



His Worship the Mayor
Councillors
City of Marion

Notice of Environment Committee

Council Chamber, Council Administration Centre
245 Sturt Road, Sturt

Tuesday, 7 February 2023 at 8.00 pm

The CEO hereby gives Notice pursuant to the provisions under Section 83 of the *Local Government Act 1999* that an Environment Committee will be held.

A copy of the Agenda for this meeting is attached in accordance with Section 83 of the Act.

Meetings of the Council are open to the public and interested members of this community are welcome to attend. Access to the Council Chamber is via the main entrance to the Administration Centre on Sturt Road, Sturt.

A handwritten signature in blue ink, appearing to read "Tony Harrison".

Tony Harrison
Chief Executive Officer

1 OPEN MEETING	3
2 KAURNA ACKNOWLEDGEMENT	3
3 ELECTED MEMBER DECLARATION OF INTEREST (IF ANY)	3
4 CONFIRMATION OF MINUTES - NIL	3
5 BUSINESS ARISING	3
5.1 Business Arising Statement - Action Items	3
6 CONFIDENTIAL ITEMS - NIL	4
7 REPORTS FOR DISCUSSION - NIL	4
8 REPORTS FOR NOTING - NIL	4
9 WORKSHOP / PRESENTATION ITEMS	4
9.1 Workshop Agenda for 2023	4
9.2 Environmental Update	7
9.3 Parliamentary Inquiry into the Urban Forest	8
10 OTHER BUSINESS	40
11 MEETING CLOSURE	40

1 Open Meeting**2 Kurna Acknowledgement**

We acknowledge the Kurna people, the traditional custodians of this land and pay our respects to their elders past and present.

3 Elected Member Declaration of Interest (if any)**4 Confirmation of Minutes - Nil****5 Business Arising****5.1 Business Arising Statement - Action Items**

Report Reference	EC230207R5.1
Originating Officer	Executive Officer to the General Manager City Services – Colleen Madsen
Corporate Manager	N/A
General Manager	General Manager City Services – Ben Keen

REPORT OBJECTIVE

The purpose of this report is to review the business arising from previous meetings of the Environment Committee meetings.

RECOMMENDATION

That the Environment Committee:

1. **Noted as this is the first meeting of the Committee there was no business arising.**

ATTACHMENTS

Nil

6 Confidential Items - Nil

7 Reports for Discussion - Nil

8 Reports for Noting - Nil

9 Workshop / Presentation Items

9.1 Workshop Agenda for 2023

Report Reference	EC230207R9.1
Originating Officer	Executive Officer to General Manager City Services – Colleen Madsen
Corporate Manager	Manager Engineering, Assets and Environment - Mathew Allen
General Manager	General Manager City Services - Ben Keen

REPORT OBJECTIVE

The purpose of this item is to workshop the 2023 Environment Committee Draft Agenda.

RECOMMENDATION

That the Environment Committee:

1. **Adopts the following items as the 2023 Environment Committee Draft Agenda:**
 - April 2023 (Topic/s)
 - June 2023 (Topics)
 - September 2023 (Topic/s)
 - November 2023 (Topics)

ATTACHMENTS

1. EC230207 Schedule of Upcoming Items 2023 (3) [9.1.1 - 2 pages]

Environment Committee – 2022 Schedule of upcoming items

Suggested topics for 2023

- Resilient South Sector Agreement with SA Government – Renewal
- Remnant Native Vegetation Plan

Environment Committee		Date: Tuesday, 1 February	Time: 8.00pm – 9.30pm	Venue: Chamber	
Topic	Type of Report	Description	External Attendees	Staff Responsible	
Business Arising		Business arising from previous meetings, the meeting schedule, and upcoming items		C Madsen	

Environment Committee		Date: Tuesday, 4 April	Time: 8.00pm – 9.30pm	Venue: Chamber	
Topic	Type of Report	Description	External Attendees	Staff Responsible	
Business Arising		Business arising from previous meetings, the meeting schedule, and upcoming items		C Madsen	

Environment Committee		Date: Tuesday, 6 June	Time: 8.00pm – 9.30pm	Venue: Chamber	
Topic	Type of Report	Description	External Attendees	Staff Responsible	
Business Arising		Business arising from previous meetings, the meeting schedule, and upcoming items		C Madsen	

Environment Committee – 2022 Schedule of upcoming items

Environment Committee		Date: Tuesday, 5 September	Time: 8.00pm – 9.30pm	Venue: Chamber	
Topic	Type of Report	Description	External Attendees	Staff Responsible	
Business Arising		Business arising from previous meetings, the meeting schedule, and upcoming items		C Madsen	

Environment Committee		Date: Tuesday, 7 November	Time: 8.00pm – 9.30pm	Venue: Chamber	
Topic	Type of Report	Description	External Attendees	Staff Responsible	
Business Arising		Business arising from previous meetings, the meeting schedule, and upcoming items		C Madsen	

9.2 Environmental Update

Report Reference	EC230207R9.2
Originating Officer	Executive Officer to General Manager City Services – Colleen Madsen
Corporate Manager	Manager Engineering, Assets and Environment - Mathew Allen
General Manager	General Manager City Services - Ben Keen

REPORT HISTORY

Report Reference	Report Title
FORUM230121 Item 1.1	Carbon Neutral Plan and Other Environmental Initiatives

EXECUTIVE SUMMARY

Staff will provide a verbal Environmental update to the Committee.

