tree will then spend considerable reserves of energy on trying to regrow the lost foliage. Branches and trunks are also important transport and storage tissues within the tree.

Increasing research also illustrates the importance of natural tree branching structure and the ability of the tree to deal with strong winds. The mass damping effect of multiple branches moving in multiple directions during storms helps protect trees and reduce the destructive energy acting on the tree. Excessive removal of branches can reduce this mass damping effect and may contribute to increased failure rates.



Figure 73: Although many trees may not require pruning, our urban trees will sometimes require intervention to remove defective branches or provide the necessary clearances. It is vital this is done using best practices and professional arborists. (Source: Arterra)

Most trees should not typically require pruning on any regular basis. Should pruning work be required it shall be in accordance with Arboriculture Australia's - Minimum Industry Standard (MIS 308) - Tree Pruning and AS 4373 Pruning of Amenity Trees. It should only be undertaken by suitably qualified arboricultural personnel using sharp and clean tools. Where there is a risk of the spread of disease from one tree to another, the pruning tools shall be disinfected between trees.

#### Typical Types of Pruning

The types of tree pruning work that may need to be undertaken include the following:

- Deadwooding: This is the removal of dead or dying branches. If deadwooding is proposed then Council or our Contractors shall remove all dead branches greater than 50mm in diameter on young trees less than 10m in height. They will remove all dead branches of greater than 75mm diameter for existing mature trees greater than 10 metres in height, but only where practical or as advised by the Council. Trees in remote or naturalistic environments shall typically not require deadwooding. If undertaken in more natural areas, and on suitable sized trees, opportunities for habitat feature creation may be considered where practicable to create spouts, bird and fauna hollows and microbat slits and hollows.
- Crown raising: This will involve the removal of some selected lower branches as required to create adequate building, vehicular or pedestrian clearances. These shall be as per the table X.X (and a point measured at 1 metre radius from the centre of the main trunk outward).
- Selective Pruning: This will involve the removal of selected branches and only as required to remove an identified hazard, defective or otherwise abnormal branch. Pruning of branches larger than 100mm in size should be reviewed by a suitably qualified AQF5 consulting arborist before being pruned.
- Formative pruning: This is normally small scale and relatively minor pruning that is undertaken on young trees to improve their longer term health and structure. The aims of formative pruning are specifically:
  - to enhance form and improve structure, or to directionally shape young trees;
  - to reduce the development of any structural weaknesses;
  - as a precursor to more specialized pruning; and
  - to accommodate site constraints and reduce encroachment on utilities or buildings as the tree grows. eg: clearance to lights, signs, poles, wires and buildings.

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ITEM 03	Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management
	Technical Guidelines)
Attachment 4	Draft LCC Tree Management Technical Guidelines - May 2024

TREE MAINTENANCE



Figure 74: Typical clearances Council will endeavour to maintain for trees growing in our most urban environments. We will always need to consider site specific circumstances and tree health and forms (Source: Arterra)

Council will prune trees to maintain reasonable and safe clearance between trees and pedestrians, vehicles and private property. Council has developed specific guidelines with regard to tree pruning for clearances and to maintain views and solar access. Refer to Figure 66 for a graphic illustration of the proposed clearances and offsets for mature tree pruning. This is a guideline illustration only and actual clearances required will ultimately depend on individual site constraints and case by case assessment.

Council will not typically prune a tree for the provision of views or creation of solar or digital receiver access. Council will avoid pruning practices which disfigure the tree or are detrimental to its healthy and safe condition.

Table 8 - Standard Clearances and Pruning Guidelines						
ltem	Clearances Required					
Roads	2.5 metre height clearance over parking spaces, 4.5 metres over main vehicle travel lanes, increasing to 5.0 metres on major arterial roads					
Bus lanes and stops	4.5 metre height clearance over dedicated bus lanes and bus stops					
Pedestrian paths	2.5 metre height clearance or where sight lines are required to pedestrian crossings					
Buildings/structures	2 metre all round clearance except for awnings where 1m will be provided					
Private electrical service wires	0.5 metre all round clearance					
Road Signs/Traffic signals	As required to provide adequate sight lines in normal travel direction					
Lighting	As required to provide adequate illumination					
CCTV	As required to provide adequate visual access to critical areas					
Main electrical powerlines	As required or directed by relevant energy authority and the voltage of the cables.					



#### Tree Maintenance **Tree Pruning**

The removal or pruning of street trees is permitted in association with approved road works under sections 88, 107, 138 and 139 of the Roads Act 1993. Council is largely responsible for all planting, removal and maintenance of street and roadside trees on local roads. Importantly, declared main arterial, motorways or 'State' roads are the responsibility of the Roads and Maritime Services (RMS) (previously the Roads and Traffic Authority). The Liverpool LGA contains several 'State' roads that fall under the jurisdiction of the Roads and Maritime Services (RMS) and Council may not have the ability to manage, prune or remove trees along these roads.

#### **Trees and Powerline Clearance Pruning**

Ausgrid is the state owned corporation responsible for the electricity network that provides power to Sydney homes. Under the NSW Electricity Supply Act 1995 No.94, Ausgrid is responsible for ensuring street trees (as well as private property trees) are trimmed to maintain a minimum safety clearance between the tree and power lines. The typical safety clearance distance is 1.5 metres around bare, low voltage overhead wires and 2metres around the power poles. This safety clearance distance may be even greater on higher voltage lines.

If trees are within 3 metres of any Ausgrid power lines, only vegetation management workers authorised by Ausgrid are permitted to carry out tree pruning work. Council is typically not responsible for clearance pruning of trees near power lines.

In theory, pruning is carried out by contractors who follow the Australian Standard AS4373-2007 Pruning of Amenity Trees. Ausgrid also employs qualified arborists to audit the work of their contractors. Each contractor is also supposed to employ arborists to help monitor standards and ensure they are maintained.

Periodically Ausgrid may amend their policies, environmental codes and work practices. Recent examples of this include their adoption in 2015 of the Vegetation Management Common Requirement (Version 7.4) dated October 2014 and the Private Service Wire Defect Notifications Policy 2015. If residents receive correspondence from Ausgrid, or their authorised representatives, about requests for the pruning of trees and vegetation around private service wires, they should contact Ausgrid directly for any further information or clarification required. Council's Customer Service staff or Tree Management staff may also be able to provide some limited advice and/or assistance to resolve residents' concerns.



Figure 75: Clearance of trees from overhead power lines is an important issue. High voltage lines, in particular, often need very significant offsets which can radically disfigure and effect trees. Council will continue to endeavour to engage with utility providers and utilise the 'right tree for the right location' approach to minimise conflicts and maintenance burdens while still achieving our canopy cover targets. (Source: Arterra)



#### Tree Maintenance Tree Mulching and Surrounds

#### Aerial Bundled Conductors (ABC)

From the ground, Aerial Bundled Conductors (ABC) look like a single thick cable, however ABC contains the normal group of overhead services bundled together to reduce the cross sectional area necessary for the provision of overhead services. This method of cabling reduces conflict with trees. Pruning requirements are usually much reduced and branches can be trained around the ABC more easily.

Priority for ABC conversion is usually given to major roads and particular problem streets where the conflicts between trees and overhead services are identified. Council and Ausgrid maintain an ongoing program to convert some conventional overhead wires to ABC however the cost of this conversion is considerable and is often not favoured by Ausgrid due to the reduced life expectancy of the cables.

Council shall attempt to influence the relevant power authorities to implement ABC in order to help limit unacceptable pruning of our urban trees. Priority for this intervention shall be given to streets where ABC installation will allow larger trees to be planted or continue the growth of newly planted trees unimpeded by the wires before the typically disfiguring pruning is undertaken. Streets where most trees that have already been trained around existing wires will be of lower priority, as the conversion of these streets will have only limited benefits.



Figure 77: Conversion of power lines to ABC is an important initiative to help retain and promote tree planting and around power lines. (Source: Arterra)



Figure 76: Mulches surrounds can improve tree health and prevent maintenance problems from grass mowing around mature trees. (Source:Arterra)

#### 4.7 Tree Mulching and Surrounds

The area immediately around a tree is vitally important. It is where the unseen but all important roots reside. The quality of the soil conditions surrounding the tree, particularly younger trees, often has a direct impact on the health of the tree and its resilience. We will maintain the area around existing trees to promote tree health and ongoing protection.

Trees located within grassed areas within parks shall typically have a clearly defined mulched area under the tree to a minimum of 2-3 metre radius. This shall be a suitable recycled hardwood and coarsely chipped mulch. This helps prevents otherwise avoidable impacts to the trunk and root flares from mower and line trimmer damage. It is important the mulch is not too deep and is of a free draining nature. Excessively thick mulches or very fine organic mulches can become hydrophobic and actually prevent water from reaching the soil zone or introduce unwanted pathogens to the soil or tree.

A mulch ring around trees is a simple and vital way of maintaining soil quality around the trees, promoting moisture retention, reducing and reversing soil compaction, decreasing soil temperature fluctuations, and increasing nutrients and general microbial activity. We will typically ensure that:

- tree bases are relatively weed free and that grass re-growth is controlled;
- mulch is level in appearance and regular in shape;
- herbicides are appropriately used to treat to edges of the tree bases; and
- mulch around tree bases is maintained between 75-100 mm thick at all times and that mulch is no higher than 50mm when directly against tree trunks.

To the extent that limited Council resources permit we will aim to implement similar initiatives for our street trees. We will target, as a priority, these surrounds when they have been installed as part of new planting.



#### Tree Maintenance Tree Removals and Replacement

#### 4.8 Tree Removals and Replacement

#### **Private Tree Removals and Replacements**

Council require anyone removing a tree to obtain approval in writing from Council prior to the removal (except in the case of an emergency). Refer Section 2.3.

Council will typically require private owners to plant a replacement tree. The offset ratio for replacement will be based on a case by case basis but will typically be 1 to 1 for lots less than 600m2 2 to 1 for lots 601-1000m2 3 to 1 for lots >1000m2.

Minimum size of replacement trees will typically be **45L**, however Council may condition larger sizes when particularly large or significant trees are removed. Council may waive the need for replacement planting if the owner can make sufficient and reasonable justification that a replacement tree would be impractical and unsustainable.

## Unauthorised (Resident) Planting on Council Land

Council may identify situations where trees have been planted on the Council managed road reserves or within parks or drainage reserves without the written approval of Council.

Although these are sometimes suitable trees, there are potential issues relating to insurance, public safety, environment and the integrity of overhead and underground services that must be considered.

It may also represent an unacceptable maintenance burden to Council, or a significant cost to later remove a tree. These unauthorised trees may also result in Council's strategic visions not being achieved. Council therefore, does not permit planting of trees on Council land by any person other than Council staff or contractors and Council may remove any such trees without the need for notice.

If residents wish to have tree planted within the verge adjacent to their house or in a nearby park they should lodge a request with Council.

#### **Council Tree Removals**

Generally, Council will not consider leaf, fruit, sap or bark drop or bird and bat droppings as valid reasons to prune or remove a tree. These are natural processes of normal tree growth and use by wildlife.

Council will seldom remove a healthy tree. Council tree replacements will usually only happen gradually over time, as trees need replacing. As such, existing street and park trees, regardless of species, will normally be left to grow for their natural life and will only be removed if they have become a



Figure 78: Unauthorised planting of tree on public land needs to be discouraged and carefully controlled. Council support the desire for trees but any tree planting should be specifically undertaken and endorsed by Council. (Source: Arterra)

safety issue, an unacceptable hazard or ongoing remedial tree or infrastructure works become financially unviable.

Council aims to maintain, expand and conserve the overall canopy coverage within the LGA. Council will remove urban trees in the following circumstances.

- The tree is dead or dying, or unacceptably disfigured or very poorly formed.
- The tree is assessed as being hazardous due to recognisable structural or health defects and where remedial or selective pruning cannot eliminate the risk, or where such pruning will leave the tree unacceptably disfigured or poorly formed.
- The tree is causing public infrastructure damage, which is considered significant and cannot be overcome by other reasonable and practical measures.
- The tree is causing significant damage to significant private structures. It will typically be a requirement to positively establish that the tree is causing the damage and that the damage is 'significant' and that continued and future damage cannot be overcome by other reasonable and practical measures.
- Any other reason, at the discretion of Council's staff, which can be justified by either technical or legal grounds according to the particular circumstances.

Council aims to continue reinforcing the existing character of our parks and streets, planting as many trees as possible, unless there are specific issues or problems to address or there are clear opportunities for park or streetscape or

# TREE MAINTENANCE

## Tree Maintenance Tree Removals and Replacement

canopy cover improvements in line with our adopted Tree Management Strategy.

If a tree is removed it will typically be felled to ground level and the stump ground out. For any tree removal works, where trunks or branches have cavities or native spouts, that may have potential impact on native wildlife, a suitably trained wildlife handler (WIRES or approved equivalent), must be engaged to inspect and potentially relocate any animals prior to works. For identified important habitat trees Refer also Section 4.11 - Special needs and considerations for further guidance.

In the event that native or endangered wildlife is encountered during the course of normal tree removal works, and the tree was not previously assessed as having potential wildlife, work will be temporarily stopped until a trained wildlife handler attends the site or the animal otherwise safely relocates itself or the tree is further assessed by a qualified and licensed ecologist.

#### **Succession Planning**

While retaining and protecting existing trees is a priority, it is important to remember that trees naturally grow, age and ultimately die. On this basis a plan for suitable propagation, procurement and replacement planting also forms part of our tree management.

Good succession and replacement planting begins long before anything is planted in the field. Careful pre-planning is sometimes required to ensure the planting is appropriate on a number of levels. When replacing a number of trees or significant trees Council will undertake suitable succession planning.

Succession planning is only required for the most significant trees and any historic row, avenue or copse plantings. Succession planning should only commence when there is evidence the relevant trees are showing signs of serious decline or ill-health. If this process is commenced too early there is danger of the planning being lost, ignored or becoming irrelevant with passing years and managerial changes. For most situations a suitable 'Succession Plan' should be a simple 2-3 page document that addresses the following points:

- Clearly identify the specific tree(s) to be replaced.
- Describe their location and provides a map, survey or diagram accurately depicting their location and in the case of a row, avenue or copse, their quantity.
- Provide a brief overview of the known significance of the tree(s) (ie. environmental, cultural heritage, scientific, aesthetic, habitat value etc).
- Describe the proposed replacement planting strategy (removal and replacement in the same location, replacements grown adjacent to the existing tree(s)

while awaiting for the ultimate removal of the existing tree, block replacement, staggered, offset replacement etc.)

- Provide a methodology for the sourcing, timing and preparation of replacement tree stock with a minimum of:
  - the anticipated timeline for the replacement project;
  - the method of propagation (cuttings, seeds, other).
  - who will undertake the propagation and of how many (need to allow for failures and further replacements if necessary);
  - where the stock will be propagated and grown (what nursery and for how long); and
  - at what size will they be transported and planted, particularly if its likely to need archaeological assessments.

#### Major Street or Public Area Upgrades

The exception to Council's policy for not removing trees unnecessarily may be when major street or park improvements or upgrade works are required or if there is a specific plan to revitalise a particular street or area. Even then, unnecessary tree removal will still be avoided where ever possible.

Council's method for larger scale tree removal and replacement in any given street, plaza or major park depends on a number of important and inter-related factors:

- Size and significance of the trees being replaced;
- Whether they are part of a consistent avenue planting;
- The nature of the problem(s) that the trees may be causing; and
- The nature of the replacement trees being suggested and whether there will be room under other existing trees for the new planting.

For particularly significant trees or isolated trees that are not part of a recognised avenue planting, they will typically be removed one at a time and replaced with a suitable new tree. This allows the trees to be replaced gradually without significant impacts to the overall amenity of the area.

This may not be effective if the trees are part of a larger grouping or if major street changes or improved planting techniques are proposed. In such cases, Council will be seeking to achieve economies of scale in the new works and flexibility in addressing new footpaths, services or road works that may otherwise damage existing trees.

When the trees are part of a group or avenue, Council will typically remove the identified problem or substandard trees as small groups. For long avenues this will typically be in a 'block' style replacement leaving some groups or 'blocks' remaining in between the new planting. This keeps the overall integrity of the street planting while replacements begin to mature. As the new planting matures Council will



Tree Maintenance Tree Removals and Replacement



Figure 79: Failed and dead trees will occur and should be removed and replaced in a timely fashion to mitigate risks and maintain our canopy cover. (Source: Arterra)

return to remove the remaining 'blocks'. Depending on the size of trees being replaced and the length and importance of the avenue, this process will usually be completed over a multi-year year program in either 2-3 stages, leaving 2-3 years between removals and replacements. This length of time is important so that Council can properly program and budget the works and also to allow time for the new trees to reach a suitable size before removing further trees.

#### **Replacement of Removed Trees**

Where a Council tree is removed, Council will install a suitable replacement tree at or very close to the removed tree. They will follow the spacing and placement guidelines outlined in our Guidelines and may locally adjust the placement as needed.

The replacement species shall be as outlined in these Guidelines or other relevant approved Council plan, for that particular street or park. Where a choice of species is possible the species selected will take into consideration the localised environmental, functional and aesthetic aims and the reason for the previous trees removal. The species selected shall be at the sole discretion of the Council.

#### Notification of Tree Removals and Planting

Where practicable and feasible the Council will provide at least 14 days notice for the planned removal of public trees. This notification will typically be in accordance with Table X and via a notice on the Councils website and a suitable weather proof notice attached to the tree. For emergency removal, replacements of failed or dead young trees or very minor street tree removals, typically no notice will be provided.

Table 9 - Notificati	Table 9 - Notification of Council Tree Removals							
Activity	Notification Period and Extent							
Emergency Removal	• No prior notification							
Minor Street or Park Tree Removal (including trees up to 5m)	<ul> <li>7 days prior notification to immediately adjacent properties stating reason for removal</li> </ul>							
Standard Street or Park Tree Removal	<ul> <li>28 days prior notification to all surrounding or adjacent properties and those opposite stating reason for removal</li> <li>A3 sized weatherproof notice attached to tree</li> <li>Proposed tree removal included on Council's website</li> </ul>							
Registered Significant Tree Removals	<ul> <li>Notification of planned removal and reason for removing the tree and/or reason for removing it from the Council's Register of Significant Trees to be presented and formally endorsed by Councillors</li> <li>3 months prior notification to all surrounding or adjacent properties stating reason for planned removal</li> <li>A3 sized weatherproof notice attached to tree</li> <li>Proposed tree removal included on Council's website</li> </ul>							

#### Tree Maintenance Emergency Tree Works

#### 4.9 Emergency Tree Works

Proactive tree management and maintenance will normally reduce the level of reactive tree maintenance activities or unexpected tree management. However when dealing with urban trees and trees that are a legacy from previous periods there will always be unexpected and ad-hoc maintenance requirements. Similarly, unusual or extreme weather events can lead to unexpected tree issues and storm damage.

Very occasionally, the immediate removal or pruning of a tree or number of trees may be required due to imminent danger to life or property. In the event of an emergency situation approval will not be required from the Council. In the event of major property damage or a tree causing personal injury or death we will expect the relevant emergency services personnel and any tree Contractors engaged to deal with the incident to take photographic evidence of the tree failure and any damages sustained to property. They should report the failure a soon as practical to the Council's call centre (phone 1300 36 2170).

Tree failures or storm damage clean-up will be dealt with in a timely fashion by Council's contracted maintenance program providers.

#### Accidental Tree Damage

Should a tree be accidentally damaged, timing can be of the essence, particularly with bark injuries, trunk damage or chemical contaminations. Report such damage as soon as practical to the Council's call centre (phone 1300 362 170).

Where a branch has been broken, it shall be removed and the damaged end pruned to a suitable branch collar and in line with accepted pruning practice. If the branch has been torn out of the trunk, assessment shall be made and the damage cleaned up as much as practicable, without sustaining further damage to the tree.

If bark has been dislodged from the trunk or large branches, it may be possible to reinstate it to the tree using suitable non-injurous strapping and wrapped with moist hessian and/ or industrial cling film to tightly reattached the damaged bark. This process is time critical and must be done within hours of the damage. This may limit water loss and in some rare cases allow the tree to potentially develop the formation of a "traumatic phellogen" that may resume its function as a producer of the protective cork or bark layer. The covering should be removed after approximately 4 weeks and checked. At this time, any dead or unviable material should then be carefully removed and the damage to the tree re-assessed. If tree roots are accidentally disturbed or excavated, any broken and torn sections shall be carefully exposed by hand and suitably pruned leaving only clean cuts, to minimise risks of infection by fungal pathogens and to promote potential for new root growth. Damaged trees may also warrant receiving additional follow up care and the tree may be provided with supplementary watering and fertiliser applications to help sustain the trees health and growth.

Refer to section 4.10 if soil contamination is expected or exposed in the course of emergency tree works.



Figure 80: Trees are very easily damaged by passing vehicles or construction equipment. Proper protection is always the key, as it is seldom possible to repair a damaged tree. (Source: Arterra)



#### Tree Maintenance Soil Contamination and Trees

#### 4.10 Soil Contamination and Trees

#### **General Considerations**

Liverpool LGA has historic uncontrolled filling in some areas. It is common for contaminated soils to be encountered. Some of the more common contamination encountered may be items such as:

- heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc),
- petroleum and/ or hydrocarbons (TPH, Benzene, toluene, ethylbenzene, xylenes),
- organochlorine pesticides (OCPs) and organophosphate pesticides (OPPs), polychlorinated biphenyls (PCBs),
- and asbestos.

This needs to be considered with regard to tree management for the following reasons:

- Digging and preparation for tree planting may mean that contaminated soils are encountered
- Failures of trees that results in roots and attached soils lifting out the ground may expose contaminated soils
- Grinding out of tree stumps may expose contaminated soils and create dust that may contain contaminants
- Undertaking non-destructive root investigations or potholing that may expose contaminated soils and create dust that may contain contaminants
- Remediation of site with contamination often requires the treatment, capping or removal of contaminated soils. This can have significant impacts to the health of existing trees.

The following guidance is provided regarding contamination and tree related work.

#### **Tree Planting and Soil Preparation**

When planting new trees Council shall consult relevant registers or mapping of known contamination areas. (Consult with internal Liverpool City Council Environmental Health Team). If planting within any areas of know contamination, specific controls and staff inductions shall be carried out to ensure all workers are aware of the contamination, the nature and potential depth of the contamination is understood and appropriate precautions, procedures and protective equipment is observed. This may necessitate Council engaging specialist consultants and Contractors to test the area or undertake remediation or soil removal prior to planting.

In areas where contamination is known or observed existing spoil created during excavation for the new tree may need to be appropriately removed and disposed off site with replacement soil provided using clean imported soils and backfill.

When planting new trees in areas not mapped or expected of contamination, vigilance is still to be exercised by all Council supervisors and appointed Contractors for the potential presence of soil contamination such as asbestos. Should any signs of potential contamination be noted during excavations, work shall be suspended immediately until the nature of the potential contamination is identified and properly managed if required.



Figure 81: Tree work and activities may need to be modified on sites with identified contamination. (Source: Arterra)



## Tree Maintenance Soil Contamination and Trees



Figure 82: Tree work and activities may need to be modified on sites with identified contamination. Work that disturbs soils or creates dust that could be contaminated may need to be avoided, or performed by specialists (Source: Arterra)

#### **Emergency Work Where Soil is Exposed**

During emergency tree works where soil has been exposed, rudimentary checks and site observations should be undertaken by Council staff, or their engaged contractors, to inspect for possible signs of subsoil contamination. If contamination is suspected the area should be appropriately cordoned off from the public. Above ground tree parts may be removed where safe to do so, but stump removal may need to be delayed until the site is inspected by trained contamination experts and advice given as to required safety precautions for Council staff, contractors and the general public.

## Stump Grinding and Non-destructive Root Investigation Works

Before undertaking stump grinding, or non-destructive digging and root investigations such as airspades and water jetting with vacuum extraction, Council shall first consult relevant registers or mapping of known contamination areas. If the area is known to have potential contamination extra precautions are to be applied. This may entail leaving the stump in place and simply felling tree to the ground level and leaving in place (where safe to do so).

Prior to any grinding work, the stump grinding contractor should inspect the site for any signs of potential contamination, particularly the presence of asbestos.

If the contamination is minor or deemed acceptable for the stump to be ground, out and the area prepared for replacement tree planting, the stump grinding contractor shall observe additional methods to control and suppress dust. This may include

- use of smaller or more specialised grinding equipment (or non-dust producing digging equipment)
- use of increased barricading and exclusion distances
- use of improved personal protection equipment such as coveralls and masks and filtered breathing equipment
- use of dust suppression spays and misters while grinding (or undertaking non-destructively digging)



#### Tree Maintenance Soil Contamination and Trees

• appropriate removal and disposal of grindings and surrounding loosened soils and then replacement with clean imported fill

Tree removal and stump grinding on private lands should follow similar guiding principles.

#### **Remediation of Contaminated Sites Near Existing Trees**

Sites that are identified with contamination often need to be remediated and made safe. This often requires removal, and /or treatment of the contaminated soils. This can often lead to significant impacts to existing trees and special considerations may need to be made. Typically contaminated sites will need to be examined by a trained 'site hygienist' who will advise on the nature of the contamination and advise on the appropriate remediation measures. If existing trees are present, that need to be retained, the remediation measures must be discussed and resolved with a qualified arborist, prior to being undertaken.

The NSW EPA Contaminated Land Management Guidelines for the NSW Site Auditor Scheme (3rd Edition) (2017)11 provides the following requirements to be taken into consideration:

- Remediation should not proceed in the event that it is likely to cause a greater adverse effect than leaving the site undisturbed; and
- Where there are large quantities of soil with low levels of contamination, alternative strategies should be considered or developed.

The most common methods of treating soil contamination are:

- Complete removal of the contaminated soil layer to a given depth and disposal off site.
- Selective removal of the contamination via close visual inspections and then specific removal and disposal of the visible contamination.
- Chemical treatment of the soils to render contamination safe or inert. This is typically only available for some specific chemical contaminants.
- Excavation and removal of contaminated soil layers or pockets of contamination and re-burial on the site or nearby at required depths with suitable capping
- Placement of a suitable geotextile and/or marker layers to separate and identify the contamination and then the capping of the contamination with clean imported soils.

All of the above can have very dire consequences on the roots of existing trees and can lead to tree death and/or instability.

The following measures shall therefore be applied with regard to existing trees

- Typically if the contamination is located outside of the calculated Tree Protection Zone (TPZ), as calculated under the AS4970 - Protect of Trees on Development Sites, these soils may be treated, removed or capped as required and the loss of roots will be tolerable
- Where contamination is found within the TPZ areas. Excavation and/or disturbance of soils within the TPZs will typically not be permitted without the approval of an appointed arborist. Contaminated soils will instead require capping and management in-situ. Chemical treatments to render contamination inert shall typically not be allowed within TPZ area due to the possibility of these altering soil chemistry or being detrimental to tree roots and affecting tree health.
- If contamination is very isolated and minor in nature then some removal of surface soil may be tolerated to a maximum of 100mm depth, if undertaken using suitable non destructive methods such as vacuum extraction. (Note this is usually only suitable in friable and non-clay based soils).
- The capping soils must be suitable and not detrimental to tree health. Capping shall typically be achieved through the installation of between 150mm-300mm of clean imported organic topsoil. The imported organic topsoil should be:
  - Hills Bark Blower Organic Garden Mix; or
  - Benedict Organic Garden Mix (M13); or
  - An approved equivalent manufactured garden soil with a maximum 20% organic matter by volume.
- Capping material must be highly permeable and must not exceed 300mm in depth. Capping material should not be compacted. Placing soil at depths greater than 300mm or using heavy clays can have detrimental affects on tree health.
- If asbestos is present, a marker layer may be required to be laid under the capping layer to delineate contaminated soil from clean capping soil and identify the contamination to future contractors or owners. When installed around trees the marker layer should be a very open geo-grid material that readily allows air, water and finer tree roots to pass through unhindered. (Minimum of 50mm openings between grids). Fine or non-permeable geotextiles or plastic sheeting must be avoided, as these may impact or restrict root growth and lead to significant tree health impacts.

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## Tree Maintenance Soil Contamination and Trees

#### **Planting New Trees and Contamination**

When planting new trees within a contaminated soil area this may be possible with limited issue or restrictions Typically the following measure shall be applied when planting trees within a known contaminated area. Where possible the levels should be raised and the contaminated soils left in place and capped with clean and imported soils. This sill then allow planting of the new trees with minimal change to normal and documented procedures. Depending on the nature of the contamination a marker layer may be required. Any marker layer should be as deep as possible, to avoid impacting tree root development or drainage. Marker layers deeper than 700-800mm below finished surfaces should have little impact to trees or tree roots.

If such depths can not be readily achieved within a wider area markers layers may be shallower surrounding the new tree but must be locally deepened immediately around the tree to go under the installation size of the root ball and should not be closer than 3m radius to the centre of the tree if installed vertically or near vertically. Marker layers under or around trees must be a very open geo-grid material that readily allows air, water and finer tree roots to pass through unhindered. Fine or non-permeable geotextiles or plastic sheeting or the like must be avoided as these may impact or restrict root growth and lead to tree health impacts. (Refer - Typical planting details at Appendix 5.7 - Standard Planting Details)

In rare occasions, if contamination is a major concern and capping and marker layers are not appropriate then trees may still be installed but planted in small or very small container sizes. For example if soil is contaminated and would otherwise prevent tree installation and excavations then trees could be installed using 'tubestock' sized trees that can be done with very little if any soil disturbance.





# 4.11 Special Needs and Considerations

#### **Root Barriers**

Root barriers are not recommended and will typically not be required. Their installation around existing mature trees can have significant and detrimental impacts to existing trees' roots. They shall only be installed when specifically warranted to protect a significant piece of infrastructure or an important heritage structure.

Independent assessment by an AQF5 arborist will be completed prior to the installation of any root barriers to determine if the root barrier is appropriate and will achieve the desired protection from roots. It will also be necessary to ensure that the subsequent impacts to any mature tree is acceptable.

#### Transplanting

Although it is technically possible to transplant many trees such as Figs, most palms and some smaller deciduous and other exotic trees, Council will seldom have the resources or ability to consider transplanting trees. Likewise, private developments that rely on transplanting an existing tree need to be seriously questioned in terms of realistic and affordable outcomes.

Council will usually recommend consideration of other alternatives that leave the trees in their current location rather than move them. This is due to the following key reasons.

- The extreme difficulty in gaining appropriate and workable access to all sides of a tree and the likely engineering difficulties with undermining or disturbing surrounding structures and services.
- The substantial costs associated with cranage, traffic control, transport, and the engineering of suitable support systems.
- The costs associated with the ongoing maintenance of transplanted trees, once they are compromised by the move.
- The very real likelihood, even if successfully transplanted, of the transplanted tree declining in overall health and condition and then shedding limbs, having a sparse canopy and ending up an increased tree 'risk' and a potential eye-sore rather than an asset for many years to come.

Transplanting of trees shall only be considered by Council in extremely rare and highly specific circumstances. Council shall typically engage the services of appropriately experienced and qualified (AQF5) arborists together with suitably experienced mature tree transplanting contractors to advise on the feasibility of tree transplanting.



Figure 83: Transplanting is a complex, and costly process. If it is ever undertaken or endorsed by Council, it needs to be done by experienced professionals and must include adequate follow up care and maintenance regimes to be successful. (Source: Arterra)

TREE MAINTENANCE

Tree Maintenance Special Needs and Considerations



Figure 84: Artificial propping or bracing is a highly specialised skill and needs to be properly installed and frequently monitored. It will typically be reserved for only our utmost significant of trees. (Source: Arterra)

#### Artificial Bracing and Propping

Interventions such as bracing or propping will not normally be implemented by Council due to the large costs and potentially short-term efficacy. It will only be considered as a last resort to avoid complete removal of a very important tree. This type of tree management will only be implemented for the very highest value habitat or heritage trees.

If needed, it shall be designed and installed by experts in the field of tree bracing and support. It will then need to be monitored on an annual basis. Rigging and other fixtures shall be inspected and replaced when worn or damaged, as necessary.

Any such work must be undertaken strictly in line with Arboriculture Australia's - Minimum Industry Standard (MIS 310) - Tree Support Systems.



Figure 85: Artificial propping or bracing is a highly specialised skill and needs to be properly installed and frequently monitored. It will typically be reserved for only our utmost significant trees. (Source: Arterra)





Figure 86: When some trees reach the end of their natural life, their use and benefits may be prolonged through thoughtful creation of habitat or 'stag ' trees. (Source: Arterra)

#### Habitat, Hollows and Stag Tree Creation

Some of the existing larger native trees located within the LGA may be identified as important habitat trees presenting with a variety of hollows and smaller spouts or nests.

If these begin to decline or die, and where viable and appropriate, they may be pruned to form what are known as "live stags", thereby preserving as many existing hollows as possible and retaining most of their habitat value. This may substantially reduce the likelihood of tree and branch failures in the short to medium term.

All work shall be undertaken in line with Arboriculture Australia's - Minimum Industry Standard (MIS 312) -Environmental Arboriculture.

- To create a live stag Council shall typically involve:
- having any habitat features or active nests assessed by a qualified and licensed ecologist or wildlife carer. (Refer below)
- assessing the overall form, lean and balance of the proposed live stag tree and remove any excessively leaning or outreaching branches;
- removing any severely decayed or hollowed material that may be likely to fail within the foreseeable future;
- typically remove all branches and dead wood below 150mm in diameter, and in accordance with normal pruning practices;
- potentially limit or exclude general access around the base of the tree;
- retain as many existing hollows, spouts and cavities without further treatment or pruning: and
- inspect for and arrange for any active termites to be treated if they are still active and present within the tree.

#### Tree Removals With Noted Habitat Features

Landowners have a duty of care to avoid cruelty and harm to native, introduced or domestic animals when pruning or removing trees even when in accordance with permits. Landowners must be aware that clearing of trees and vegetation has the potential to result in harm to native animals and loss of their natural habitat.

Accidental or incidental injury to wildlife is not a focus of compliance enforcement, which is consistent with the NSW Office of the Director of Public Prosecution's guidelines. However, deliberate cruelty to animals may be subject to prosecution under the Prevention of Cruelty to Animals Act 1979.

Care must be taken to minimise your potential for harming wildlife such as having tree hollows checked and looking for active bird nests and tree dwelling animals such possums before commencing pruning or removals.

A suitable fauna ecologist shall be present during any live stag creation or work on any tree with a notable hollow in case a removed or retained hollow has any fauna present and requires appropriate relocation or protection.

If the public or our contracted Tree Contractors witness any displaced, orphaned or injured wildlife they should contact either:

- the Office of Environment and Heritage, or
- A licensed fauna rehabilitation group for assistance.

The fauna rehabilitation page of the Office of Environment and Heritage website provides further advice and a full list of licensed providers such as the WIRES Wildlife Rescue group. Only people authorised under an Office of Environment and Heritage wildlife licence may take a native animal into care. Rehabilitating a native animal without an authority is illegal and can lead to prosecution. You are not allowed to keep rescued native animals as pets.

Landowners who clear trees and vegetation are not exempt from prosecution under the National Parks and Wildlife Act 1974 for harm to protected fauna, or for deliberate cruelty to animals under the Prevention of Cruelty to Animals Act 1979. Note: 'protected fauna' is as defined in the National Parks and Wildlife Act 1974.



Figure 87: Tree hollows are vital for many native species of birds and mammals in Australia. It is vital such resources are maintained within our urban forest. (Source: Arterra)





Figure 88: Tree hollows are vital for many native species of birds and mammals in Australia. It is vital such resources are maintained within our urban forest Powerful Owl photographed in a suburban park in northern Sydney (Source: Arterra)

The appendices to the Guidelines provides many of the standard specifications, requirements and procedures that Council will apply when managing, protecting, planting or removing our trees.





ITEM 03Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management<br/>Technical Guidelines)Attachment 4Draft LCC Tree Management Technical Guidelines - May 2024



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APPENDICES





5.1 Liverpool (	City Coun	cil - Tree Mana	gement Techni	cal Guidelines	5		
PRE-PLANTING CHECKLIST							
PERSON COMPLETING F	ORM						
NEAREST STREET NO.		STREET OR PAR					
SUBURB				DATE			
TREE DETAILS							
SPECIES							
ESTIMATED MATURE SIZE (Tick the appropriate box)	E ) Me	Small (<10m) [ dium (10-20m) [ Large (>20m) [		JTAINER SIZE			
CHECKLIST			(Tick the appro	opriate box)	YES	NO	N/A
1. Are there overhead stru prevent this tree being pl	uctures, wire lanted?	s, awnings, street	lights, or other tree	es that should			
2. Has the register of cont contamination present	taminated si	tes been checked	and are there any	signs of potential			
3. Are there nearby under prevent this tree being pla	rground obs lanted in this	tructions such as s location?	services, pits, walls	etc that should			
4. If in a street is this locat and therefore a street tree	tion adjoinin e would detr	g a public reserve ract from this more	or park with more e significant plantir	significant trees			
5. If multiple trees are being planted, are the trees spaced far enough apart? (min. 7m for Small, min. 10m for Medium, min. 15-20m for Large)							
6. Does the planting pit / location likely provide sufficient soil volume /clearances / adequate drainage and is it sufficient for long term growth of the tree?							
7. Is the tree likely to cause any sight line issues to pedestrians, cyclists, traffic lights, signs, driveways or intersections?							
8. Are there any solar collectors nearby that should be considered? (This is not applicable for 'replacements' of pre-existing trees)							
9. Is the clearance to the kerb and footpaths sufficient? (minimum 700mm to kerbs, minimum 700mm to footpath, 3m to +60km travel lanes on rural road/motorway)							
10. Does the park, street or verge form part of an Asset Protection Zone for bushfire anagement that may prevent this tree being planted?							
NOTE: IF ANY OF THE ITEMS LISTED ABOVE MAY IMPACT THE LONG TERM VIABILITY OF THE PROPOSED TREE THEN SEEK ADVICE FROM YOUR SUPERVISOR OR COUNCIL'S REPRESENTATIVE FOR DIRECTION.							
The tree is a replace	ment tree	. 🗌 Tł	ne tree is a new	tree in a vac	ant lo	cation.	
NOTES / RECOMME	ENDATION	NS					
L							





Liverpool City Council - Tree Management Technical Guidelines

## EVENT PLANNING AND TREE PROTECTION INFORMATION SHEET

#### **Overview**

Trees are an important component of Liverpool's Streets and Parks. It is the **responsibility of the event organiser** to adequately and actively protect the Council's trees in the course of planning and holding any event.