RECOMMENDATION

That the Environment Committee:

- 1. Notes the update.**

SPEAKERS

Manager Engineering, Assets and Environment – Mathew Allen

ATTACHMENTS

Nil

9.3 Parliamentary Inquiry into the Urban Forest

Report Reference	EC230207R9.3
Originating Officer	Senior Environmental Planner – Rebecca Neumann
Corporate Manager	Manager Engineering, Assets and Environment - Mathew Allen
General Manager	General Manager City Services - Ben Keen

REPORT HISTORY

Report Reference	Report Title
FORUM230121	Carbon Neutral Plan and Other Environmental Initiatives.
ASC220802R8.1	Environmental Sustainability Update.
ASC220405R8.1	Green City Update.

REPORT OBJECTIVE

To provide the Environment Committee with an update on current activities and priorities around trees and urban green spaces and seek feedback for inclusion into a response to an inquiry by the South Australian Parliament's Environment Resources and Development Committee titled "Inquiry into the Urban Forest".

EXECUTIVE SUMMARY

The Environment, Resources and Development Committee (ERDC) has begun an "Inquiry into the Urban Forest" (the inquiry), with a focus on tree species selection and other measures to preserve and improve the tree canopy in metropolitan Adelaide and a focus on trees for urban infill developments.

The ERDC will inquire into and report on:

1. Best practice and innovative measures to assist in the selection and maintenance of site-appropriate tree species to improve the resilience of the urban forest, with a focus on trees for urban infill developments;
2. Legislative and regulatory options to improve the resilience and longevity of trees comprising the urban forest; and
3. Any other related matters.

A draft submission to the inquiry has been included in Attachment 1. Feedback on this submission is sought from Council's Environment Committee for inclusion into a final draft seeking endorsement at the 14 February 2023 General Council meeting.

RECOMMENDATION

That the Environment Committee:

1. **Provides feedback on the Draft City of Marion Submission to the "Inquiry into the Urban Forest" by the Environment, Resources and Development Committee of the South Australian Parliament (Attachment 2) to inform the General Council report to be presented at the meeting on 14 February 2023.**

DISCUSSION

The draft submission highlights the importance of trees to the Marion community and identifies

several key areas for improvement in future tree management. The City of Marion is leading the tree management sector in Adelaide and has staff with significant expertise to advise the ERDC in their inquiry.

Themes raised in the draft submission are also key themes being raised by council staff through responses to the State Government's review of the Planning System and the Adelaide Urban Greening Strategy being developed by Green Adelaide.

Priority areas addressed in the submission include:

- Rapid trend in the loss of trees on private land and the need for better tree protection laws.
- Conflicts between street trees and utilities – particularly power lines.
- The need for more diverse tree species to ensure future resilience to climate change impacts.
- Improved regulation and standards for the arboriculture industry.

The draft submission makes twenty-three direct recommendations to the ERDC that are listed in Attachment 1. Refer to Attachment 2 for the full draft submission.

SPEAKERS

Rebecca Neumann, Senior Environmental Planner	The item will be introduced, and feedback will be sought for inclusion into the final submission.
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ATTACHMENTS

1. City of Marion Draft Recommendations [9.3.1 - 2 pages]
2. City of Marion_ Parliamentary Inquiry to the Urban Forest_ Feb 2023 [9.3.2 - 28 pages]

City of Marion Submission to the “Inquiry into the Urban Forest” by the Environment, Resources and Development Committee of the South Australian Parliament