Trees are easily damaged particularly during bump-in and bump-out due to:

- Impacts with vehicles or equipment or
- Soil compaction within the tree root zones.

Trees are easily damaged during the event by event staff, contractors and patrons through:

- Inappropriately attaching things to trees;
- Vehicle or equipment impacting with the tree, branches or foliage;
- Breaking of branches, trunks and foliage;
- Spilling or dumping of chemicals; or
- Compacting the soil within the trees root zone.

Trees may also present risks to patrons in the event of extreme weather conditions such as storms or very high winds.

To ensure the best outcome for your event and the ongoing health of our trees please consider and adhere to the following information and requirements.

#### Prior to your event

Prepare and submit to the Council an event plan, including a suitable site layout plan showing:

- Proposed equipment layout, vehicular and pedestrian access routes and provision for appropriate offsets for safe clearance to trees
- Proposed bump-in / bump-out routes with consideration to avoid trafficking in close proximity to trees
- Locations for placement of heavy items such as generators and cool rooms to be well clear of trees
- Major pedestrian and vehicular routes are to avoid trees
- Proposed tree and ground protection measures as required by the Council. This may include items such as temporary fencing or bunting, water filled barriers, ground protection mats, and signage

#### **During your event**

- Install tree and ground protection as per the approved event site plan.
- All contractors and event staff shall be briefed on the importance of tree protection.
- Bump-in / bump-out routes shall avoid trafficking under or in close proximity to trees.
- Ensure a Council representative acts as a 'spotter' to observe and direct all heavy vehicle movement and equipment installations if in the vicinity of trees.
- Alternative access shall be implemented if the required truck cannot safely fit under tree branches. No tree branches are to be pruned or snapped off.
- Do not affix anything to trees.
- No branches or foliage shall be damaged or removed to facilitate equipment installations.
- Heavy equipment shall be installed per the approved event plan on appropriate ground protection.
- Ensure generators are located at least 10 metres from trees and exhaust emits away from trees and foliage.
- Bulk fuel stores shall be kept a minimum of 15 metres away from any tree.
- Refuelling shall be done a minimum of 10 metres from any tree. Appropriate bunding and ground protection is required during all refuelling operations regardless of distance to trees.
- A 'fuel spill management kit' shall be on hand at the location of any refuelling activities.
- Any refuelling shall be carried out by a team of at least two people.
- Event security is to ensure patrons do not climb or accidentally or intentionally damage trees.
- In the event of extreme weather conditions such as storms or very high winds the event shall be suspended and the site evacuated in accordance with the preagreed Emergency Management Plan for the event.

#### Compliance

The Council may impose monetary bonds and/or penalties for event related damages to trees, grounds and Council's assets as per the event agreements.

# **APPENDICES** STANDARD TREE SUPPLY SPECIFICATIONS

#### 1. General conditions and quality

All trees to be provided to the Council are to conform to the NATSPEC guide and "Guide for assessing the quality of and purchasing of landscape trees" by Ross Clark 2003 and AS2303:2018 "Tree Stock for Landscape Use". The following specification details the requirements for the supply and transportation of trees and palms.

#### 2. Definitions and sizing

Definitions for the terms used within this specification shall be in accordance with the AS2303:2018 "Tree stock for landscape use".

Term	Definition	
Batch	Quantity of tree stock of the same species, container size, type, age from the same origin.	
Calliper	Trunk diameter measured at 300mm above the root crown, or 50% of the overall height, whichever is the lower height, expressed in millimetres.	
Central Leader	Clearly defined single, relatively straight, trunk.	
Clean Stem Height	Distance between the uppermost surface of the root ball and the first order branches of the trunk that is free from branches.	
Self-Supporting	Tree stock supporting its above ground parts in an upright position without movement of ≤30° from vertical, stem breakage, injury or loosening of roots in the growing media.	
Size Index	Numerical expression of the size of the tree above ground. It is the product of the height of the tree (in metres) and the calliper (in mm). (ie. height x calliper)	
Destructive Root ball Inspection	The washing away or removal of all soil from a root ball to allow for detailed inspection and assessment of root development.	
Partial Investigative Root ball Inspection	A method of exposing a section of a root system to enable inspection of root development by washing away a wedge- shaped section from the stem to the extremity of the root ball. This soil can be gently replaced so the tree is not significantly damaged.	

Nursery stock shall meet design criteria for minimum dimensions, container size and shape, plant shape or special pruning requirements outlined in this document and the table below.

Container Volume	Height above container (m)	Calliper at 300mm	Clear trunk height (m)
45 Litre	1.5 - 2.0	30-35 mm	0.8
75 Litre	1.8 - 2.4	40-45 mm	1.2
100 Litre	2.0 - 2.4	> 50 mm	1.5
200 Litre	3.0 - 3.5	> 60 mm	1.5
300 Litre	4.2	> 70 mm	1.5
400 Litre	5.5	> 70 mm	2.0

#### 2. Labelling of stock

Clearly label individual trees and batches with the species name and cultivar / variety / provenance if appropriate. The label is to withstand transit without erasure or misplacement.

#### 3. True to type

The trees supplied and planted shall be the species, and variety or cultivar that the Council has specified.

#### 4. Health and vigour

The trees supplied shall be healthy and vigorous at the time of delivery and planting. Supply trees with foliage size, texture and colour at the time of delivery consistent with the size, texture and colour shown in healthy specimens of the nominated species. Supply trees with extension growth consistent with that exhibited by vigorous specimens of the nominated species.

#### 5. Pest and disease

Trees shall not be diseased or show evidence of pest attack that could affect the long term health of the tree or adjoining plantings. Supply trees with foliage and soil free from attack by pests and diseases. For Australian native trees with a history of attack by native pests (eg. Ficus macrophylla & Eucalypts), evidence of previous attack must be restricted to less than 15% of the foliage and there must be no actively feeding insects or evidence of damaging fungal attack.

#### 6. Injury

Supply only trees free from injury and wounds , except properly made pruning cuts made in accordance with AS4373:Pruning of Amenity Trees.

#### 7. Self supporting

Supply only trees that are self supporting.

#### 8. Stem taper

Supply trees where the calliper at any given point on the stem is greater than the calliper at any point higher on the stem.

#### 9. Formative pruning

Ensure a clean-cut at the branch collar that complies with AS4373-2007: Pruning of Amenity Trees. Trees are not to be pruned into a saleable shape just prior to shipment. All pruning shall be a clean-cut at the branch collar, no lopping or topping of trees is to be carried out and the diameter of any wound must not exceed 50% of the calliper immediately above the point of pruning

Clean stem height: trees shall be supplied with a clean stem height of 35-40% of total tree height. For example a 5m tree is to be pruned to 2m maximum (clean stem height must not exceed 40% of total tree height). Restrict fresh cuts (i.e recent, non-calloused) to <20% of total tree height.

ITEM 03



## Appendices Standard Tree Supply Specifications

#### 10. Crown symmetry

The symmetry of the crown is an important aspect of the presentation and appearance of the tree in the landscape. Difference in crown distribution on opposite sides of the stem axis must not exceed 20%.

#### 11. Stem structure

Species with an excurrent form: Supply trees with a defined central leader and the apical bud intact. Trees that have had their leaders cut or damaged will not be accepted. Supply trees with a single stem roughly in the centre of the tree with any deviation from vertical <15°.

Species with decurrent form: Supply trees where the central stem is not divided at any point lower than the clean stem height nominated, and that the stem junction at the point of division is sound.

All species: Ensure that branch diameter is less than or equal to one-half of the calliper immediately above the branch iunction.

### 12. Included bark

Supply trees where the branch/stem bark ridges at junctions between stems and branches and between co-dominate stems are convex, except for species prone to include bark that are known to remain strong (as approved by Council).

#### 13. Trunk position

Supply trees with the distance from the centre of the trunk to any extremity of the rootball is not varying by >10%.

#### 14. Compatibility of graft unions

When purchasing named cultivars propagated by grafting, it is critical that the graft union is sound and that the scion and root stock are compatible. The union between the scion and the root stock must be sound for the entire perimeter of the graft. The diameter of the scion immediately above the graft must be equal to the diameter of the rootstock immediately below the graft (+or -20%).

#### 15. Indication of north

Trees in containers >100 litres: Indicate the northerly aspect during growth in the nursery and ensure it is marked so to withstand transit without erasure or misplacement.

#### 16. Root division

Trees in containers >45 litre: Primary division of roots is to have occurred within the outer 50% of the rootball at <100mm intervals.

#### 17. Root direction

Ensure that roots, from the point of initiation, generally grow in outwards (radial) or downwards direction, and that any deviation from the established direction <45°.

#### 18. Root ball occupancy

Soil Retention: On shaking or handling of the unsupported rootball at least 90% of the soil volume shall remain intact.

#### 19. Root ball depth

Rootball depth assessment for containers/rootballs 45 litres or larger must:

- have a depth of less than or equal to the maximum depth specified for palms;
- have a diameter greater than or equal to their depth; and
- rootballs (regardless of size) must not exceed 550mm in depth (except for palms).

#### 20. Height of root crown

Ensure that the trees root crown is at the surface of the rootball and free from suckering.

#### 21. Non-suckering rootstock

Grafted cultivars/varieties: Supply trees grafted onto non-suckering rootstock.

#### 22. Quality Assessment and Compliance

The installer must submit suitable documentation to demonstrate compliance with the requirements of this specification and AS2303:2018 Tree stock for landscape use. Documentation for each differing batch and different species shall be issued to the Council at 3 monthly intervals and at least 7 days prior to their dispatch.

As a minimum, the tree stock inspection forms are to be in accordance with the 'Example A' form contained in Appendix C of AS2303:2018. The required compliance testing that is referenced in that form shall be performed in accordance with the scope and protocols outlined in Appendix A and B of the standard, with the exception of the sampling size, which shall be amended as per the table below. The sample size shall be equal for both above and below ground assessments.

No. of Trees in Batch	Minimum No. to be sampled
1-4	all trees in batch
5-20	4
21-50	6
51-100	10
>100	10 + 2% of number to be supplied in excess of 100

All documentation shall be retained by the supplier for a minimum of 3 years from the date of supply.



## Appendices

Standard Tree Supply Specifications

#### 23. Transport and Unloading

Carefully load, transport and unload, at the nominated site, the specified trees. All trees are to be delivered in such a way to prevent in transit wind damage. All trees shall be watered prior to loading for delivery. Plants shall not be contained within delivery vehicles for a period longer than 24hrs.

Trees shall be carefully unloaded using methods appropriate to the size and weight of the trees. Damage to trees sustained during transport or unloading will result in those plants being rejected. Plants shall conform to the requirements at the time of delivery to the planting site. Transpiration shall be minimised during transport to prevent subsequent wilting or unseasonal defoliation. Plants that have been allowed to wilt or dry out during transport shall be rejected, irrespective of any previous acceptance.

The soil mass of the root ball shall be securely contained and supported during transport. Root balls that have been unreasonably fractured, deformed or slumped during transit or unloading shall not be accepted.

#### 24. Non-conforming specimens

Any tree not conforming to the specifications and standards listed in this specification shall be rejected and suitable replacements provided. If non-conforming trees are provided, the Council require new stock that complies to be supplied and planted, or alternatively may provide replacement specimens and deduct the costs from any applicable bank guarantee or bond.



Appendices Standard Tree Supply Specifications



## **APPENDICES** STANDARD TREE PLANTING AND SOIL SPECIFICATIONS

#### 1. General

This specification describes the appropriate techniques to be used to install new street trees within the Liverpool Local Government Area (LGA).

There may be allowance for some variation in the techniques to be used, however any change to the techniques from those described here must be submitted in a Work Method Statement for approval by Council prior to any work being carried out.

Tree planting works shall be undertaken by an Arborist or Horticulturist with minimum certification in accordance with Australian Qualifications Framework Level 2.

#### 2. Typical scope of work

The scope of work for tree installation work typically comprises:-

- 1. Demolition of existing tree pits, surrounds or cutting of the existing pavements.
- 2. Excavation of subgrade for tree pits, installation or connection of suitable drainage.
- 3. Supply and installation of imported and existing soil mixes.
- 4. Installation of trees.
- 5. Supply and installation of wooden stakes, ties and guys where required to maintain temporary stability and provide temporary protection.
- 6. Installation of supplied semi-permanent tree guards where specified
- 7. Supply and installation of various styles of tree bases, to the Councils specification, (after an initial six (6) month soil settlement).
- 8. Reinstatement of pavement in any aborted tree pits.
- 9. Maintenance of planted trees for a specified period following completion of planting.

#### 3. Standards

All works shall be in accordance with the relevant standards. The following standards are referred to in this section:-

- 1. AS4419-2018 Soils for landscaping and garden use;
- 2. AS4454-2012 Compost, soil conditioners and mulches;
- 3. AS4373-2007 Pruning of amenity trees.

#### 4. Statutory requirements

The installer is responsible for compliance with all relevant statutory requirements.

The installer shall apply for a Road Opening Permit and be able to demonstrate clear working programs and sequences. Site specific pedestrian and vehicular traffic control plans are to be submitted as part of this application and shall conform to NSW Roads and Maritime Services guidelines and any other statutory requirements. These plans shall include any requirements for parking of work site vehicles and the delivery of materials.

Approval from the NSW Police Traffic Management Centre and NSW Roads and Maritime Services may be required when the work has an impact on traffic flow on major roads.

#### 5. Environmental controls

The installer shall ensure that all materials and the execution of the work are ecologically sound, environmentally benign and consistent with the principles of sustainable development.

The installer shall take all practical precautions to ensure that dust and noise caused by the works are kept to a minimum. The installer shall take all practical precautions to prevent the spread of dirt and mud along roads and paths. The installer shall be responsible for all localised sediment and erosion control of work and stockpiles under their control and use

The installer must comply, and make sure that sub-contractors comply, with the general provisions of this clause and any other environmental protection provisions within the requirements of any statute, by-law, standard and the like related to environmental protection.

#### 6. Inspections

Provide not less than 48 hours notice so that a Council Representative can make the following inspections:-

- 1. Delivery of tree stock prior to planting.
- 2. Tree(s) set out and placed in tree pits before backfilling.
- 3. Tree planting completed.
- 4. Footpath reinstated.
- 5. Periodic inspections during maintenance period.
- 6. Completion of plant establishment period.

#### 7. Existing site investigations

The installer shall confirm with the Council the exact location of all tree pits associated with tree planting works.

In accordance with NSW electricity and gas supply regulations, all excavations for tree planting require the review of underground service plans sourced from Dial Before You Dig service. Specialist service location tools or expertise may be required when underground service plans are insufficiently detailed or where plans indicate that services are close to the intended planting location. The installer shall be responsible for the rectification of all pavement surfaces where inspections have been undertaken including the making good of any excavation or site markings.

The installer shall notify the Council immediately upon discovery of services or obstructions that prevent any planned tree planting. All services shall be considered live until determined otherwise. No liability is accepted, by the Council or the Service Authorities, for accidents resulting from contact or disturbance to services.



In the event of any damage to any service, the installer shall immediately notify the relevant authority and the Council and satisfy all requirements of the authority concerned.

The installer shall be liable for all damage caused by the tree installation works to all existing buildings and structures. The installer shall make good all damage at their expense.

#### 8. Spoil

Surplus excavated material must be immediately removed from the site. This includes debris resulting from site clearance and excavated material not reusable as topsoil, filling, mulch or the like, unless otherwise specified or directed. Existing topsoil with any stump grinding debris incorporated within it will be removed from site and not re-used in the new planting site.

The installer shall be solely responsible for the safe and harmless disposal of material away from the site. Surplus excavated material shall not be permitted to remain in place overnight.

Existing tree base materials, such as unit pavers or stone tiles, can be recycled and reused in the new tree bases as long as specifications allow.

#### 9. Extent of excavations

Excavate to an equivalent depth of the new tree rootball measured from the underside of any concrete base slabs, or as shown on the details. Do not disturb services, and excavate by hand around any existing services as required.

The installer shall measure the rootball depth of each tree to determine the appropriate tree pit depth. Allow additional depth to achieve specified falls for subsoil drainage lines and to satisfy finished levels.

Safety precautions must be in place to prevent public entry to work site area.

#### 10. Existing pavement

The existing pavement shall be cut by a road-saw or other suitable tool to the dimensions shown in the details. Cutting shall only be at right angles and parallel to the kerb. The cut shall have a neat straight edge and smooth face. Kerbs must not be cut under any circumstances. In the case of cutting unit paving, ensure that the cuts are made along the joints without damage to the surrounding pavers. Unit paving may be dismantled rather than cut if this option minimises damage.

#### 11. Subgrade preparation

Cultivate or rip the subgrade at the base and sides of tree pits to a depth of 100mm. During cultivation, thoroughly mix in any materials required to be incorporated into the subsoil. Remove stones exceeding 70mm and any rubbish or other deleterious material brought to the surface during cultivation. Grade the base of tree holes to the required design levels and shapes after cultivation.

#### 12. Root control barriers

Root barriers will typically not be required, and shall only be installed when specifically instructed by Council.

#### 13. Soil and tree rooting volumes

Some sites may have existing site soils that are incompatible with tree root growth, have paved surfaces requiring heavy compaction of the site soils, or sites where all soil media available to trees needs to be imported. The following table specifies the minimum drained soil volume for trees where the soil volumes require improvement.

Tree planting	Harsh planting sites (Minimum soil volume per tree)	Favourable planting sites (Minimum soil volume per tree)
Small trees (<7m height / 5m spread)	15m3	10m3
Medium Trees (7 – 15m height/ 6-10m spread)	50m3	30m3
Large Trees (15m+ height / 12-15m spread)	80m3	50m3

Important notes regarding above table and volumes:

- 1. Harsh planting sites are those that have moderate to high temperatures, winds, hard paved surfaces surrounding, shallow soil profiles (A and B horizons) and no organic mulch.
- 2. Favourable planting sites are those that are partially shaded and protected from winds, with limited hard / paved surfaces, low reflection, moderate soil depth (600mm+) that is free draining and organic mulch applied regularly.
- 3. When the tree is irrigated regularly, soil volume can be reduced by 10%.
- 4. Where the trees have shared root systems, soil volume can be reduced by 10%.
- 5. When using structural soils, the volume of rock or plastic cells (or other) must be subtracted to determine soil rooting volumes. However, the soil depth can often be increased due to increased air at depth, provided there is adequate drainage.
- 6. Council may relax requirements for single infill or replacement trees when existing pavements can not or are not being disturbed.