Draft Recommendations from the City of Marion

1. The ERDC should ensure the final report on this inquiry has recommendations that link to Adelaide’s Urban Greening Strategy (being developed by Green Adelaide) and that Green Adelaide be formally tasked to take the lead in coordinating matters related to the urban forest.
2. The State Government ensures a coordinated approach to a regular Adelaide Tree Census that allows establishment of a benchmarking model of Adelaide’s urban forest.
3. The State Government funds ongoing tree canopy mapping of Adelaide with a focus on monitoring trees on private land with the next round of data collection to include an analysis of species diversity.
4. The State Government works with councils and other stakeholders to identify mechanisms to improve the species diversity of the Adelaide urban forest to bolster its resilience to direct and indirect climate impacts and reduce the overall impact should one or more species be disproportionately impacted.
5. The State Government works with councils, local tree nurseries and research institutions (e.g. TREENET, Waite Arboretum) on a Climate Resilient Trees Trial and Climate Resilient Trees Guideline for Adelaide.
6. The State Government works with councils and the Local Government Association to investigate the development of a private tree planting and maintenance fund.
7. The State Government brings together the Office of the Technical Regulator, Green Adelaide the Local Government Association and utility providers to undertake a review of the regulation of trees on public land.
8. The State Government reviews the PLEC funding model and strategic prioritisation process to better incorporate the benefits of urban greening.
9. The State Government reviews the list of declared weeds and considers including exemptions for species that may have a low threat in urban areas.
10. The State Government works with local government and industry leaders to standardise a tree valuation methodology in South Australia and ensure this valuation is linked to tree protection laws in the state planning system.
11. The recommendations of this inquiry are provided to the Minister for Planning and are incorporated into the final recommendations of the Planning System Implementation Review.
12. State planning laws must establish a clear definition on ‘Reasonable Development’ in relation to trees, e.g. if X amount of canopy cover is lost, the development is not reasonable.

13. State planning laws should enable Council to refuse development if the plans are inaccurate/misleading, forcing private certifiers to ensure all lodged documents are accurate and include impacts to all trees, including those on adjacent public land.
14. There should be no exemption allowing for the removal of Regulated trees within proximity to buildings or other structures unless it can be demonstrated that the tree is actually damaging that structure, and there should be a requirement for the proponent to demonstrate that the value of the structure outweighs the value of the tree.
15. The state government should provide further guidelines on suitable tree selection and long-term maintenance to compliment the mandatory tree planting policy in the state planning system.
16. Declared weeds (under the *Landscape South Australia Act 2019*) should not have a blanket exemption from planning approvals. Instead, applications could be made for defined areas (e.g. woody weed control along a creekline).
17. Remove the exemptions of State Government departments from tree protection regulations (notably the Department of Infrastructure and Transport and Department for Education).
18. Seek opportunities for state-level tree protection planning priorities on Federal Government land (e.g. the Department of Defence).
19. State Government engages with the Local Government Association and councils around the implications of increasing tree regulation and opportunities to manage resource impacts e.g. through leveraging fees or state government provision of funds.
20. There should be no tree species exempt from planning approvals meaning proponents should be required to seek approval to remove/modify ANY TREE above a specific size threshold.
21. The State Government delivers a community campaign on the benefits of trees through the Adelaide National Park City program. The campaign should focus on promoting the benefits of trees.
22. State Government supports further research and collection of evidence around the relationship between trees, bushfire risk and protection of biodiversity
23. The State Government works with industry leaders on a review of the arboriculture industry including professional training standards, accreditation and support for local industry development.

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



This submission has been prepared by the City of Marion for consideration by the Environment Resources and Development Committee of the Parliament of South Australia as part of their *Inquiry into the Urban Forest*.

The response has been prepared based on materials available at:
www.parliament.sa.gov.au/en/Committees/Committees-Detail

This final version has been endorsed by the City of Marion General Council on 14 February 2023.

DOCUMENT PROPERTIES

Contact for further information

Contact Officer: Rebecca Neumann
Title: Senior Environmental Planner
Email: rebecca.neumann@marion.sa.gov.au

VERSION HISTORY

Version	Revision Date	Revised By	Revision Description
1	31/01/22	RN	Draft
2 (TBC)	08/02/23	RN	Draft taking in comments from City of Marion Environment Committee EC230207R1
3 (TBC)	15/02/23	RN	Final submission endorsed by General Council GC230214RXX



Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee



FEBRUARY 2023

Table of Contents

- Executive Summary3
- City of Marion Tree Management5
- About this submission7
- Inquiry Area #1.....8
 - Best practice and innovative measures to assist in the selection and maintenance of site-appropriate tree species to improve the resilience of the urban forest, with a focus on trees for urban infill developments.8
 - Urban forestry requires strategic coordination.....9
 - Climate change is a risk to our urban forest9
 - Best practice urban forest requires species diversity10
 - Tree planting in Adelaide shows very low diversity10
 - Industry change is required to introduce more tree diversity11
 - Better data is the key to better planning11
 - We need to identify new climate-resilient tree cultivars13
 - We need to value the public benefit of trees on private land13
- Inquiry Area #2.....14
 - Legislative and regulatory options to improve the resilience and longevity of trees comprising the urban forest; and.....14
 - There is conflict between trees and utilities14
 - Undergrounding powerlines will avoid conflict with utilities16
 - Weeds are just plants in the wrong place17
 - Tree protection laws in the United Kingdom are ahead of Australia18
 - New developments are the opportunity to get things right18
 - Our planning laws are deficient when it comes to tree protection18
 - Planning System Implementation Review Responses19
- Inquiry Area #3.....22
 - Any other related matters22
 - Community attitudes to trees are mixed22
 - Trees, bushfire and biodiversity23
 - The arboriculture industry needs more professional standards.....24

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



Executive Summary

This submission from the City of Marion addresses the Inquiry into the Urban Forest (the inquiry) by the Environment, Resources and Development Committee of the Parliament of South Australia (ERDC).