#### 14. Soil- testing and investigations

For all sites to be planted a site soil investigation shall be conducted as part of the planting operations. This assessment shall typically be carried out for all sites, whether natural or disturbed.

A representative site soil survey shall be carried out to identify and assess any adverse physical or chemical soil properties that may impact on the future successful establishment of a tree to the site. Record findings as part of the tree planting work, report any significant issues to Council, and make recommendations for any soil or site remediation work required to make the site suitable for tree planting.

Upon excavation, if the tree site appears to show poor subterranean condition (poor drainage, contamination, or anaerobic conditions), the installer shall immediately notify the Council.

#### 15. Soil- profiles and depths

The required soil profiles are dependent on the location and type of materials placed around the tree base. The following plantings shall have the following profile horizon structure.

The following planting types shall have the following soil depths as a minimum.

Planting type	Total drained soil depth	Topsoil depth (Soil Type A horizon)	Subsoil depth (Soil Type B horizon)
Trees planted in paved locations, with decomposed granite or porous paving around the tree base. (100L – 200L nominal tree size)	Minimum 700mm Maximum 800mm	nil	700mm
Trees planted in grass or garden beds with organic mulch surface treatment. (100L – 200L pominal size)	600mm	200mm	400mm

Important Note: These soil depths are above all drainage layers or soils known to be freely draining. Further, these soil depths are minimums, and topsoil must not be increased beyond 400mm.

#### 16. Drainage layers

Where a drainage layer is coarser particle size than around 5mm diameter, a transition layer may be needed between it and the soil media to prevent soil migrating into the drainage gravel layer. Generally this will be an intermediate very coarse sand or fine gravel. Do not use geotextile fabrics over the drainage layer to prevent soil migration.

#### 17. Subgrade preparations

Before installing specified tree pit backfill soil, the following subgrade treatment must be applied to all finished subgrade areas:-

- Smooth and trim to relative level to accommodate the required overall soil depths
- Remove rocks > 70 mm diameter
- Remove rubbish such as construction generated waste, concrete slury, plastics, metals and glass

- If required by soil testing, apply any necessary soil ameliorants to subgrades
- Use appropriate hand tools when working on smaller sites / individual tree pits or around underground services. If size permits use an excavator with a tyne attachment to loosen the subgrade and mix the ameliorants to 200 mm depth to incorporate. Break up clods but do not overly compact or smooth (leave the surface 'keyed' to accept the imported soil mixes).

#### 18. Soil- types and mixes

Soil Type A - Normal Tree Planting Topsoil (A Horizon) A sandy loam to clay loam topsoil mix designed for general purpose, on-grade landscape garden bed planting of grasses, woody and herbaceous annuals and perennials that have a high nutrient requirement for sustained optimum growth, and are not subject to compaction by pedestrian or other traffic.

A suitable commercially available product such as Hills Bark Blower® Premium Organic Garden Mix, or Benedicts Organic Garden Mix (M13), or an approved equivalent manufactured garden soil with a maximum 20% organic matter by volume, may be used.

The heavier textured soils in this specification may require the use of engineered solutions (drainage techniques) where excessive wetness is anticipated. Note that the organic soil variant should not be chosen for low P plantings and should not be used below 300mm.

The use of site reclaimed topsoil may be permitted, subject to investigation and testing

#### Soil Type B -Imported Subsoils or Ameliorated Subgrades (B Horizon)

This specification is to be used to manage the importation of subsoil, or its manufacture from on-site materials, where existing subgrades do not provide sufficient quality to qualify as a rooting medium to provide rooting depth and volume sufficient for larger plantings.

A suitable commercially available product such as Hills Bark Blower® B Horizon Mix, or Benedicts 80:20 Washed Sand and Screened Soil Blend, or an approved equivalent manufactured soil with a maximum 5% organic matter by volume, may be used.

This soil shall be generally a low organic matter material that is well balanced chemically, is not saline or sodic or excessively acidic or calcium deficient and not dispersive. It is designed to provide improved rooting depth for larger plantings and reduce the likelihood of waterlogging. It may be made using existing site subsoil or imported fill materials or a blend of both. It is not generally considered to require the application of fertiliser but must be low in P if used for P-sensitive plantings.



#### Drainage and Transition Layers - Coarse Sand

This shall be washed, sharp coarse river sand 0.25 to 2.0mm in diameter, free of weeds, debris or other deleterious material.

#### 19. Soil- physical and chemical properties

Generally, all soils must be free of 'unwanted material' and must meet all the requirements of the Tables that follow. Where variations from these requirements occur refer to Soil Quality Control specifications and hold points.

Soil - Physical Property	Units	Normal Target Range
Texture, preferred range	n/a	Sandy loam to clay loam
Organic matter	% dwb	< 25 Type A < 5 Type B
Permeability (@ 16 drops by McIntyre Jakobsen)	mm/h	> 30
Wettability	mm/h	> 5
Dispersibility in water		1 or 2 (AS 4419) category
Particles sizes (naturally occurring)		
>50 mm	% w/w	nil
> 20 mm	% w/w	< 10
2–20 mm	% w/w	< 20
Visible contaminants > 2 mm (glass, plastic and metal)	% w/w	< 0.5

Chemical Property	Units	Normal Target Range
pH in water (1:5) Standard range	pH units	5.4-6.8
pH in CaCl2 (1:5) Standard range	pH units	5.2-6.5
Electrical conductivity (1:5)	dS/m	< 0.65
Phosphorus – P-tolerant/ standard plants. Acid soils method 18F1	mg/kg	50–150
Phosphorus – P-tolerant/ standard plants. Alkaline soils method 9B1 or 9C1	mg/kg	30-60
Phosphorus for P-sensitive plants, acid soils method 18F1	mg/kg	< 30
Phosphorus for P-sensitive plants, alkaline soils method 9B1 or 9C1	mg/kg	< 20
Exchangeable sodium (Na)	% of ECEC	< 7%
Exchangeable potassium (K)	% of ECEC	5–10%
Exchangeable calcium (Ca) method 18F1 or 15A1 in alkaline soils	% of ECEC	60-80
Exchangeable magnesium (Mg)	% of CEC	15–25
Exchangeable aluminium (Al)	% of CEC	< 2
Exchangeable Ca:Mg ratio	Ratio	3–9
Available iron (Fe)	mg/kg	100-400
Available manganese (Mn)	mg/kg	25–100
Available zinc (Zn)	mg/kg	5–30
Available copper (Cu)	mg/kg	1–15
Available boron (B)	mg/kg	0.5-5
Available N (N as nitrate)	mg/kg	> 30

#### Note 1 to Properties Table

For alkaline soils the pH in water (1:5) range shall be 6.8-8.0 For alkaline soils the pH in CaCl2 (1:5) range shall be 6.5-5.5

Note 2 to Properties Table: Base level requirements for fertilisers are to be verified by laboratory testing and per agronomist's report.

#### 20. Soil- testing and quality control

The installer must verify compliance with the product specification. This is done in two parts: initial compliance certification and then quality control, as described below.

Before any soil installation, the installer or soil manufacturer will submit samples of trial blends likely to meet the performance specifications to a testing laboratory. The trial blend must be based on available test information on components and, if necessary, employ an agronomist for

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advice. They must allow sufficient time for testing and re-formulation in the case of failure to satisfy the performance criteria. Once compliant, a test certificate clearly stating compliance with the applicable criteria must be presented to the Council.

Manufacturer's product representation: For imported soils from soil manufacturers, a 'product representation' document produced by the supplier may be accepted as compliance certificate if:

- it is an off-the-shelf product line, not a custom mix
- a representative test certificate is available and is acceptably recent (within 6 months)
- the testing covers all those criteria in the performance specification, and
- the manufacturer's quality assurance system is externally certified.

#### 21. Soil- quality record keeping

Growing media initial compliance certification records must be kept in an easily retrievable manner that provides for traceability of purchase and location on site. Each compliance certification for all the product specifications used on site must be identified by date, quantity to be supplied and a copy of the formulation used to reach compliance.

All quality control and compliance testing as required by the product specifications must be arranged by the installer, and carried out by an approved soil testing laboratory. All compliance records will be made available to the Council on request.

Compliance certificates will be in the form of a report clearly stating the material is compliant, with an attachment showing the test result relied upon. In the case of minor non-compliance or substantial compliance, a clear statement must be obtained from a qualified independent agronomist waiving the compliance and certifying the sample is compliant with or without conditions.

#### 22. Soil - non-compliance

In the case of substantive non-compliance, a clear statement must be obtained from a qualified independent agronomist waiving the need for compliance and certifying the sample is fit for purpose.

Typically, there shall be no further placement of the soils that are non-compliant until suitable compliance is demonstrated.

Non-compliance with the specified target range criteria does not necessarily render a soil not fit for purpose but making this judgment requires an expert person to take responsibility for such deviation. Also, a conditional compliance certificate may be issued requiring that a certain fertiliser or further organic matter or some other amendment be added, with the aim of achieving compliance.

#### 23. Soil stockpiling

For normal tree planting work there shall be no stockpiling of soils on site. Typically all materials are to be moved directly from the carrier to the hole or only stockpiled for a very short period of time. Adjoining pavement and road surfaces are to be maintained in a clean and tidy state at all times. The pavement surface is to be maintained in a clean and tidy state at all times.

#### 24. Drainage

Subsoil drainage is to be installed as per Council requirements and will be determined on a site by site basis.

#### 25. Bad ground

Bad ground shall be ground considered unsuitable for the purpose of the works, including filling liable to subsidence, ground containing cavities, faults or fissures, ground contaminated by harmful substances or ground which is, or becomes soft, wet and unstable and the like.

If bad ground is encountered in, or adjacent, to any tree pit during the work, notify Council immediately and obtain instructions before carrying out any further work in the affected area.

#### 26. Planting conditions

Do not plant in unsuitable weather conditions such as extreme heat, cold, wind or rain. Avoid planting where unseasonable and adverse weather is forecast within 24 hours of the operations. No trees are to be planted on days exceeding temperatures of 30° Celsius. Generally tree planting is preferred during the cooler months from March to August (autumn and winter).

#### 27. Lifting of trees

It is preferred that all trees are carried or slung via the root ball. In the event that the trees have to be repositioned or lifted by the trunk, the installer shall provide adequate soft padding to the trunk in the form of underfelt, carpet or rubber wrapping and use only soft slings during the lifting. Serious damage to the cambium tissue of the stem as a result of poor lifting techniques will require replacement of the tree.

#### 28. Placement

When the tree pit is excavated and the hole is the correct size, place the rootball in its final position. Ensure the trees are centred and plumb and the top of the rootball level with the finished surface of the surrounding soil mix.

Do not use the trunk of the tree as a lever in positioning or moving the tree in the planting hole.

#### 29. Initial Watering

Thoroughly water the tree rootballs before planting and then immediately after planting. Prevent the rootballs from drying out during the transportation or planting phase.



Apply water so as not to disturb the soil. Raise the moisture within the root zone to field capacity. Ensure potted rootball is thoroughly wet through the entire soil profile. Continue watering at a rate and frequency as required to avoid water stress in the plant.

#### 30. Alignment and orientation

Position the tree at the setout distances as indicated in the details. Ensure trunks are set vertically and aligned with other new or existing trees.

Orient the tree's trunk north where indicated by supplied markings where applicable. (+or- 20°). Adjust within the above tolerances so that the primary lowest branches are generally aligned parallel with the kerb and any adjoining road way (and NOT extending out into roadway).

#### 31. Root trimming at installation

All trees shall have the outer 10-25mm of the external root ball faces pruned or sliced away using secateurs or other suitable sharp blade or spade. Avoid excessive disturbance to the remaining rootball during this trimming and discontinue if excessive rootball soil begins to fall away. Do not leave the rootballs exposed for extended periods. Cover the rootball with moist hessian if backfilling can not occur immediately.

#### 32. Backfilling

Backfill with soil mix as specified in soil mixes and in accordance with the details and specification. Lightly compact the soil to ensure all voids around rootballs are filled and that no air pockets are retained.

Ensure that the backfill soil is not placed over the top of the potted rootball. The top of the rootball and plant stem must be kept level with the top of the backfill.

#### 33. Mulching

Any soil conditioners and mulch shall comply with AS4454-2012 Composts, Soil Conditioners and Mulches. Unless otherwise noted the mulch shall be a minimum of 50mm depth and a maximum of 75mm depth.

Mulch types shall be: -

- 1. minus 15mm sized graded aged horticultural pine bark fines or
- 2. minus 50mm sized recycled urban wood waste
- 3. Decomposed granite gold colour, lightly compacted and installed as shown in details.

Mulch shall be free of deleterious and extraneous matter, including soil, weeds, rocks, twigs and the like. Place the mulch so that it is not in direct contact with the trunk. Feather mulch layers away from trunk at the root crown.

#### 34. Tree establishment period

The tree establishment period commences at the date of practical completion for a period specified by Council.

All trees shall also be maintained immediately following their installation, as per the specifications below, up until the above tree establishment period commences. Tree maintenance works shall be undertaken by an Arborist or Horticulturist with minimum certification in accordance with Australian Qualifications Framework Level 2.

The installer shall submit a program prior to the commencement of the tree establishment period. The program shall detail all works required during the planting establishment period including:-

- 1. Rectification of defects;
- 2. Provision of materials;
- 3. Watering;
- 4. Fertilising;
- 5. Control of weed growth;
- 6. Replacement of dead, damaged or stolen plants.

The installer shall provide 7 days notice of any works to replace trees as part of planting establishment. Throughout the tree establishment period, the installer must continue to maintain new trees and carry out maintenance work including, but not limited to:-

- weeding and rubbish removal from tree surrounds;
- fertilising;
- pest and disease control;
- replacement replanting (on approval from Council);
- adjustment, removal or replacement of stakes & ties;
- formative and selective pruning to AS 4373 and;
- mulching to maintain and reinstate to depth specified.

#### 35. Establishment watering

Allow for 10% of the planted container volume to be applied every 2 days for the first 2 weeks and then 20% of the container volume once per week for 3-4 months. Despite above guideline, installer is to monitor and maintain soil moisture during summer months ensuring the rootball does not dry out and causes wilting. Ensure the bottom of the tree planting hole does not become saturated. (The above is based on spring to early autumn planting – the above frequency may be halved for winter plantings).

Inspection results and the maintenance procedures shall be recorded and submitted to the Council every 3 months. The various ongoing maintenance practices shall be carried out to the satisfaction of Council.

#### 36. Tree guards and supports

The installer shall supply and install 3 wooden stakes with hessian ties per tree, for all trees planted up to 200 litre in size. Where advised by Council, the installer shall allow to supply and install metal tree guards and grates on specified trees.

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When trees are installed within grassed surrounds, plastic collar guards are to be installed regardless of being mulched.

#### **37. Fertilising**

The following table details the required fertiliser program.

Timing	Product and application rate
At time of planting	Slow Release landscape fertiliser suitable for trees and shrubs, 9 to 12 months release time. Osmocote or approved equivalent applied according to manufacturers directions.
6 months after planting and then monthly through to the end of the plant establishment period.	Organic liquid fertiliser. Seasol or approved equivalent applied to soil as per manufacturers directions.

#### 38. Aeration or watering pipes

Only to be installed where detailed within Councils standard details or noted in project specific requirements. The aeration pipe will be 50mm slotted 'Ag-Pipe'. These will be without a geotextile sleeve. Any surface grates will be separately specified by Council, where necessary.

#### 39. Tree bases during establishment

Tree bases surrounded by permeable pavements or flagging etc. shall be left as soil or filled with a thin layer of decomposed granite for the first six (6) months to allow for any settlement of the rootball and backfill soil.

Following the six (6) month settlement period, the tree base as specified in the detail is to be installed.

The tree base is to be maintained in a safe and level condition at all times.

Failure of the tree bases prior to agreed practical completion timing will require rectification by the installer. This failure equates to any area of the tree base slumping/lifting/ cracking or creating a trip hazard (variation of more then 10mm) and will require rectification by the installer.

#### 40. Pavement rectification

Reinstate and make good to match exactly the surrounding pavement, to the satisfaction and approval of the Council, all pavement, paving, concrete, brick or other surface damaged or affected by the tree planting and tree base installation works.

Existing materials salvaged from the site must be approved by the Council for reuse and must match existing pavement. Where temporary asphalt topping is required, approval of Council shall be sought.

#### 41. Failure replacements

Where trees are damaged or die or fail to maintain vigorous growth typical of the species due to neglect or inadequate maintenance, the installer shall replace, replant and maintain trees of the same species, size and quality.





## **APPENDICES** STANDARD TREE PRUNING **SPECIFICATIONS**

#### 1. Overview

Pruning has a direct impact on the health, structure and viability of a tree. All pruning of live tissue results in a wound to the tree, which the tree has to attempt to seal and compartmentalise. Incorrect pruning techniques can, and do, lead to decay and disease within the tree, much the same as a wound in animals can lead to disease and infection.

Pruning of the canopy also has the consequence of removing valuable foliage, which in-turn removes an essential source of energy production from the tree. The tree will then also spend considerable reserves of energy in trying to regrow the losses of the removed foliage. Branches and trunks also hold important transport and storage tissues within the tree.

As per Council's Tree Management Strategy, Council will generally not consider maintenance or creation of views, leaf, fruit, sap or bark drop or bird and bat droppings as valid reasons to prune or remove a tree.



Figure 89: Pruning must be done to strict standards and by professional arborists (Source: Arterra)

#### 2. Canopy pruning

Pruning of branches of street trees shall be as directed by the Council Tree Management Officers. Pruning is only to be undertaken by a qualified arborist (under the supervision of a person with AQF Level 4 or above). Work is to be in strict accordance with to AS4373-2007 Pruning of Amenity Trees. Wounds are not to be treated.

Generally, evaluate the existing plant habit and form together with the desired habit, clearances and form as determined by Council and gain approval prior to any pruning. Minimise the size and number of wounds resulting from all pruning.

Use crown maintenance techniques on all protected trees to improve health and appearance. Use crown modification techniques on all protected trees to accommodate adjacent proposed structures and future construction access. Ensure remaining canopy is balanced with appropriate weight and crown distribution.

Use only clean, sharp pruning implements for all pruning work, ensuring that cuts are made without damage, tearing or bruising of vascular tissue.

#### Deadwooding

Remove all dead branches greater than 30mm in diameter as required on young trees less than 5m in height. Remove all dead branches of greater than 50mm diameter for existing mature trees greater than 5m in height.