For context, the submission first includes some background on tree management at the City of Marion and a summary of how this submission has been developed.

The submission then directly addresses the three focus areas being examined by the ERDC:

1. Best practice and innovative measures to assist in the selection and maintenance of site appropriate tree species to improve the resilience of the urban forest, with a focus on trees for urban infill developments;
2. Legislative and regulatory options to improve the resilience and longevity of trees comprising the urban forest; and
3. Any other related matters.

The following recommendations to the ERDC are made in this submission:

1. **The ERDC should ensure the final report on this inquiry has recommendations that link to Adelaide's Urban Greening Strategy (being developed by Green Adelaide) and that Green Adelaide be formally tasked to take the lead in coordinating matters related to the urban forest.**
2. **The State Government ensures a coordinated approach to a regular Adelaide Tree Census that allows establishment of a benchmarking model of Adelaide's urban forest.**
3. **The State Government funds ongoing tree canopy mapping of Adelaide with a focus on monitoring trees on private land with the next round of data collection to include an analysis of species diversity.**
4. **The State Government works with councils and other stakeholders to identify mechanisms to improve the species diversity of the Adelaide urban forest to bolster its resilience to direct and indirect climate impacts and reduce the overall impact should one or more species be disproportionately impacted.**
5. **The State Government works with councils, local tree nurseries and research institutions (e.g. TREENET, Waite Arboretum) on a Climate Resilient Trees Trial and Climate Resilient Trees Guideline for Adelaide.**
6. **The State Government works with councils and the Local Government Association to investigate the development of a private tree maintenance fund.**
7. **The State Government brings together the Office of the Technical Regulator, Green Adelaide the Local Government Association and utility providers to undertake a review of the regulation of trees on public land.**
8. **The State Government reviews the PLEC funding model and strategic prioritisation process to better incorporate the benefits of urban greening.**

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



9. The State Government reviews the list of declared weeds and considers including exemptions for species that may have a low threat in urban areas.
10. The State Government works with local government and industry leaders to standardise a tree valuation methodology in South Australia and ensure this valuation is linked to tree protection laws in the state planning system.
11. The recommendations of this inquiry are provided to the Minister for Planning and are incorporated into the final recommendations of the Planning System Implementation Review.
12. State planning laws must establish a clear definition on 'Reasonable Development' in relation to trees, e.g. if X amount of canopy cover is lost, the development is not reasonable.
13. State planning laws should enable Council to refuse development if the plans are inaccurate/misleading, forcing private certifiers to ensure all lodged documents are accurate and include impacts to council trees.
14. There should be no exemption allowing for the removal of Regulated trees within proximity to buildings or other structures unless it can be demonstrated that the tree is actually damaging that structure, and there should be a requirement for the proponent to demonstrate that the value of the structure outweighs the value of the tree.
15. The state government should provide further guidelines on suitable tree selection and long-term maintenance to compliment the mandatory tree planting policy in the state planning system.
16. Declared weeds (under the *Landscape South Australia Act 2019*) should not have a blanket exemption from planning approvals. Instead, applications could be made for defined areas (e.g. woody weed control along a creekline).
17. Remove the exemptions of State Government departments from tree protection regulations (notably the Department of Infrastructure and Transport and Department for Education).
18. Seek opportunities for state-level tree protection planning priorities on Federal Government land (e.g. the Department of Defence).
19. State Government engages with the Local Government Association and councils around are the implications of increase tree regulation and opportunities to manage resource impacts e.g. through leveraging fees or state government provision of funds.
20. There should be no tree species exempt from planning approvals meaning proponents should be required to seek approval to remove/modify ANY TREE above a specific size threshold.
21. The State Government delivers a community campaign on the benefits of trees through the Adelaide National Park City program. The campaign should focus on promoting the benefits of trees.
22. State Government support further research and collection of evidence around the relationship between trees, bushfire risk and protection of biodiversity

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



23. The State Government works with industry leaders on a review of the arboriculture industry including professional training standards, accreditation and support for local industry development.

City of Marion Tree Management

The City of Marion is in Adelaide's south-western suburbs located around 10 kilometres from the Adelaide CBD.

As one of the largest councils in South Australia, we provide a range of community and environmental services to a resident population of around 100,000 people. More about our organization, community, and the services that we offer can be viewed on our website¹.

We currently manage more than 57,000 trees representing nearly 10% of the publicly managed urban canopy in greater Adelaide.

Based on the 2018 assessment of Adelaide's tree canopy² we are aware that in the City of Marion we have a lower-than-average total tree canopy cover. We are also aware that we only control around one third of this canopy, with the majority of tree canopy on private residential land.

Through analysis of historical aerial images, we are aware of the ongoing dramatic loss of tree canopy on private land. Some of the northern parts of our council area show the total canopy has halved over the past 20 years.

In 2021 we embarked on an ambitious tree planting program to plant 30,000 trees by 2028 to help improve our total tree canopy. Our current planting rate of around 4,300 trees per year, is one of the highest annual tree planting rates of any South Australian council. Our planting program prioritises the planting of new trees to mitigate the impacts of climate change on our city and community.

Whilst council is investing heavily to increase council managed tree canopy, we are aware that our contribution of new street and reserve trees cannot outpace the loss of trees on private land or even bring up the City of Marion's tree canopy to the average canopy cover for a metropolitan Adelaide council.

Our community has shown consistent concerns around the loss of trees in our city with themes around environmental sustainability and trees featuring strongly during the 2022 Council election campaign and recent community visioning engagement activities forming part of the development of our 4-year Business Plan.

Given the importance of trees to our community and the limited control we have over trees on private land, we are striving to ensure that we manage council trees using best practice arboriculture.

¹ www.marion.sa.gov.au

² <https://data.environment.sa.gov.au/Climate/Data-Systems/Urban-Heat-Mapping/Pages/default.aspx>

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



Our goal is to utilize plantable public space effectively to maximise tree retention and establishment and ensure ongoing maintenance activities are smart and cost efficient.

Underpinning our tree management philosophy is our belief that **trees are community assets** that should be management using the same asset management principles we would to other traditional assets such as roads and bridges. This means:

- Planning for tree management based on defined community and environmental service levels.
- Ensuring our trees have a realistic valuation that reflects their community benefit and underlying service levels.
- Ensuring planning for maintenance and renewal of trees is linked to our organisation's long-term financial and business planning.

We are now operating what we consider to be an industry-leading tree management program and our staff are regularly contacted to share experiences and ideas through state and national forums e.g., presentation by Coordinator Arboriculture, Ian Seccafien, at the National TREENET Conference "*Green is the New Gold: money does grow on trees*"³.

Using the innovative Forestree⁴ tree management software we are now able to manage each tree as an individual asset for whole-of-life works management using live data management. Our council's tree management teams can actively view tree planting and maintenance activities, set targets, and plan our budgets through our interactive tree map. Data on our activities is also available for viewing by the community through our council website⁵.

In addition to streamlining workflows and providing more information to the community, this platform allows us to plan our tree planting around seven years ahead, improving our capacity to integrate plantings into broader urban planning initiatives and flexibility in purchasing nursery stock.

Other industry leading programs delivered by the City of Marion include:

- **Trees Asset Management Plan:** This update of our tree management framework will make City of Marion one of the first Australian councils to complete an asset management plan for **trees as their own asset class** in accordance with the *International Infrastructure Management Manual 2020* (IIMM 2020) and *Australian Infrastructure Financial Management Guideline*.
- **Adopt a Tree:** a program to support residents to water young street trees.
- **Urban Tree Warriors:** a formal program volunteering program where registered Urban Tree Warriors are trained to assist with minor tree pruning and maintenance activities.

³ <https://treenet.org/resource/data-does-grow-on-trees-forestree/>

⁴ www.forestree.com.au

⁵ www.marion.sa.gov.au/services-we-offer/environment/street-trees/marion-tree-infrastructure

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



- **Tree Maintenance Fund:** A fund available to landowners to assist with maintenance the assists with the retention of large trees on private residential land.
- **Tree Tags:** Informative temporary tags attached to trees to engage the community in the diverse benefits of trees.
- **Valuing Marion's Nature:** ongoing engagement activities including workshops, events and communications that promote community connections with nature.

The City of Marion also works regionally, with the Cities of Holdfast Bay, Mitcham and Onkaparinga and the State Government, as part of the in the Resilient South climate partnership⁶. The Resilient South partners pursue opportunities to mitigate and adapt to the impacts of climate change in our region. Effective urban forest management is a priority area for Resilient South because it provides benefits through both climate adaptation and mitigation while also improving public amenity.

Resilient South initiatives and partnerships that relate to the urban forests include:

- **Adelaide Future Trees program.** This initiative led by the University of Adelaide and supported by local government, Green Adelaide, Wellbeing SA, and SA Power Networks, is currently analysing the current available data on council trees and identify priorities for the development of a climate resilient urban forest in the future. Future stages will focus on trials to broaden the palette of street trees and the local development of new cultivars.
- **Resilient South Regional Climate Action Plan (ReCAP).** This is a major planning initiative that will identify key priorities in responding to climate change in our region. Initial consultation with project partners has indicated that trees, greening and urban cooling a major priority for councils and residents in the region.
- **Resilient Asset Management Project (RAMP).** This ~\$1M initiative aims to identify climate risks to council assets and develop a consistent approach in addressing climate risks across the \$5 billion worth of assets managed by partner councils. The RAMP has received contributions from partner councils, CSIRO, the LGA SA Research and Development Scheme and the National Disaster Risk Reduction Fund. The Department for Environment and Water is an observer on this project.