#### **Formative Pruning**

Selectively remove branches as required to promote proper form and branching habit, typical for the natural growth habit of the species. For species with an excurrent branching habit, ensure the development of a dominant central leader. Remove lesser competing leaders where required. Ensure that no greater than 15-20% of the total foliage area is removed at any one time. Trees occurring below new or existing overhead power lines shall be pruned to create a lower and multi-branched canopy well below minimum clearances in line with Ausgrid guidelines.

#### Selective and Reduction Pruning

Remove identified branches for building clearance requirements. These should be removed to a suitable internal lateral branch at least 1/3 the diameter of the branch removed or to the branch collar at the stem. Also remove any broken, damaged and defective branches as required. Remove crossing and rubbing branches and branches with included bark at their junction to ensure proper form and branching habit as required.



## Appendices Standard Tree Pruning Specifications

#### **Crown Lifting**

Remove the lower branches as required to create adequate vehicular and pedestrian clearance up to a minimum height of 2.4m on the pedestrian side or over parking lanes and 4.5m on the trafficable roadside lanes (at 1 metre radius from the centre of the main trunk and outward). Ensure that at least 50% of the foliage arises from the lower two-thirds of the trunk.

#### **Epicormic Growth and Suckers**

Typically remove all epicormic growth occurring on the main trunks or basal suckers as and when they occur. If major pruning was undertaken it may be necessary to manage and allow some epicormic growth to mature to provide necessary foliage cover.

#### Palms

Only remove the old and spent fruits and fronds. Never remove the terminal shoot. To avoid transmission of diseases, tools shall be thoroughly disinfected between trees.

#### 3. Root pruning

Pruning roots of Council managed trees shall only be as directed and approved by the Council Tree Management Officers. Root pruning shall be undertaken only a qualified arborist (AQF Level 4 or above).

Prior to any excavations, check that there are no existing underground services along the proposed cut lines that may be damaged. Roots are not, under any circumstances to be cut using normal excavation machinery of any sort. This usually results in splitting and massive disturbance well past the intended line of the cut.

Preliminary root pruning using a high pressure water knife or air spade is allowable along an alignment of the final cut. Using a high pressure water jet, cut through the soil and tree roots from the surface down to the nominated depth or rock, whichever comes first and in the location(s) as shown on any supplied drawing(s) or as directed by Council. All visible roots greater than 50mm diameter are to be exposed by hand excavated and then pruned if necessary to provide clean cuts.

When required to cut roots, use only appropriate and sharp hand tools (e.g. secateurs, hand saw) such that the remaining root system is preserved intact and undamaged. Roots are to be typically cut back by hand, and square to the edge of the excavation. Do not cut any tree roots exceeding 100mm diameter unless permitted by Council and after detailed evaluation by an AQF Level 5 arborist.

Excavations within root zones should be kept open for as short a period as possible. Any excavated faces containing fibrous roots is to be supported immediately after excavtion, where necessary, to prevent soil loss from around the retained roots

#### 4. Post root pruning care

Cover the cut face of the roots with moist hessian or jute immediately after pruning. Maintain in a moist state until permanent or temporary backfilling can be achieved.

If no temporary measures are required and finished levels can be achieved, backfill all excavations around tree roots with a mixture consisting of one part by volume of site soil and three parts of washed course sand with a neutral pH value, free from weed growth and harmful materials. Place the backfill in 150-200mm layers and thoroughly water the root zone surrounding the tree.

Apply root inducing hormone, Auxinone by Barmac Industries (or an approved equivalent) at a rate of 1 part Auxinone to 50 parts water together with a soil wetting agent to the area around the cut root surfaces once per month for 3 months.



Figure 90: Root pruning must be done only when absolutely essential and to strict standards and with utmost care. (Source: Arterra)

## **APPENDICES** STANDARD TREE PROTECTION SPECIFICATIONS

#### 1. Staff training and inductions

All staff working on the nearby Construction sites must be properly inducted and briefed regarding tree protection prior to working on the site. All inductions shall include description and identification of the Tree Protection Zones (TPZ) and the restriction on the work and activities with regard to the trees.

The site foreman shall ensure that all new staff and contractors are appropriately inducted and that brief "tool box" meetings are conducted regularly to ensure Tree Protection is maintained at the forefront of all construction workers minds and they aware of the following tree protection requirements.

#### 2. Temporary tree protection fencing

All tree protection fencing shall be either 1800mm high galvanised chain wire or welded mesh with a minimum of one lockable gate into each separately fenced enclosure. Fence posts are to be minimum 50mm diameter galvanized steel posts. Excavated concrete footings are not permitted. Temporary above ground fencing must be bolted together and secured with all necessary back stays and bracing to prevent it being easily moved or blown over.

Note : Star pickets and bunting or danger tape shall not constitute acceptable tree protection fencing.

#### 3. Trunk and branch protection

Trunk and major limb protection shall be installed to any tree within 5 metres of the work site prior to any delivery of machinery or works commencing, and shall remain in place for the duration of the works. It shall consist of wrapping of each tree trunk and any major branches within the work area with either a suitable coils of 50mm plastic 'ag' pipe or a double layer of hessian or similar material to limit damage. The under lying protection material must not be fasten in place with non expandable wire or cable ties or the like that my injure the bark when the tree grows and expands. The installer must then space planks (50mm x 100mm or similar), at maximum 100mm intervals, and fixed against the trunk and underlying protection material with suitable metal strapping. The trunk protection boards shall not be fixed to the tree in any instance, or in any fashion, e.g., no nails or screws are to be used. When protecting irregular trunks or larger branches the length of the protection battens may need to be tailored in length the better work with the bends and shape of the branches

For smaller and recently planted street trees, the trees may be better protected using temporary fencing panels or suitably positioned water-filled barricades.

#### 4. Trenching and excavations near trees

All the excavations and trenching within the Tree Protection Zone radius of street trees shall be by non-destructive methods only and carried out under the supervision / direction of an appropriately qualified (AQF5) consulting arborist. Hand excavation using suitable hand tools is the preferred method of excavation. If water jet and vacuum extraction are employed, the water pressure must be kept as low as possible to minimise the likelihood of damaging the bark surrounding any roots exposed.

All roots encountered greater than 50mm diameter are to be retained and carefully exposed. Conduits and services, if required to be installed are to be carefully threaded through and under available voids to minimise any root damage and protect the trees.

Any minor roots encountered when undertaking trenching, may be cut cleanly at the edge of the trench by the installers, using a sharp, clean handsaw, if necessary, although it would be beneficial if they could be retained and worked around, like in the other situations above, wherever possible.

Approval must be sought from the Council to cut any roots greater than 50mm diameter.

### 5. Demolition and ground protection

Demolition of paths and other structures required within a TPZ shall be done with small tracked equipment or by hand, with care to limit damage and disturbance of the root zone. All such work within TPZs shall be directly supervised and overseen by a qualified Project Consulting Arborist (AQF5).

Vehicular movement and access shall typically not be approved through the TPZ areas, however if it is necessary and it is proposed to create any access or haul road, or similar access for construction, the Contractor shall install rumble strips / boards over the TPZ ground surface. No excavation below existing levels shall be allowed. The Contractor must first place a suitable permeable geotextile to the extent required and then a 100mm thick layer of wood chip mulch or coarse no-fines gravel over the extent to be covered with the rumble strip / boards. Then place hardwood boards (minimum 3600 x 200 x 75mm) on their flat edge, side by side, with a 30 - 50mm gap to form a rumble strip. These boards are to be held together with three galvanised metal bracing straps nailed to each board. The two outer straps are to be approximately 200mm in from the ends of the boards. The third strap is to be along the centre line of the boards.



## Appendices Standard Tree Protection Specification

#### 6. Canopy pruning

The Contractor shall not undertake pruning of any branch of any street tree without permission. If pruning or small branches or limbs are required for machinery access, or any other reason, contact the Council's Street Tree Coordinator.

#### 7. Kerb removal adjacent to trees

Existing sections of kerbs adjacent to any street tree shall not be removed without approval from the Council Coordinator. Removal of kerbs adjacent to mature trees that are resting on relying on that kerb can cause trees to become unstable and fail or damage important roots.

#### 8. Tree protection signage

Suitable signage as defined by AS 4970-2009 Appendix C shall be affixed to the external side of the fencing at a spacing of not less than 1 sign per 30 lineal metres of fence.

Temporary signs, or any other items, shall not be fixed or attached to any street tree.

#### 9. Stockpiling and storage of materials

Typically no unauthorised access, storage of materials or stockpiling shall be permitted within the Tree Protection Zones once they are established. The following shall be specifically excluded from occurring with established and defined TPZs:

- Placement of site sheds or parking of cars, trucks or any other machinery within the fenced TPZs,
- Stockpiling of materials, or installation of machinery washout areas within or immediately upslope from a TPZ or any other protected tree;
- The washing down of wheel barrows, concrete pumping equipment, paint cans/brushes, acids etc. near existing trees (Whether fenced or otherwise).
- Fuel powered pumps or generators or air compressors;
- Storage of chemicals, fuel or other powered mechanical equipment;
- No refuelling or servicing of any vehicle or equipment within a TPZ

#### 10. Damage to trees to be retained

Any damage sustained to any Council street or Park trees, or a tree required to be protected under the conditions of a Development Application is to be immediately reported to the Council's Coordinator, to determine the appropriate response for maintaining the health and structural integrity of the tree(s).

Should any damage occur to Council's trees and not be rectified by the Contractor to a satisfactory standard, as directed by Council's Street Tree Coordinator, Council will undertake the necessary works, which may include the full replacement of trees, and all associated costs will be recovered.

Damage to Council trees may also result in a prosecution being sought under Sections 626 and 629 of the Local Government Act for an offence where such damage occurred wilfully or negligently. Significant financial penalties can be imposed for such offences.

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Liverpool City Council

TYPE 1a - TREE PLANTING IN WIDE OPEN TURF





NOTE 1: All details are to be read in conjunction with any site specific DA conditions or Council issued Contract Documentation. Refer also to Liverpool City Centre Public Domain Technical Manual for tree planting details within this area where applicable.



NOTE 1: All details are to be read in conjunction with any site specific DA conditions or Council issued Contract Documentation. Refer also to Liverpool City Centre Public Domain Technical Manual for tree planting details within this area where applicable.







NOTE 1: All details are to be read in conjunction with any site specific DA conditions or Council issued Contract Documentation. Refer also to Liverpool City Centre Public Domain Technical Manual for tree planting details within this area where applicable. NOTE 2: Existing Trees a. Size of tree pit may vary depending on depth of surface roots or trunk flare of mature trees. b. Paving construction may be altered to accommodate tree roots at the direction of Council. c. Tree pit surface to be installed level with surrounding paving, leaving surface roots exposed where necessary. K 900 (or as specified) (1500 or greater preferred ed) 1 WSUD OPTION: Cut 50mm diam, hole at 30-45° angle towards direction of flow into gutter and push slotted pipe into end for passive watering from stormwater flows. Proprietary kerb inlet installation subject to approval by Council Rigid or Elexible Path Road 50mm diameter slotted pipe without geotextile sleeve around rootball terminating at surface specified Dr as s Temporary tree guard using three 50x50x1800mm hardwood stakes at edge of planting pit. Arrange in triangular form to minimise conflict with opening car doors. Remove prior to final tree base treatment. ۴ Decomposed granite mulch finished level adjacent footpath & kerb level Patt PLAN Containerised tree as specified Grade mulch so that it is kept clear of the stem collar Hardwood stakes as described above and hession band stappled to 50mm diameter slotted watering pipe without geotextile sleeve around rootball terminating at surface (or kerb hole if WSUD option used) Decomposed granite mulch finished level adjacent footpath & kerb leve Subsoil drainage to be installed as per Liverpool City Council requirements and determined on a site by site basis Rigid or flexible path Road Kerb Existing subgrade -\*\$ Soil Mix Type B loosely consolidated within planting hole. Include additives as specified. SECTION 500 1000mm Scale 1: 25 @ A3 Liverpool City Council

#### TYPE 5 - TREE PLANTING WITH DECOMPOSED GRANITE SURROUND

NOTE 1: All details are to be read in conjunction with any site specific DA conditions or Council issued Contract Documentation. Refer also to Liverpool City Centre Public Domain Technical Manual for tree planting details within this area where applicable.














#### 328 ITEM 03 Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management Technical Guidelines) Draft LCC Tree Management Technical Guidelines - May 2024 Attachment 4



TYPE 10 - INDICATIVE TREE PLANTING IN-ROAD BLISTER





Liverpool City Council TYPE 11a - INDICATIVE TREE PLANTING WITH STRUCTURAL SUPPORT & CONTINUOUS TRENCH [PLANS]



NOTE 1: All details are to be read in conjunction with any site specific DA conditions or Council issued Contract Documentation. Refer also to Liverpool City Center Public Domain Technical Manual for tree planting details within this area where applicable.



[SECTIONS]

NOTE 1: All details are to be read in conjunction with any site specific DA conditions or Council issued Contract Documentation. Refer also to Liverpool City Centre Public Domain Technical Manual for tree planting details within this area where applicable.

NOTE 2: All median details are to be verified for adequate drainage and soil depths on a case by case basis.



500 1000mm Scale 1: 25 @ A3

Liverpool City Council

TYPE 12 - INDICATIVE TREE PLANTING IN-ROAD MEDIAN

#### ITEM 03 Draft Tree Management Framework (Tree Policy, Tree Management Strategy, and Tree Management Technical Guidelines) Attachment 4 Draft LCC Tree Management Technical Guidelines - May 2024



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# APPENDICES REFERENCES AND LINKS

IMPORTANT DOCUMENT LINKS

Australian Government - Environmental Protection Biodiversity Conservation Act 1999 https://www.legislation.gov.au/C2004A00485/latest/versions

NSW Government - Heritage Act 1977 https://www.legislation.nsw.gov.au/#/view/act/1977/136

Local Government Act 1993 https://legislation.nsw.gov.au/view/html/inforce/current/act-1993-030

Environmental Planning and Assessment Act 1979 https://legislation.nsw.gov.au/view/html/inforce/current/act-1979-203

Trees (Disputes Between Neighbours) Act 2006 https://legislation.nsw.gov.au/view/html/inforce/current/act-2006-126

NSW Department of Planning and Infrastructure - State Environmental Planning Policy (Infrastructure) 2007 <u>https://www.legislation.nsw.gov.au/#/view/EPI/2007/641/part3/div12</u>

Western Sydney Regional Organisation of Councils (WSROC) Urban Heat Planning Toolkit <u>https://wsroc.com.au/projects/project-turn-down-the-heat/turn-down-the-heat-resources-2</u>

City of Sydney – Greening Sydney Strategy 2023 https://www.cityofsydney.nsw.gov.au/strategies-action-plans/greening-sydney-strategy

Liverpool Community Strategic Plan 2022-2023 https://www.liverpool.nsw.gov.au/\_\_data/assets/pdf\_file/0005/216968/Community-Strategic-Plan-2022-2032.pdf

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NSW Weedwise https://weeds.dpi.nsw.gov.au

144 LIVERPOOL CITY COUNCIL TREE MANAGEMENT TECHNICAL GUIDELINES

# 5.8

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ITEM 04	Liverpool Heritage Advisory Committee of 17 July 2023
Strategic Objective	Healthy, Inclusive, Engaging Embrace the city's heritage and history
File Ref	134645.2024
Report By	Thomas Wheeler - Heritage Officer
Approved By	Mark Hannan - Acting Director Planning & Compliance

#### **EXECUTIVE SUMMARY**

On 17 July 2023, a meeting of the Liverpool Heritage Advisory Committee was held. The Meeting were subsequently tabled at the Ordinary Meeting of Council on 27 September 2023 (CTTE 05) where Council resolved to:

That Council defer this item to the Governance Committee Meeting.

This Report is in response to this Resolution.

#### RECOMMENDATION

That the Committee:

- 1. Receives and notes the Meeting Minutes of the Liverpool Heritage Advisory Committee Meeting of 17 July 2023.
- 2. Endorses that any gateway signage into the Liverpool Local Government Area (LGA) recognises the First Nations and Colonial history of Liverpool.
- 3. Develops a Naming Policy for future Council buildings, spaces, streets and places that recognises the First Nations, Colonial, European and Migrant histories of the Liverpool LGA.
- 4. Considers the naming of one of the community rooms within the Lurnea Community Hub after George Bates.

#### REPORT

On 17 July 2023, a meeting of the Liverpool Heritage Advisory Committee was held and a copy of Meeting Minutes is provided in Attachment 1.

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There are no motions or actions within the Minutes that will have a financial implication for Council.

The key motions of the Meeting as identified in the recommendations of this Report are outlined below:

#### Gateway Signage

Previously, the gateway signage into the Liverpool LGA acknowledged the colonial significance of the area and that Liverpool was the first Macquarie Town.

Recent discussions with the Aboriginal Consultative Committee has indicated a desire to update the existing gateway signage and include an Acknowledgement of Country (First Nations heritage).

The Heritage Advisory Committee supports this approach, however, a comprehensive approach that acknowledges both the Colonial and First Nations heritage of Liverpool is the preferred outcome.

Therefore, the Committee recommends that any gateway signage into the Liverpool LGA acknowledges the first peoples of the Dharug and Dharawal nations, as well as Liverpool being the first Macquarie Town.

#### **Civic Place and Internal Meeting Rooms**

Concern was raised by the Committee that current approaches to naming conventions within Civic Place ignore the Colonial, European and Migrant heritage of the Liverpool LGA.

The Committee recommends that any names of meeting rooms, spaces or venues within the Civic Place development be reviewed by the Liverpool Heritage Advisory Committee for the consideration of including a diverse range of names that recognises the First Nations, Colonial, European and Migrant histories of the Liverpool LGA.

#### Lurnea Community Hub

With the redevelopment of Phillips Park in Lurnea, the George Bates Hall was demolished, and the Lurnea Community Hub building replaced it. George Bates was a local philanthropist who as a member and grandmaster of the Liverpool branch of the Ancient Order of Foresters for some 30 years during the 1940s to 60s, supported the needy in the local community. After retiring and moving to Lurnea to live with his sister near Phillips Park, George Bates continued to support the needy.

The Committee recommends that a meeting room or space within the Lurnea Community Hub acknowledges George Bates and his contribution to the community of Lurnea.

#### **FINANCIAL IMPLICATIONS**

There are no financial implications relating to this recommendation.

#### **CONSIDERATIONS**

Economic	There are no economic and financial considerations.
Environment	There are no environmental and sustainability considerations.
Social	Preserve and maintain heritage, both landscape and cultural as urban development takes place.
Civic Leadership	There are no civic leadership and governance considerations.
Legislative	There are no legislative considerations relating to this report.
Risk	The risk is deemed to be low.