About this submission

This submission has been prepared based on the experience and advice of specialist staff at the City of Marion and more broadly through the Resilient South. We consider that the priorities in this submission reflect leading, best practice urban forestry for local government.

Key technical input on this submission has been led by the following City of Marion employees:

⁶ www.resilientsouth.com

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



- **Ian Seccafien**, Coordinator Arboriculture City of Marion: Council arborist with over 20 years' experience across local government.
- **Dr Stefan Caddy-Retalic**, Resilient South Regional Coordinator. Leading specialist advising on climate change and tree management as a University of Adelaide Adjunct Lecturer and Regional Coordinator of the Resilient South climate partnership.
- **Rebecca Neumann**, Senior Environmental Planner, City of Marion. Council sustainability practitioner with over 20 years' experience in local government.

Many of the opportunities identified in this submission also have significant political ramifications as they call for major changes to the financial and regulatory frameworks that shape urban forestry in greater Adelaide and the role that local government plays.

The political priorities identified in this submission have been considered by City of Marion council members through our Environment Committee and our General Council, with feedback incorporated into the final submission.

We would also like to note that many of the priorities raised in this submission are also being / have been raised through other pathways to support the broader changes that we believe are required to improve management of trees, wildlife, and green spaces in our community. This includes:

- Business planning by Council Members as part of the review of the City of Marion strategic management plans.
- The development and of the City of Marion Trees Asset Management Plan and Greening Strategy.
- Our response to the **Planning System Implementation Review** led by the Minister for Planning and his Expert Panel.
- The Resilient South Regional Climate Action Plan (**ReCAP**) and Resilient Asset Management Project (**RAMP**) – see above.
- Our involvement in several “technical working groups” contributing to the **Adelaide Urban Greening Strategy** (led by Green Adelaide) and the recent aerial tree canopy and urban heat data captures (LiDAR mapping).
- Responses to previous Parliamentary Inquiries including:
 - **Inquiry into Urban Green Spaces** by the Natural Resources Committee (via submission from the Regional Climate Partnership and SA Local Government Association, July 2020)
 - **Inquiry into Native Vegetation Protection** by the Natural Resources Council (submission from City of Marion, July 2021).
- Opportunities for engagement with the community and other industry leaders.

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



Inquiry Area #1

Best practice and innovative measures to assist in the selection and maintenance of site-appropriate tree species to improve the resilience of the urban forest, with a focus on trees for urban infill developments.

Urban forestry requires strategic coordination

The urban forest includes trees that are planted on both public and private land. In Adelaide, there is currently no single agency or authority that coordinates the strategic management of trees and natural spaces, or even has complete visibility of all urban trees.

The Adelaide Urban Greening Strategy currently being developed by Green Adelaide addresses a range of issues related to urban forests and responds to the *Inquiry into Urban Green Spaces* by the Natural Resources Committee of the South Australian Parliament⁷.

RECOMMENDATION 1: The ERDC should ensure the final report on this inquiry has recommendations that link to Adelaide's Urban Greening Strategy (being developed by Green Adelaide) and that Green Adelaide be formally tasked to taking the lead in coordinating matters related to the urban forest.

The major pressures that are limiting efforts to maintain and grow our combined urban forest and canopy are:

- The removal of existing trees on private land, primarily due to infill development.
- Limitations in planting opportunities on public land due to limited space and heavy encumbrances from utilities (overhead power lines and buried pipes and cables); and
- Climate impacts reducing the suitability of commonly planted tree varieties due to long-term drying, warming and extreme weather events.

Climate change is a risk to our urban forest

Adelaide's climate is shifting from a Mediterranean climate (characterised by hot, dry summers and cool, wet winters) to a semi-arid climate (characterised by very hot, dry summers and warm winters with limited rainfall), more akin to Port Augusta.

In addition to this general warming and drying trend, climate projections for Adelaide indicate increasingly variable rainfall and an increase in the frequency and intensity of extreme weather events (droughts, heatwaves, and storms).

⁷ Final report on the *Inquiry into Urban Green Spaces* by the Natural Resources Committee was tabled in the House of Assembly and ordered to be published on Thursday 27 May 2021. Detail available at www.parliament.sa.gov.au/en/Committees/Committees-Detail

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



Adelaide's shifting climate means that several popular tree varieties, including some native species, are moving outside of their climatic envelope and are becoming more difficult to establish and maintain.

For example, Callery Pears (*Pyrus calleryana*) are native to the humid subtropical to temperate zones of eastern Asia and Jacarandas (*Jacaranda mimosifolia*) are native to subtropical South America. While moderately drought tolerant, both species (and many other heavily planted exotics) are on the edge of their climatic range in Adelaide.

As Adelaide's climate becomes increasingly arid, with increasing drought periods and heatwaves, commonly planted species are likely to have reduced health and useful life expectancy and lower success in establishment. Eventually, widespread cultivation of some currently common species in Adelaide will not be possible.

Best practice urban forest requires species diversity

The best way to bolster our urban forest against direct climate impacts and climate-mediated threats (like disease) is through diversification of the trees we plant. Increased diversity should occur within species (maximising genetic diversity), between species (maximising the different trees we plant), in size and form (increasing functional diversity) and in age (ensuring not all trees will senesce at the same time).

Higher diversity ecological communities are more resilient, and there is more redundancy in place should we pass the climatic threshold or experience the introduction of a pest or disease which heavily impacts one or more tree species. A principle that has been adopted by several cities globally, including the City of Melbourne, is to aim for an urban forest that comprises:

- No more than 5% of any one species (e.g., River Red Gum; *Eucalyptus camaldulensis*);
- No more than 10% of any one genus (e.g., *Eucalyptus*); and
- No more than 25% of any one family (e.g., Myrtaceae, including *Eucalyptus*, *Corymbia*, *Angophora*, *Melaleuca*, *Agonis*, *Lophostemon*, etc.).

Tree planting in Adelaide shows very low diversity

Preliminary analysis from council tree inventory data from across greater Adelaide shows a predominance of a handful of heavily planted tree varieties. The trees most planted by councils are Callery Pears and Jacarandas, which together account for more than 20% of Adelaide's public urban forest. In addition, nearly half (45.3%) of the audited council trees in Adelaide are from the Myrtaceae family (eucalypts, bottlebrushes, paperbarks, willow myrtles, etc.)

Other commonly planted trees include

- Queensland Brush Box (*Lophostemon confertus*)
- Golden Rain Tree (*Koelreuteria paniculata*)
- River Red Gum (*Eucalyptus camaldulensis*)

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



- Crimson Bottlebrush (*Melaleuca (Callistemon) citrina* and *M. viminalis*)
- Tuckeroo (*Cupaniopsis anacardioides*)
- SA Blue Gum (*Eucalyptus leucoxylon*).

These trees have become popular in some cases due to their association with the heritage of some suburbs, but largely because they have been proven performers with relatively few pest issues, predictable growth habits and well-developed propagation techniques. This makes them easy to incorporate into landscape designs and predictable to manage by councils. This reliability and popularity has, in turn, reinforced their heritage associations.

Mass propagation of cultivars through tissue culture (growing trees from cuttings rather than seed) has allowed nurseries to grow young trees at scale at low cost and maximise tree consistency in form and growth characteristics. With little pressure from the market to supply different species, this has resulted in many cultivars planted in Adelaide consisting entirely of clones with very little overall diversity.

Low-diversity ecological communities are generally regarded as more vulnerable to extrinsic threats because a small disturbance (e.g., an apparently minor climatic change or introduction of a pest or disease) has the potential to negatively impact the health and/or function of much of the community.

Furthermore, closely related species (i.e. those in the same family) are often susceptible to the same threats, including climate but also climate-mediated pests and diseases such as phytophthora and myrtle rust (both of which affect Myrtaceae species), the transmissibility of which may be increased in some areas due to climate impacts. The combination of reduced tree health and increased transmission of pests and diseases might also lead to increased virulence of pests and pathogens, with trees previously able to suppress infection no longer able to do so, leading to tree decline and death.

Industry change is required to introduce more tree diversity

Achieving a diverse urban forest will require a rapid shift away from currently popular exotic trees such as Jacarandas, Callery Pears and Queensland Brush Box (*Lophostemon confertus*) and some native species such as the South Australian Blue Gum (*Eucalyptus leucoxylon*).

Determining which varieties to plant in the place of currently popular tree varieties that are overrepresented in the urban forest is not straightforward and will require coordination between local governments, state government and nursery industry, to ensure (species and genetic) diverse stock are available for purchase by urban forest managers.

Given that a change to current practices is likely to have impacts for all stakeholder groups, careful communication, engagement, and planning will be required in introduce new tree species and move away from single-variety plantings along streets. Impacts of this change will affect:

- planning for maintenance of character and heritage in established sites;
- selection of new species by landscape architects and developers in new sites;

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



- supply of new species by the nursery industry; and
- schedules for establishment and maintenance of trees in council operations.

Better data is the key to better planning

Understanding the diversity and demographics of Adelaide's trees is a vital first step in improved management of our urban forest. A benchmark model would identify levels of diversity in the urban forest, as well as the vulnerabilities that climate change impacting sensitive species is likely to have on our canopy as a whole.

Phase 1 of the Adelaide Future Trees Project has collated tree data from all councils in greater Adelaide to develop a model across that can be used for planning purposes.