#### ATTACHMENTS

1. Liverpool Heritage Advisory Committee Minutes 17 July 2023.

Agenda

Liverpool Heritage Advisory Committee
17 July 2023
2-4 pm
Level 6 Boardroom – Scott Street
50% plus 1

#### **Councillors:**

Peter Harle Karess Rhodes Councillor Councillor

#### **Community Representation:**

Ruth Grimson Glen Op Den Brouw Vicki Andrews Alison Cukic Community Representative Community Representative Community Representative Community Representative

#### **Council Staff:**

Heritage Officer Governance Consultant LRM Curator Acting Manager City Planning Senior Heritage Project Officer Coordinator City Design and Public Domain Heritage Project Officer

#### **AGENDA:**

- 1. WELCOME, ATTENDANCE, APOLOGIES AND OPENING
- 2. DECLARATIONS OF INTEREST

# Agenda

#### 3. COUNCIL CODE OF CONDUCT WORKSHOP

#### 4. HERITAGE OFFICER REPORT

#### 4.1. Liverpool Comprehensive Heritage Study

HO Introduced AC and SS who outlined the proposed heritage study and advised that they would return for consultation at a later date.

#### 4.2. Heritage Grants Update

HO advised that Council was still awaiting the outcome of the Grant applications.

#### 4.3. Former Liverpool Courthouse

HO advised works were progressing well and Council was now looking at the replacement of the roof and gutters.

#### 4.4. Liverpool Pioneers Memorial Park

HO advised that Council has allocated funding to commence restoration of up to 6 monuments. Contractors are currently being sought for the first batch of works.

#### 4.5. 124 Moore Street Update

HO advised a report will be going to Council recommending that a planning proposal should be prepared for 124 Moore Street.

#### 5. LIVERPOOL REGIONAL MUSEUM AND LOCAL STUDIES REPORT

#### 6. COMMITTEE REP QUESTION

#### 6.1. 01 - Street and Place Naming - Glen Op Den Brouw

#### Question

At the Aboriginal Consultative Committee meeting of 1 December 2022, Danielle Hijazi, Assistant Strategic Planning, addressed the meeting about the changes to the naming convention. Can we please have Danielle address our meeting?

#### Answer

A presentation is currently being organised for the Heritage Advisory Committee.

# Agenda

#### 6.2. 02 - First Nations Artwork - Glen Op Den Brouw

#### Question

At the Aboriginal Consultative Committee meeting of 1 December 2022, Dr Clare Cochrane, Public Arts Officer and Holly Campbell, UAP Company addressed the meeting. UAP were seeking comment and ideas from the committee on themes that could be incorporated into the artwork. Can a representative from UAP also give the Heritage Committee a presentation and ask us for ideas?

#### Answer

This workshop refers to a project specifically related to first nations artwork and acknowledgment of the country within the civic place. Council is currently working with Curio Projects to develop an interpretation piece for the archaeological relics and history of the site which the heritage advisory committee will be involved in.

#### 6.3. 03 - Plan/Street Signage Update - Glen Op Den Brouw

#### Question

Can members of the HAC be updated on the Sophienburg Stairway Sign, Gasworks Carpark sign, Telowra Car Park sign, Napier Park Sign and Cooks Obelisk Signage? I am aware of a plaque being placed near the obelisk, but this is concerning the 250<sup>th</sup> anniversary of Cook's visit to Australia and not about the history of the obelisk

#### Answer

An update will be sought from the Council's Civic Officer and our Operations Directorate who have been tasked with installing the plaques and signage.

#### 6.4. 04 - Old Scout Hall - Glen Op Den Brouw

#### Question

Can members of the HAC be given an update on the heritage status of the old Scout Hall?

#### Answer

A report has been prepared for the July meeting of the Council seeking the commencement of a planning proposal to finalise the heritage listing of the Old Scout Hall.

6.5. 05 - Memorial Pillars - Glen Op Den Brouw

#### Question



Can members of the HAC be updated on the whereabouts of the Memorial Pillars that once stood on Memorial Avenue?

#### Answer

Its whereabouts are unknown, but further information will be sought for the Sept or Dec heritage committee meeting.

6.6. 06 - Alex Grimson Plaque - Glen Op Den Brouw

#### Question

Can you please advise members of the HAC on the location of the Alex Grimson plaque that once adorned the demolished music shell at Bigge Park that was promised to be returned to the Grimson family?

#### Answer

Unknown, information will be sought from the Bigge Park project team.

#### Action

Further investigations will be undertaken to locate the plaque.

#### 1.1. 06 – Collingwood Visitation Precinct Masterplan – Vicki Andrews

#### Question

I notice that the Collingwood Visitation Precinct Masterplan is now on exhibition, would the Committee be told about this, and may it be discussed?

#### Answer

A briefing on the master plan will be sought from the relevant team within Council.

Agenda

#### 2. COMMITTEE REP MOTIONS

#### 2.1. 01 – Gateway Signage – Glen Op Den Brouw

#### Motion

At the Aboriginal Consultative Committee meeting of 1 December 2022, gateway signage was discussed. The Committee's recommendation was for the words.

### Welcome to the land of the Cabrogal people of the Darug Nations. Please walk respectfully on these lands. Always was, and always will be Aboriginal land.

The cost of these signs is estimated at \$9000 and the amount available within the Community Development budget.

In the spirit of reconciliation, truth-telling and historical accuracy I move.

#### That council reinstate the former gateway signage to Liverpool which stated.

#### Welcome to Liverpool, established in 1810, First Macquarie Town

#### Response

The installation of new gateway signage is the subject of direction from the Council. Any proposals or changes would need to be presented to Council for consideration.

**Recommendation:** That gateway signage acknowledges the First Nations and Colonial history of Liverpool

Moved: Glen Op Den Brouw

Result: Pass

#### 2.2. 02 – First Nation Civic Place Dual Naming – Glen Op Den Brouw

#### Motion

At the Aboriginal Consultative Committee meeting of 1 December 2022, members were asked for ideas for dual naming of Civic Place buildings/rooms and library. Will this committee be asked for naming ideas? I move:

That the Heritage Advisory Committee be asked for ideas for naming opportunities and ideas for public art at Civic Place.

#### Response



A direction was provided by Council to staff via a meeting of the Council to dual name buildings and spaces within Civic Place with First Nations appropriate names. This does not relate to public art and is an acceptance of an official acknowledgement to the country.

**Recommendation:** Recommend that the heritage advisory committee be involved in the naming process for dual naming of the Civic Place and internal meeting rooms.

Moved: Glen Op Den Brouw

Result: Pass

#### 2.3. 03 - Nathaniel Lucas - Glen Op Den Brouw

#### Motion

The historical signage for Nathaniel Lucas at Apex Park is perpetually covered in bird excrement. It is neither attractive, readable nor good for our reputation.

#### I move that: LCC reposition the sign to avoid it being covered in bird poo

#### Response

Relocation can be considered, however, to avoid needing to change the archaeological permit it is preferred to request regular cleaning from the parks team.

**Recommendation:** Recommend that the Nathaniel Lucas sign is cleaned and regularly maintained.

Moved: Glen Op Den Brouw

Result: Pass

#### 2.4. 04 – Transit Way Bus Stop Signage – Glen Op Den Brouw

#### Motion

Reference Historic Photos at Transit Way Bus Stops

I have been trying, very unsuccessfully, to have two historic photographs installed at two Transit Way Bus stops. After 50+ emails over 18 months, no one in various organisations wants to be proactive and assist the Liverpool Historical Society with this project. This project was inspired by historical photos I have seen in various places around the city and the state but here, it's not a project that is enthusiastically supported.





I have been in negotiations with mainly Transit Systems and TFNSW and Liverpool City Council. The last correspondence was to Liverpool City Council as my last email from Transit Systems suggested at Liverpool City Council had the final approval.

The two bus stops in question are Brickmakers and Memorial. The photos are of the Memorial pillars that once stood on Memorial Ave and a photo of the workers at the Liverpool Steam and Brickmakers Company c1906. These photos would be seen by thousands of commuters every day. They would both add to the understanding of the history of the local area, why the bus stops are so named and are both visually pleasing.

#### So, the motion is:

The LCC negotiate with Transit Systems and take the relevant steps to have the two photographs installed in the two bus stops which can be supplied by the Liverpool Regional Museum and the Liverpool & District Historical Society.

#### Response

The bus stops located within the T-Way or Transit Way are on TFNSW land and would be subject to contractual arrangements with Transit Systems. Council can make representations to the relevant agencies/authorities, however, the final decision as to whether it occurs would rest with these agencies.

Note that this venture would be one which would likely only proceed if there was no cost to TFNSW, Transit Systems or Liverpool City Council.

Recommendation: Recommends for the matter to be raised at the Traffic Committee.

Moved: Glen Op Den Brouw

Result: Pass

#### 2.5. 05 – Apex Park Outdoor Gym – Glen Op Den Brouw

#### Motion

In 2022, LCC installed an outdoor gym in Apex Park over the graves of the first settlers of Liverpool in contravention of its value RESPECTING OUR HERITAGE. The gym takes up some 5% of the once green space of Liverpool's first cemetery that was one of 11 Governor Macquarie legacy sites in Liverpool. The installation of the gym in one of the oldest colonial cemeteries in Australia was in my opinion a disgraceful act of desecration on the ground consecrated by the Reverend Samuel Marsden. Two other outdoor gyms are already located a few hundred metres away and even more within a kilometre away.

I move the LCC relocate the outdoor gym at Apex Park to another location.



Agenda

#### Response

The idea or concept of a cemetery being used as a place of rest or recreation is not unusual with evidence dating back to the Victorian period regarding the use of cemeteries by the local community when there is a lack of public open space.

The outdoor gym was installed under consent from Heritage NSW, and the National Trusts Cemetery Committee have raised no objections as the installation has not disturbed any graves or resulted in a loss of historic fabric.



Recommendation: Recommends the relocation of the gym out of Apex Park

Moved: Gen Op Den Brouw

Result: Fails (3-2)

Alternate Recommendation: Recommends that any new major works to heritage parks or places owned by LCC are presented to the HAC for advice.

Moved: Cllr Rhodes

Result: Pass

#### 2.6. 06 - The history of Liverpool in 60 objects - Glen Op Den Brouw

#### Motion

The Liverpool & District Historical Society currently has a permanent exhibition "The History of Liverpool in 60 Objects" on display at Liverpool Library that by the end of the year, like the rest

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of the library will be forced to move. Unfortunately for the society, this exhibition has nowhere to go.

I move that: LCC relocate the exhibition "The History of Liverpool in 60 Objects " to the vacant room in Collingwood House for visitors to learn, understand and connect to our history

#### Response

A proposal to install a permanent or semi-permanent exhibition within Collingwood House is not supported as it is inconsistent with the draft activation plan that will be presented to Council at the July Council meeting. The plan envisages a carefully curated interpretation installation throughout the house which will convey the history of the house and Liverpool, while also allowing for the house to maintain flexibility for other opportunities.

There may be an opportunity for pieces of the Historical Societies collection to be included in this interpretation installation, but this would be limited to what contextually relates to the site and the story that will be presented.

**Recommendation:** Council considers the relocation of the Liverpool in 60 Objects exhibition to be displayed at Collingwood House on a temporary basis.

Moved: Glen Op Den Brouw

Result: Pass (4-1 (Vicki Andrews))

#### 2.7. 07 – Lurnea Community Hub – Glen Op Den Brouw

#### Motion

With the redevelopment of Phillips Park in Lurnea, the George Bates Hall was demolished, and the Lurnea Community Hub building replaced it. George Bates was a local philanthropist who as a member and grand master of the Liverpool branch of the Ancient Order of Foresters for some 30 years during the 1940s to 60s, supported the needy in the local community **and it is unacceptable for his name to be erased from history**. After the folding of the Foresters and retiring and moving to Lurnea to live with his sister nearby the park, he continued to support the needy.

I note the recent Mayoral Minute suggesting the name Harry Hunt Memorial Centre. Both Harry and George did similar philanthropic work around Liverpool, and we would not want to see Harry Hunt's name erased from history in 50 years just because no one remembered him. Harry Hunt already has a bridge about to be named in his memory.

I also note that it is believed that Lurnea means '**Resting Place**' in the indigenous language so the name Lurnea Community Hub is very appropriate, and I therefore support that it should remain and does not need dual naming.





I move that:

LCC name one of the meeting rooms within the Lurnea Hub building 'The George Bates Room'.

#### Response

Council is currently undertaking an internal project on the naming/dual naming of the community hub. This work has just commenced and there will be opportunities for community consultation. This suggestion can be passed on to the section of the Council responsible and would be presented to Council once this work has been completed.

**Recommendation:** Council considers the naming of one of the meeting rooms be named after George Bates.

Moved: Glen Op Den Brouw

Result: Pass

#### 3. GENERAL BUSINESS

If necessary, answers to questions during general business may be taken on notice for the subsequent meeting.

- 20 Webster Road RG- concern over the condition of the galvanised steel.
- 73 Flowerdale Road RG approved for demolition of church and church hall and construction on new church. New church has been built and so far the hall has been retained.

#### 4. CLOSE

NEXT MEETING – 18 September 2023

#### GOVERNANCE COMMITTEE MEETING 14 MAY 2024 STRATEGIC PRIORITIES COMMITTEE REPORT

ITEM 05	IT Strategy Development
Strategic Objective	Visionary, Leading, Responsible
	Place customer satisfaction, innovation and best practice at the centre of all operations
File Ref	131113.2024
Report By	John Hanlon - Chief Information Officer
Approved By	Michelle Mcilvenny - Director Customer & Business Performance

#### **EXECUTIVE SUMMARY**

The Customer Experience and Business Performance Directorate has been actively baselining Council's long-term technology strategy to support the growth of the Liverpool Local Government Area. The strategy will be constructed around 4 key areas: Workforce Alignment, Cybersecurity Uplift, Single-Source Solution and a Reporting and Analytics Platform.

#### RECOMMENDATION

That the Committee receives and notes this report.

#### REPORT

The Business Performance function in the Customer Experience and Business Performance Directorate is in the process of developing a Continuous Improvement Program (CIP) to increase Council's performance through excellence in leadership, process management and digital transformation.

The CIP will be built under the guiding principles of the <u>Australian Business Excellence</u> <u>Framework</u>, with a focus on the principles below for Council;

- Doing more with the same (or less)
- Customer at the centre
- People at the heart
- Removing red tape
- Innovation in all areas

The Information Technology Team are in the process of developing a long-term strategy to support the growth of the Liverpool LGA and to meet the changing needs of the business and the community we serve. A review of existing work is being completed along with some

cornerstone projects to improve the operations of the team. The strategy aligns with the pillars and principles of the CIP.

Below is a summary of the cornerstone projects.

#### Leadership Excellence

Over the last 6 months a service review, workforce realignment and benchmarking exercise have been completed to review the functions and structure of the Information Technology Team to;

- ensure that it effectively supported the organisation now and into the future.
- respond to the significant loss in knowledge through the loss of multiple key staff over the preceding 12 months.
- move its focus from maintenance of existing systems to meeting the emerging needs of the organisation.
- support it being focused on internal and external customer needs rather than technology focused.

The resulting structure has two overriding principles;

- Removing the reactive process-driven approach and becoming a driving force in value creation.
- Embedding the Customer Experience into the core of every role.

These principles will be realised across 3 focus areas;

- Enabling the business to function by managing and maintaining existing systems.
- Transforming the way we do business through the introduction of new technologies.
- Illuminating the significance of new and existing datasets to allow for data-driven decision making.

The coordinator roles, in the revised structure, bring operational stability to the team, with the areas focusing on;

- reducing response times to customers, reducing unnecessary red tape, and improving customer satisfaction.
- increasing service reliability, improving cybersecurity and better leveraging existing system capabilities.
- holistic portfolio management, increased pace of project delivery and a simplified enterprise architecture.
- leveraging and exposing existing corporate data for greater customer insights.

#### **Process Efficiency**

Cybersecurity is an increasing threat for all organisations. Over the past six months, the team has been working on the development of a cybersecurity framework and increasing

organisational maturity to detect and prevent cyber threats. By focusing upon a governance, risk and compliance (GRC) approach, in line with recommendations from Cyber NSW and the Australian Signals Directorate, the team is implementing a multi-faceted approach to reduce organisational risk. An initial baseline assessment identified over 350 vulnerabilities within Council's systems. Over the last six months over 50% of these items have been closed out including all items with a high or critical rating. Work continues to further strengthen Council's security posture.

#### **Digital Innovation**

Council currently has many disparate corporate systems with little integration between them. This results in a large amount of double data entry by Council employees as well as creating a segmented environment that prevents a holistic view of Council operations. Consolidation of these systems into a single-source solution will allow for redesign of business processes to cut through red tape and deliver services to our community faster and with more transparency.

A centralised reporting and analytics platform will be established to bring together data from several sources across Council providing a single view to allow Executives and Council members to make informed data-driven decisions. By having near real-time data at hand, assumptions can be immediately tested to ensure that all decisions focus upon maximising value for our community by doing more with the same level of funding.

This is inline with the Council resolution to progress to implement an enterprise software solution, known as Single Source Software Solution.

#### FINANCIAL IMPLICATIONS

Costs associated with development of the IT strategy have been included in Council's budget for the current year and long-term financial plan.

Any additional costs associated with the change to the structure have been proposed in the 24/25 Draft budget and will be phased across future budgets.

Economic	There are no economic considerations.
Environment	There are no environmental and sustainability considerations.
Social	There are no social and cultural considerations.

#### CONSIDERATIONS

#### GOVERNANCE COMMITTEE MEETING 14 MAY 2024 STRATEGIC PRIORITIES COMMITTEE REPORT

	Deliver services that are customer focused.
Civic Leadership	Operate a well-developed governance system that demonstrates accountability, transparency and ethical conduct.
	Actively advocate for federal and state government support, funding and services.
Legislative	There are no legislative considerations relating to this report.
Risk	The risk is deemed to be Medium.
	Inadequate information systems caused by failure to transform and invest in technology systems resulting in inability to keep pace with evolving community needs. The risk is considered within Council's risk appetite.

#### ATTACHMENTS

Nil

#### GOVERNANCE COMMITTEE MEETING 14 MAY 2024 STRATEGIC PRIORITIES COMMITTEE REPORT

ITEM 06	Customer Experience Framework and Program
	Update
	T
Strategic Objective	Visionary, Leading, Responsible
	Place customer satisfaction, innovation and best practice at the centre of all operations
File Ref	137266.2024
Report By	Anna Rizos - Manager Customer Experience
Approved By	Michelle Mcilvenny - Director Customer & Business Performance

#### **EXECUTIVE SUMMARY**

Implementation of the Customer Experience Framework and Program continue across the organisation, with this paper being a progress update for the Mayor and Councillors. The community and Council vision continue to drive the direction and influence of the culture change with a focus on Customer at the Centre, People at the heart.

#### RECOMMENDATION

That the Committee receives and notes this report.

#### REPORT

The Business Performance function in the Customer Experience and Business Performance Directorate is in the process of developing a Continuous Improvement Program (CIP) to increase Council's performance through excellence in leadership, process management and digital transformation.

The CIP will be built under the guiding principles of the <u>Australian Business Excellence</u> <u>Framework</u>, with a focus on the principles below for Council;

- Doing more with the same (or less)
- Customer at the centre
- People at the heart
- Removing red tape
- Innovation in all areas

The Customer Experience Framework and Program are two items that support the principles and pillars of the CIP.

The Customer Experience Framework and Program, Attachment 1, continue to be implemented across the organisation. Roadshows have commenced with each Directorates Management Team about the Framework and the Program, to start to raise awareness of the work and the commitment by Council to improve Customers Experience. The roadshows talk to leaders understanding why this is important and how they as leaders have a roll in the change program.

The information below provides an update of actions in the Program against the 4 pillars of understand, prioritise, engage and deliver.

**UNDERSTAND-** deliver services that are fit for purpose.

- 1. *Training Certification* ELT have endorsed staff undertaking a course related to writing with a customer focus. This will be rolled out shortly.
- Develop a customer voice A lessons learnt session was completed with internal stakeholders after the extra bin service last year with the focus how the customer experienced the communications and service. The session identified what worked well, what could have been improved and actions to be taken. The actions are being followed through.
- Benchmarking best practice Council staff have met with Maitland Council, Hobson Council, Waverley and Bayside Council to understand their approach in improving their community experience.
   Maitland Council have an excellent way to deliver online information about the number

Maitland Council have an excellent way to deliver online information about the number of requests made by customers and information about them on a <u>Mycouncil</u> application on their website. We discussed their approach and the financial and change management investment they have made and will be putting together a business case for consideration by ELT and Council.

Waverley Council have a significant investment of resources in a customer experience uplift program including implementation of live web chats with customers, online training for all staff around customer experience, surveys and awards. They also have a dedicated contractor to track and respond to socials. A social post is captured and sent to the relevant internal department for comment and a response sent back to the customer.

Hobson Council, as part of their customer experience uplift program, have created "<u>Tiger Teams</u>" to quickly solve customer related barriers. Teams are brought together to quickly problem solve barriers and provide solutions to increase the customers experiences of services.

**PRIORITISE** – respond to requests/concerns in a timely manner.

- Report regularly on customer request data Regular reporting to ELT continues to be enhanced and interrogated to improve service delivery and responsiveness for customers. Recently ELT considered analysis of the aging request with a focus on how the relevant areas can be supported to improve responsiveness.
- 2. Spot audits are being conducted on customer requests, which includes calls to customers to understand their experiences, and where necessary escalated to Managers for review and action have occurred or queries about processes happened.
- 3. Interactive Map The interactive map previously presented to Council will be launched on the Councillor intranet site early May 2024.
- 4. Open Access The Council knowledge base that was demonstrated to Councillors previously and installed on mobile phones will also be launched on the Councillor intranet site early May 2024.

#### **ENGAGE** – gather sentiment, report performance and identify improvement opportunities.

 Gather data – The Customer Service Team continue to attend family fun days and community forums, this has seen a genuine engagement with the community about their individual matter and providing a commitment to reporting back to the community. The team have also been involved in the new development of the forum's new approach.

#### **DELIVER** – improve services and report on service levels.

- 1. The revised Customer Experience Policy has been circulated to Councillors and management to gain feedback on approach. Discussions continue to finalise Councils Complaints Handling Policy to launch in conjunction with the Customer Experience Policy.
- 2. The Customer Care Program is currently being rolled out to Managers with an opportunity to provide feedback, which attempts to provide a mechanism for more regular contact with customers about their request status.
- 3. *Improve service delivery* the Council Customer Service Hub has been successfully launched in Yellamundie. The team have seen a significant increase in foot traffic to



the hub, as a result of the library customers awareness The satellite service hub for Moorebank will be launched before 30 June 2024.

- 4. After hours service This service is currently provided by an external company based in Melbourne. The Team are currently investigating the feasibility of introducing this service in house.
- 5. New telephony system For consideration in the 24/24 draft budget is a project to transform the call centre operation to a cloud-based solution to deliver improved experience for our residents. The system is a more comprehensive solution which aims to deliver better integration between systems and support more complex reporting and with remote access.
- 6. During the months of February, March and April 2024, Council received 27,030 calls to 1300 36 2170. 88.6% of the calls were handled with an average wait time of 2 minutes and talk time of 4 minutes.

#### FINANCIAL IMPLICATIONS

Costs associated with the telephony system of \$230k have been included in Council's draft budget as capital expenditure.

Economic	Capital expenditure for the new telephony system allocated in the draft budget for \$230k.
Environment	There are no environmental and sustainability considerations.
Social	There are no social and cultural considerations.
	Deliver services that are customer focused.
Civic Leadership	Operate a well-developed governance system that demonstrates accountability, transparency and ethical conduct.
	Actively advocate for federal and state government support, funding and services.
Legislative	There are no legislative considerations relating to this report.

#### CONSIDERATIONS



#### GOVERNANCE COMMITTEE MEETING 14 MAY 2024 STRATEGIC PRIORITIES COMMITTEE REPORT

Risk	The risk is deemed to be low. The most significant risk factor is
	reputational risk on service delivery.

#### ATTACHMENTS

1. Customer Experience Framework and Program



# **Customer Centric Pillars**

Social Justice Principles - Equity, Participation, Access, Rights



UNDERSTAND needs Deliver services that are fit for purpose

# Actions

- Build customer centric capability
- Awareness Programs
  Training certification
  - Develop a "Customer Voice"
    - Analyse customer demographic data
       Analyse existing
- engagement data - Develop customer personas
- Continue to benchmark best practice
  - Implement a Customer Relationship Management System

Mapping)



based on impact

Respond to concerns in a timely manner

Actions

- Report regularly on Customer Regulast
- Customer Request completion data
- Review Customer Request
- Flocess
- Centred Design Approach to review processes and services (including



**ENGAGE** Meaningfully Gather sentiment, report performance and identify mprovement opportunities

# Actions

- Review approach to community engagement
  - Gather data
- Family Fun Days
   Develop and undertake
  - Active Community Engagement Surveys
    - Community Forums
- Develop Prototype App to streamline interactions Implement a feedback mechanism for direct
  - mechanism for direct customer feedback • Define KPIs and report regularly

DELIVER

seamless quality experiences

Improve services and report on service levels

# Actions

- Review all customer related guiding documents including fast tracking review of Customer & Communication Policy
- Adopt "Plain English" approach to all
- correspondence
  Continually update Customer
  Knowledge base (Live Wire)
  to include FAQs
- Undertake Service Reviews using the Customer Journey Mapping Exercises
- Implement One Stop Customer Service Model – starting at LCP
# NOM 01/NOM02 - 24 APRIL 2024 - Mayoral and ITEM07 Elected Officials Photos Display & WW1 and WW2 Honour Boards

Strategic Objective	Healthy, Inclusive, Engaging Embrace the city's heritage and history	
File Ref	140692.2024	
Report By	M'Leigh Brunetta - Civic & Executive Services Lead	
Approved By	Tina Bono - Director Community & Lifestyle	

# **EXECUTIVE SUMMARY**

The following items were resolved at Council Meeting, 24 April 2024 to be discussed at a Governance meeting at a future date and that this matter be resolved within two (2) months.

# NOM 01 – Elected Officials Photo Display

- 1. Install a historical photo display of all former and current serving Liverpool Mayors to be showcased on an appropriate wall space in Civic Place Tower.
- 2. Install a photo displaying all current serving Liverpool Councillors (group) to be showcased on an appropriate wall space in Civic Place Tower and include:
  - a. the names of each of the Councillors and the ward they represent.

# NOM 02 – WW1 and WW2 Honour Boards

- 1. Note the historically significant WWI and WWII Honour Boards, that were originally displayed on walls within the Memorial School of Arts;
- Liaise with the Liverpool Historical Society and seek approval and release of the WWI and WWII Honour Boards to be mounted on appropriate wall space such as:
  - a. The Memorial Art School;
  - Hilda Davis Community Hall (close to the Historical Society current location); or
  - c. Another appropriate space that connects to Council service and military history which provides access for public viewing.



# RECOMMENDATION

The the Committee:

- 1. Note the presentation and options provided for consideration.
- 2. Selects the preferred option to progress and resolve Council resolution.
- 3. No further report is required to Council.

# FINANCIAL IMPLICATIONS

Costs associated with delivery are included in Council's operational budget for the current year within the Civic Program, Community and Lifestyle.

# CONSIDERATIONS

Environment	Enhance the environmental performance of buildings.
Civic Leadership	Highlights Civic history and protocols.

# ATTACHMENTS

Nil

# GOVERNANCE COMMITTEE MEETING 14 MAY 2024 STRATEGIC PERFORMANCE COMMITTEE REPORT

ITEM 08	Legal Services Policy
Strategic Objective	Visionary, Leading, Responsible
	Demonstrate a high standard of transparency and accountability through a comprehensive governance framework
File Ref	108790.2024
Report By	David Galpin - General Counsel, Manager Governance Legal and Procurement
Approved By	Farooq Portelli - Director Corporate Support

# **EXECUTIVE SUMMARY**

Council's Legal Services Policy sets out arrangements for the control, coordination, management and provision of legal services for and on behalf of the Council. The report attaches a revised version of the Policy, following internal review, which Council is requested to consider and agree.

# RECOMMENDATION

That the Committee agree the attached Legal Services Policy.

# REPORT

Council's Legal Services Policy sets out arrangements for the control, coordination, management and provision of legal services for and on behalf of the Council. The Policy was last considered by Council in 2019.

Following a review of the Legal Services Policy, it is considered that the policy generally works well. Some updates would be beneficial to:

- reference the potential for Councillor-initiated requests for legal advice under the Councillor Access to Information and Interaction with Staff Policy (section 4.3);
- clarify how instructions may be referred to the Legal Services Unit (section 4.2) and when written advice should be obtained (section 4.5);



- enable public reporting of the status of litigation and transactions, provided this does not waive privilege (section 4.8); and
- correct minor errors and cross-references, update role titles and otherwise tidy up the policy.

The proposed Legal Services Policy is attached with the suggested changes tracked.

It is not intended that the Legal Services Policy be placed on public exhibition. There is no legislative requirement for public exhibition and the policy is internally facing and unlikely to have direct community impact.

# FINANCIAL IMPLICATIONS

Costs associated with this recommendation have been included in Council's budget for the current year and long-term financial plan. External legal costs are met from the Legal Services budget, except where other arrangements are in place or are made to meet the requirements of individual matters:

- property acquisitions funded by contributions are met by Property Services;
- projects with capital or grant funding may make provision for legal costs;
- advice required by Council motion will identify a budget for the advice;
- work which cannot be accommodated in the Legal Services budget will require another source of funding to be identified.

Economic	Efficient conduct of legal work supports orderly development in Liverpool and achievement of Council's objectives.
Environment	Legal services support Council's efforts to protect and enhance the environment, including by acquiring land, engaging contractors and taking appropriate action to enforce environment and planning laws.
Social	Legal work may help address social impacts, for example by addressing social impacts in planning appeals, including appropriate terms and conditions in Council contracts and taking action to enforce environment and planning laws.
Civic Leadership	The policy promotes good governance and transparency in relation to the provision of legal services.

# CONSIDERATIONS

# GOVERNANCE COMMITTEE MEETING 14 MAY 2024 STRATEGIC PERFORMANCE COMMITTEE REPORT

Legislative	Local Government Act 1993
	Local Government (General) Regulation 2021
	Pursuant to section 217(1)(a3) of the Local Government (General) Regulation 2021, Council is required to include in its annual report a summary of the amounts incurred by the council during the year in relation to legal proceedings taken by or against the council (including amounts, costs and expenses paid or received by way of out of court settlements, other than those the terms of which are not to be disclosed) and a summary of the state of progress of each legal proceeding and (if it has been finalised) the result.
	The amendments to the Legal Services Policy include, in paragraph 4.8.1, the possibility of publicly reporting information rather than providing quarterly reports to Council. This will allow a single form of reporting to be explored which can keep Councillors informed and capture the information required for annual reporting.
Risk	The risk is deemed to be Medium. The Legal Services Policy is one of the measures employed by Council to manage its legal risks.

# ATTACHMENTS

1. Legal Services Policy

# LIVERPOOL CITY COUNCIL•

# LEGAL SERVICES POLICY

Adopted: 27 March 2024

TRIM: 003894.2024



#### 1. PURPOSE

- 1.1 This policy sets out the arrangements for the control, coordination, management and provision of legal services for and on behalf of Liverpool City Council.
- 1.2 This policy applies to the Mayor, Councillors, members of Council staff and any other persons acting for or on behalf of, or in the name of, the Council irrespective of any delegation or authority issued in the name of any position title or individual member of Council staff.

#### 2. LEGISLATIVE REQUIREMENTS

Evidence Act 1995 Government Information (Public Access) Act 2009 Legal Profession Uniform Law (NSW) Legal Profession Uniform Regulations 2015 Legal Profession Uniform Law Australian Solicitors' Conduct Rules 2015 Legal Profession Uniform General Rules 2015 Local Government Act 1993 Privacy and Personal Information Protection Act 1998 Revised Professional Conduct and Practice Rules 1995 (Solicitors' Rules)

#### 3. DEFINITIONS

Active Legal Matters Register means a register or list of all legal matters, their status and costs which is subject to audit by NSW Audit.

Council means Liverpool City Council.

**CEO** means the Chief Executive Officer of Council.

**CFO** means the Chief Financial Officer of Council.

**Civic Risk Mutual Panel** means a panel of legal practitioners engaged by Civic Risk Mutual in accordance with a Deed of Agreement.

**Client** means the member of Council staff or other person acting for or on behalf of, or in the name of the Council, who is seeking legal services.

**Code of Conduct** means the Code of Conduct adopted by Council in accordance with the Model Code of Conduct prescribed by the Office of Local Government pursuant to the *Local Government Act* 1993

**Code of Conduct Procedures** means a set of procedures to deal with Code of Conduct issues and adopted by Council in accordance with the Model Code of Conduct Procedures prescribed by the Office of Local Government pursuant to the *Local Government Act* 1993 Deputy General Counsel means Council's Deputy General Counsel.

**General Counsel** means Council's General Counsel and Manager Governance, Legal Services and Procurement

LSU means Council's Legal Services Unit.

**Legal Services Provider** means a provider of legal services external to Council and includes a firm of solicitors or a barrister.

**Model Litigant Policy** means the Model Litigant Policy adopted by the Department of Justice NSW from time to time.

**Procurement Standards** means the procurement standards endorsed under Council's adopted Procurement Policy.

#### 4. POLICYARRANGEMENTS FOR LEGAL SERVICES

#### 4.1 The role of LSU

- 4.1.1 The General Counsel has primary responsibility for the control, coordination, management and provision of all legal advice and other legal services for and on behalf of Council.
- 4.1.2 LSU, through its in-house solicitors, is committed to providing professional legal advice and support to all areas of Council and ensuring that the legal service needs of Council are met in a timely and cost-effective manner, which facilitates outcomes in the best interests of Council.
- 4.1.3 LSU provides frank, fearless and independent legal advice and services that take into account the overall interests and business of Council.
- 4.1.4 LSU seeks to provide practical solutions to legal issues and to minimise the risk of claims and litigation against Council.
- 4.1.5 LSU will also strive to preserve and protect the reputation of Council in the community and its standing as a progressive local authority.
- 4.1.6 The role of LSU includes, but is not limited to:
  - a) advising on <u>matters relevant to Council's operations, including</u> <u>specific</u> compliance, organisational governance, risk, and legislative requirements and Council's policies and procedures;
  - b) representing Council in alternative dispute resolution, litigation and claims management;

- c) providing legal advice, including the interpretation and application of legislation and Council's policies and procedures;
- (d)c) reporting on Council's legislative compliance and its claims and contingent liabilities;
- e)d) responding to <u>and defending</u> court proceedings where Council is a party to those proceedings such as <u>where</u> a statement of claim or an appeal summons <u>is received</u>;
- f)e)facilitating responses to requests from third parties under statutory authority;
- <u>g)f)prosecuting enforcement matters and appearing as</u> <u>Prosecutorprosecutor;</u>
- h)g) advocacy and submissions to government or statutory agencies;
- i)h)seeking to recover reasonable professional costs and disbursements;
- j)i) providing periodic training to staff as required regarding compliance and legislative updates;
- k)j) reviewing, advising on, negotiating and drafting contracts, agreements, <u>deeds</u> and any other document required to give effect to the business and interests of Council, including but not limited to conveyancing, <u>and leasing, provision of goods, works</u> and services to Council, and non-disclosure agreements; and
- 4.1.7 All LSU solicitors are admitted to practice in New South Wales and hold current practising certificates.
- 4.1.8 As well as being required to act in accordance with Council policies and procedures, LSU solicitors are officers of the Supreme Court of NSW and their practice and ethical standards must also be in accordance with the Legal Profession Uniform Law (NSW), the Legal Profession Uniform Regulations 2015 and the Revised Professional Conduct and Practice Rules 1995 (Solicitors' Rules) issued by the Law Society of New South Wales and as amended from time to time.
- 4.1.9 The General Counsel may from to time issue guidelines and procedures to assist with the implementation of this policy and the control, coordination, management and provision of legal services for Council.

- 4.1.10Any legal services or advice requested from LSU, or from a Legal Services Provider engaged on behalf of Council, must relate to the business and interests of Council.
- 4.1.11LSU cannot provide legal services or advice of a personal nature to the Mayor, Councillors or members of Council staff.

#### 4.2 Requests for legal services

- 4.2.1 All requests for legal services must be in writing to the General Counsel or Deputy General CounselLSU. Written requests must be submitted:
  - (a) by email to legalservices@liverpool.nsw.gov.au or to General Counsel or Deputy General Counsel;
  - (b) provided in hard copy to General Counsel or Deputy General Counsel; or
  - (c) in such other manner as directed by General Counsel in guidelines or procedures issued under paragraph 4.1.9.
- 4.2.1<u>4.2.2</u> The General Counsel may develop a form (including an electronic form) to be used when requesting legal services. All such requests are to be approved by, and copied to, the relevant Manager (or, in the case of requests by Managers, the relevant Director) of the requesting business unit/division.
- 4.2.2<u>4.2.3</u> For the avoidance of any doubt, LSUCouncil encourages staff to discuss any legal concern and sees value in managing organisational risk in providing opportunities to make preliminary general enquiries without the need to initiate a formal request for legal services. In these circumstances a request for legal services may or may not result from an initial conversation. Please refer to clause <u>4.3.2</u> <u>4.5</u>.
- 4.2.34.2.4 All requests for legal services must include a requested timeframe for completion of the work and a statement of any reasons for any urgency. detailed Detailed information must be provided about the matter or transaction (including a copy of all relevant documents) to LSU at the time a request for services is made. The following information is required before LSU can commence work:
  - a summary of what the matter or transaction is about and, if a contract, details of what has already been negotiated with the other party;
  - evidence that the matter or transaction has first been authorised by the person(s) with appropriate authority;
  - c) the name of the person who will be instructing the LSU;

- all documents (including approvals) and background information relating to the matter or transaction, including all relevant evidence, plans and/or photographs, and any additional documents requested by LSU; and
- e) any other information requested by LSU.
- 4.2.4<u>4.2.5</u> The General Counsel or Deputy General Counsel\_SU shall acknowledge receipt of a request for legal services within 48 hourstwo business days. That acknowledgement receipt is to include an estimate of the time required to provide the service, or an invitation to discuss the time required, and whether a request for any further information that is required.
- 4.2.54.2.6 Requests for legal services and any subsequent information provided will be referred to and accepted by LSU as "instructions".
- 4.2.64.2.7 The General Counsel, in consultation with the referring person, will determine whether the work is to be undertaken by LSU or through the use of a Legal Services Provider.
- 4.3 Councillor-initiated requests for legal advice
  - 4.3.1 Councillors may initiate requests for legal advice by:

(a) Council resolution; or

- (b) request to the CEO to obtain legal advice in accordance with the Councillor Access to Information and Interaction with Staff Policy.
- 4.3.2 Council resolutions for legal advice will be referred in writing to General Counsel for action or to the CEO if 4.6.5 applies. If the CEO agrees to obtain legal advice in response to a request under the Councillor Access to Information and Interaction with Staff Policy, the matter will be referred in writing to General Counsel for action or will be dealt with by the CEO under 4.6.5.

#### 4.3<u>4.4</u> When to contact LSU

- 4.3.1<u>4.4.1</u> Instructions received by LSU are normally dealt with in order of receipt, but receive priority according to the level of importance and genuine urgency. Accordingly, it is important to involve LSU as early as possible in any transaction or matter where legal advice or services are required, including where:
  - a) there is an actual or potential dispute including an imminent or actual threat to commence litigation;
  - b) it is proposed to procure goods or services for Council. If a transaction involves a tender with a specified timeframe, that timeframe should take into account any need for LSU to provide

or seek certain advices, to review material and to prepare and settle documentation (such as draft contracts);

- c) Council is considering a proposal(s) from a third party such as a planning agreement or other agreement; or
- d) A communication is received from a solicitor or barrister.

#### 4.5 Informal commentary

- <u>4.5.1</u> Requests for legal advice through ad-hoc telephone calls and personal attendances on LSU solicitors (including the General Counsel and Deputy General Counsel) and their responses are intended to provide commentary and general information only. They should not be relied upon as <u>specific</u> legal advice unless notified otherwise.
- 4.3.24.5.2 If legal advice is needed in support of Council action, then Fformal, written legal advice should be sought from the LSU. A referral should be made for written legal advice in particular transactions or on matters of interest arising from such communications in accordance with clause 4.2 or 4.3.

#### 4.4<u>4.6</u> External legal referrals and witnesses

- 4.4.1<u>4.6.1</u> Unless otherwise stated in this Policy, the General Counsel is responsible for the control, coordination and management of all Legal Services Providers (including various prosecution agencies such as the NSW Police Force, Environmental Protection Authority and the NSW National Parks and Wildlife Service) and the legal requests referred to those providers. This is to:
  - a) avoid conflicts of interest;
  - b) ensure consistency and quality of service;
  - c) maintain client legal privilege; and
  - d) maximise value from Council's expenditure on Legal Services Providers.
- 4.4.24.6.2 Other than the CEO (who may do so only in accordance with 4.6.5 and 4.6.64.4.5 and 4.4.6) Council staff must not directly engage a Legal Services Provider. For the avoidance of any doubt this applies to the initial engagement of a Legal Services Provider as Council staff may from time to time be requested to correspond with and provide instructions directly to a Legal Services Provider in certain circumstances for the purpose of efficiencies.

- 4.4.3<u>4.6.3</u> The General Counsel must consult with the referring officer before selecting a Legal Services Provider. The General Counsel, however, retains sole discretion as to the selection of this provider and the terms on which such referral of legal work will be made.
- 4.4.4<u>4.6.4</u> Legal Service Providers will be engaged in accordance with the Procurement Standards as adopted by Council.
- 4.4.5<u>4.6.5</u> The CEO may, at his/her sole discretion, directly engage a Legal Services Provider for work that is of a sensitive or urgent nature. Sensitive or urgent matters include but are not limited to:
  - a) Industrial relations or staff matters (which may include seeking advice from LGNSW)
  - b) Public Interest Disclosures
  - c) Suspected breaches <u>or of privacy legislation</u>, corrupt conduct or breaches of the Code of Conduct
- 4.4.64.6.6 For the purpose of clause 4.6.54.4.5, the CEO may direct the Director of City Corporate Support, the Internal Ombudsman or the Manager People and Organisational DevelopmentChief People Officer to directly engage a Legal Services Provider.
- 4.4.7<u>4.6.7</u> All engagements of a Legal Services Provider under clause <u>4.6.5</u>4.4.5 must be notified to the General Counsel including the name of any Legal Services Provider -together with estimated costs. These details will be included in the Active Legal Matters Register and may be reported in the annual report and/or to any auditors as required by the Local Government Act 1993.
- 4.4.84.6.8 The General Counsel is responsible for the control, coordination and management of all expert witnesses. Council staff must not directly engage witnesses, <u>as</u>—\_doing so will jeopardise any claim for client legal privilege over communications with that expert4<u>or</u> witness.

#### 4.5<u>4.7</u> Client legal privilege

- 4.5.14.7.1 Legal communication attracts client legal privilege. Client legal privilege may be waived (or lost) by inadvertent or actual disclosure of the advice or the existence of the advice to a third party.
- 4.5.24.7.2 Client legal privilege is recognised in many circumstances, including (relevantly for Council) as a basis for:
  - a) closing a Council meeting to exclude members of the public under section 10A of the *Local Government Act 1993*;
  - b) withholding documents under the *Evidence Act* 1995 and the *Government Information (Public Access) Act 2009;* and

- c) withholding documents from production under a subpoena or notice to produce, whether or not Council is a party to the legal proceedings.
- 4.5.34.7.3 As a general rule, Council is entitled to claim client legal privilege for any communications between lawyers (including LSU lawyers) and members of Council staff or witnesses, provided those communications are for the dominant purpose of seeking or receiving legal advice or services, or where those communications relate to litigation that has already commenced or is anticipated.
- 4.5.44.7.4 All Councillors and members of Council staff must treat all communications between them and LSU (and any Legal Services Provider) as strictly private and confidential, and only disclose them to others within the Council on a "strictly need to know" basis. Legal advice should not, under any circumstances, be forwarded or even referred to in any published documents or written or verbal communications with anyone outside Council other than in cases of necessity, or for periodical confidential reporting to Council. Disclosing even the most general information about the legal advice may compromise its privileged status.
- 4.5.54.7.5 Communications from LSU to or from Legal Services Providers should not be disclosed to anyone outside Council, without first obtaining the written approval of the General Counsel or Deputy General Counsel.

#### 4.7<u>4.8</u> Notification of matters to the Mayor and Councillors

- <u>4.8.1</u> The General Counsel will keep the Mayor and Councillors apprised of the progress and outcome <u>of</u> major or significant litigation or transactions by:
  - (a) -providing quarterly reports to Council for consideration in confidential session; or
  - (d)(b) publicly reporting information that does not waive legal professional privilege.
- 4.7.2<u>4.8.2</u> All insured litigation, managed by the Civic Risk Mutual Panel, is dealt with through the Civic Risk Mutual Board. Councillors who are members of the Board will receive information through the Board and must adhere to the Board's fiduciary obligations.

#### 4.84.9 Legal advice to be followed – Model litigant

4.8.14.9.1 Other than as set out in 4.9.34.8.2 and 4.9.44.8.3, legal advice provided by the LSU or by a Legal Services Provider is to be followed by Council. It is noted that, pursuant to section 731 of the Local

*Government Act* 1993, Councillors and staff are not liable personally for anything done in good faith.

- **4.8.24.9.2** LSU and Council acknowledge the obligation to act as a model litigant in relation to civil claims and civil litigation in accordance with the Model Litigant Policy adopted by Department of Justice NSW. The obligation to act as a model litigant requires more than merely acting honestly and in accordance with the law and court rule. It also goes beyond the requirement for <u>a</u> lawyer to act in accordance with their ethical obligations. Essentially it requires <u>council Council</u> to act with complete propriety, fairly and in accordance with the highest professional standards.
- 4.8.34.9.3 Council staff who do not wish to follow the advice provided by LSU or by a Legal Services Provider may request that the General Counsel seek a second opinion from another Legal Services Provider. After discussing the matter with the referring officer, the General Counsel may seek a second opinion from a Legal Services Provider in accordance with 4.6 4.4 (External legal referrals and witnesses).
- 4.8.4<u>4.9.4</u> The CEO, or the Council by resolution, may (in writing) authorise Council staff to not act in accordance with advice provided by LSU or by a Legal Services Provider and, in that case, the CEO will inform the General Counsel of his/her decision and the reasons for making that decision.

#### 4.94.10 Review of legal services

- 4.9.1<u>4.10.1</u> Council staff may request that the General Counsel review specific legal services provided by LSU or a Legal Services Provider.
- 4.9.24.10.2 Requests for review must be in writing and contain sufficient information and supporting documents to enable the General Counsel to review the services provided.
- <u>4.10.3</u> The General Counsel must acknowledge receipt of a request for review within <u>48 hourstwo business days</u> and must respond to the request with 14 <u>calendar</u> days (or such other reasonable time having regard to the request and the circumstances).
- 4.9.34.10.4 The General Counsel may conduct a review personally or arrange for another person to do the review and may engage a Legal Services Provider for this purpose.

#### 4.11 Breaches of this policy

4.11.1 A breach of this policy will be dealt with in accordance with Council's Code of Conduct and Code of Conduct Procedures and in the case of staff, will consider the relevant provisions of the Award, relevant policies and/or enterprise/industrial agreements.

# AUTHORISED BY

Council

#### **EFFECTIVE FROM**

27 March 2024

# DEPARTMENT RESPONSIBLE

Corporate Support (LSU)

#### **REVIEW DATE**

27 March 2028

#### REFERENCES

Liverpool City Council: Code of Conduct Liverpool City Council: Code of Conduct Procedures

Liverpool City Council: Ethical Governance: Conflicts of Interest Policy Liverpool City Council: Councillor Access to Information and Interaction with Staff Policy

Model Litigant Policy – NSW Department of Justice:

https://www.justice.nsw.gov.au/legal-services-coordination/Pages/info-for-govtagencies/model-litigant-policy.aspx Procurement Standards

# VERSION

Version	Amended by	Changes made	Date	TRIM Number
1	Council	Original adoption	23 December 2013	270066.2013
2	Council	Complete review	29 July 2015	126646.2015
3	Council	Complete review	27 February 2019	033829.2019
4	Council	Complete review	27 March 2024	XXXXXX <u>003894</u> .2024

# GOVERNANCE COMMITTEE MEETING 14 MAY 2024 STRATEGIC PERFORMANCE COMMITTEE REPORT

ITEM 09	Service review program	
Strategic Objective	Visionary, Leading, Responsible	
	Position Council as an industry leader that plans and delivers services for a growing city	
File Ref	131927.2024	
Report By	George Hampouris - Head of Audit, Risk and Improvement	
Approved By	Michelle Mcilvenny - Director Customer & Business Performance	

# **EXECUTIVE SUMMARY**

This paper provides an overview of Council's Service Review Program (the Program). The requirement to undertake service reviews is driven by legislative requirements. The intent of the Program is to ensure that Council constantly reviews its services and is an opportunity to ensure that service levels or service modelling are constantly being re-calibrated and designed to deliver service excellence and overall best outcomes to the Community.

The Program is one activity of the Business Performance function in the Customer Experience and Business Performance Directorate. The Business Performance function is in the process of developing a Continuous Improvement Program (CIP) to increase Council's performance through excellence in leadership, process management and digital transformation.

The CIP will be built under the guiding principles of the Australian Business Excellence Framework, with a focus on the principles below for Council;

- Doing more with the same (or less)
- Customer at the centre
- People at the heart
- Removing red tape
- Innovation in all areas

This paper will provide an overview of the Program by;

- Introducing the concept of service reviews in the context of Liverpool Council;
- Outlining the legislative environment and requirements which drives it;
- Providing a status to date overview; and



• Delivering Council's vision on formalising its approach towards developing a sustainable service review program and using it as a genuine tool to deliver positive and meaningful change to its services.

### RECOMMENDATION

That the Committee receives an update on its Service Review Program.

#### REPORT

#### What is a Service Review?

Service Reviews provide the opportunity to undertake a whole of organisation, systemic look at the way in which services are delivered. They provide the opportunity to identify improvements in efficiency and effectiveness whilst ensuring that services are meeting the needs of the Community.

Establishing a review process builds the capacity of both staff and the Community to think critically and systematically about current and future service needs. It also leads to innovation in service provision and helps build a culture of continuous improvement within Council.

#### Liverpool City Council Service Review context?

Local Governments are under increasing financial pressure, and there is often a widening gap between revenue and expenditure. At the same time, they are expected to be environmentally and socially responsible and provide a wide range of quality services. Service Delivery Reviews will support Council to clarify the needs of its Community and use an evidence-based approach to assess how efficiently and effectively it is meeting those needs.

In undertaking this process, Council can determine whether changes need to be made to Service Delivery which will provide benefits to all stakeholders whilst being financially sustainable. Council's vision is to conduct Service Delivery Reviews on an ongoing basis to ensure the services being offered are continuously aligned to the Community needs.

#### What are the legislative requirements driving this?

In September 2021 the NSW Office of Local Government published new guidelines for Integrated Planning and Reporting (IP&R), which included a new requirement to publish a program of Service Reviews:

#### As per S404 of the Local Government Act 1993:

(1) A Council must have a program (called its "delivery program") detailing the principal activities to be undertaken by the Council to perform its functions (including implementing

the strategies set out in the Community Strategic Plan) within the resources available under the resourcing strategy.

(2) The Council must establish a new Delivery Program after each ordinary election of Councillors to cover the principal activities of the Council for the 4-year period commencing on 1 July following the election.

Supplementing this are essential elements of what a Delivery Program must consist of (as per IP&R Guidelines). Part 4.3 of these essential elements requires Council to;

"To encourage continuous improvement across the council's operations, the Delivery Program must identify areas of service that the council will review during its term, and how the council will engage with the community and other stakeholders to determine service level expectations and appropriate measures"

This focus on Service Reviews within the IP&R Guidelines follows through to changes made to the NSW *Local Government Act* in 2016 which included a new statement that the role of the governing body is to keep under review the performance of the Council, including Service Delivery (s223(1)(g)).

The responsibility for the oversight of Service Reviews was also included into the responsibility of the Audit, Risk and Improvement Committee (ARIC) (s428A(2)(g)). The oversight over Council's Service Reviews program is therefore included in the ARIC's Charter.

# What is Council's progress to date?

Council's 2022-2026 Delivery Program must identify areas of service the Council will review during its term and the Operational Plans must specify each Review to be undertaken that year. Through its current Delivery Program, Council identified the following Services to be reviewed;

- Development Assessment
- Parks Maintenance
- Libraries
- Children Services

# GOVERNANCE COMMITTEE MEETING 14 MAY 2024 STRATEGIC PERFORMANCE COMMITTEE REPORT

The status of these Reviews are as follows;

Service Area	Progress
Development Assessment	<ul> <li>The outcome of the Service Review was reported in Council's 2022-23 Annual Report.</li> <li>Council is progressing with the recommendations from the Service Review.</li> <li>14 out of the 22 recommendations contained within the report have been completed as at 1 April 2024. Management are working on progressing the implementation of the remaining 8.</li> </ul>
Libraries	<ul> <li>A presentation was delivered to Councillors at the Governance Committee meeting held on 10 October 2023.</li> <li>The presentation informed Councillors of the Library Service Review objective, engagement process and outcomes of the community satisfaction survey.</li> <li>Additional data analysis was requested for individual libraries.</li> <li>Community consultation occurred in March 2024 to capture the impact of Service delivery at Council's new library.</li> <li>The review is scheduled for completion and presentation at the Governance Committee in June 2024.</li> </ul>
Children's Services	<ul> <li>A response to a RFQ was received from Semann and Slattery Consultancy and accepted.</li> <li>The Review is underway with an estimated completion date of June 2024.</li> <li>Meetings have occurred with all Subject Matter Expert's involved in the review.</li> </ul>
Parks Maintenance	<ul> <li>Initial planning phase. Scheduled to be completed in the 2024/25 Financial Year.</li> </ul>

# How does Council seek to further integrate a Service Review Program as part of service excellence?

As it stands Council's Service Reviews are undertaken by the respective Director of the Service. To date these Reviews have been outsourced to maintain an arm's length. For the purposes of Council's ARIC reporting and updating the Annual Report, a status of the Service Review Program is captured centrally by Council's Audit, Risk and Improvement Unit.

In the spirit of the CIP, to increase Council's performance through excellence in leadership, process management and digital transformation, the following steps will be taken to improve the Service Review Program, to focus on Doing more with the same (or less), Customer at the centre, People at the heart, removing red tape and innovation in all areas.

High level service	Particulars	Estimated
review milestones		completion
<b>—</b> ———————————————————————————————————		date
Finalise the development of a Service Review Framework in line with the principles of the CIP and the Australian Business Excellence Framework	<ul> <li>They key objectives of the Service Delivery Review Framework are to:</li> <li>Ensure services are appropriate, they meet community needs and wants and can be adapted into the future</li> <li>Ensure services are effective and that Council is delivering targeted and better quality services in new ways</li> <li>Improve resource management, including identifying opportunities for savings and generating income</li> <li>Adapt a 'whole of organisation' approach to the Review of Services and ensure consistency across Council.</li> </ul>	September 2024
Finalise the development of a Service Catalogue	<ul> <li>Service Catalogue provides a services lens over Council's function rather than through the lens of the organisational structure. This enables Council to: <ul> <li>better understand the cost of that service</li> <li>its cost drivers and</li> <li>the service level it provides to the Community.</li> </ul> </li> <li>This would inform decisions around service trade-offs, engagement of the community in a meaningful way and prioritisation of services to review.</li> </ul>	December 2024
Identify Services for	As part of the development of the next Delivery	June 2025
review 2025-2028	Program, Council is to be presented with data to inform the identification of services to review.	
Implement	Develop accountability metrics and systems to	June 2025
accountability	ensure that any recommendation and decision by	
measures	levels and or improve its efficiency get realised	



and re	ported on through to implementation. This
will be	e done via an action tracking tool with
regula	r reporting and benefits realisation
assess	sments.

# FINANCIAL IMPLICATIONS

There are no costs associated with this recommendation.

# CONSIDERATIONS

Social	Raise awareness in the Community about the available services and facilities.	
Civic Leadership	Deliver services that are customer focused. Operate a well-developed governance system that demonstrates accountability, transparency and ethical conduct.	
Legislative	The legislative requirements are outlined in the body of the report under the title "what are the legislative requirements driving this"	
Risk	The risk is deemed to be Low.	

# **ATTACHMENTS**

Nil