Establishment of consistent data collection methods and a centralized tree database should be mainstreamed as part of the Green Adelaide Urban Greening Strategy to ensure the process is ongoing and improved over time.

Current limitations around the centralized collection and analysis of tree data are:

- Approximately half of Adelaide's councils do not have a specialist tree management database (e.g. Forestree or Tree Plotter) and/or have limited census data of the trees they manage. Coordinating the development of common data standards and a shared platform which all parties can contribute their data would improve opportunities for better forest management.
- Several councils are not planning their tree management through specialist software systems (often part of the tree management databases above). These systems allow long term planning of tree planting and maintenance activities – including planning for the numbers of new trees required and selection of site appropriate species.
- It is unclear whether trees on State and Commonwealth-owned estates (e.g., Adelaide and Parafield Airports; schools, TAFE, university, and health campuses, etc.) have been audited and databased. Ensuring these trees have been mapped and those data can be included in urban forest modelling would fill large spatial gaps.
- There is currently no census of trees on private land. Attempts to collect this data through aerial imagery (remote sensing) are underway, however current data collection does not distinguish species.

The Department for Environment and Water and Green Adelaide have partnered with the Adelaide metropolitan councils to undertake an airborne data capture of all trees in the greater Adelaide area using LiDAR (a remote sensing technique). These data will be used to measure the canopy extent across individual suburbs and target areas for greening and it is intended that regular recapture of these data will be used to track canopy extent over the coming years.

While this approach is critical for measuring the extent of the urban canopy, LiDAR is currently unable to distinguish between tree species, making it difficult to determine relative

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



abundances or the degree to which weeds (e.g., olives), native vegetation and cultivated species are contributing to canopy levels. **Multispectral imagery** (captured during the LiDAR flyover or through other means) has the capacity to identify individual trees, which can then be combined with LiDAR data to create a comprehensive canopy model including both size and species identification. However, analyses of multispectral imagery must first be “trained” using trees of known species. Council datasets provide this opportunity and could inform a much more comprehensive analysis incorporating both public and private land.

RECOMMENDATION 2: The State Government ensures a coordinated approach to a regular Adelaide Tree Census that allows establishment of a benchmarking model of Adelaide’s urban forest.

RECOMMENDATION 3: The State Government funds ongoing tree canopy mapping of Adelaide with a focus on monitoring trees on private land with the next round of data collection to include an analysis of species diversity.

We need to identify new climate-resilient tree cultivars

To achieve a diverse urban forest and reduce vulnerability to direct and indirect climate impacts, we need to target suitable tree species that are not commonly planted at present and shift ongoing planting programs to favour those varieties. This imperative is the focus of the Future Trees Project, being led by the University of Adelaide in partnership with several other agencies.

Ideally, Adelaide’s “future trees” should be from dry Mediterranean or semi-arid climate zones and not part from the Myrtaceae, Rosaceae, Sapindaceae, Bignoniaceae or Oleaceae plant families, which are already heavily represented in Adelaide. Historic plantings at the Waite Arboretum and other locations may be useful sources for identifying suitable candidate species. Once candidate species have been identified, well-designed street tree trials should be undertaken to test tree performance. Trials should be underpinned by a strong experimental design that incorporates broad growing conditions (plains, coastal, hills, etc) and replicates typical street tree establishment.

There has been little local development of tree varieties to suit our conditions for decades, with much tree stock imported from interstate. South Australia has good facilities for tree breeding and propagation, including the plant breeding and improvement facilities at the Waite Campus of the University of Adelaide (currently used almost exclusively for cereal crops and grape vine research), State Flora nursery at Murray Bridge and various commercial facilities.

The semi-arid Australian native flora also remains underexploited for horticultural development, with several native species that would be attractive for plant breeding and commercial opportunities. Investment in this work being undertaken in Adelaide would create opportunities to improve the diversity and quality of tree stock for planting in our cities, as well as providing new market opportunities for local producers and reducing the biodiversity risk posed from importing plants from interstate. In addition to urban forest benefits, there are also opportunities in fostering a more innovative and productive tree nursery industry in South Australia (including export and intellectual property benefits).

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



With introduction of new and potentially unfamiliar species, there will need to be development of standards and guidelines for the planning management of these species. This includes:

- Character descriptions and services offered by the species.
- Technical design information relevant for use by landscape architects and planners.
- Propagation notes for nurseries.
- Establishment and maintenance notes for use operational maintenance.

RECOMMENDATION 4: The State Government works with councils and other stakeholders to identify mechanisms to improve the species diversity of the Adelaide urban forest to bolster its resilience to direct and indirect climate impacts and reduce the overall impact should one or more species be disproportionately impacted.

RECOMMENDATION 5: The State Government works with councils, local tree nurseries and research institutions (e.g. TREENET, Waite Arboretum) on a Climate Resilient Trees Trial and Climate Resilient Trees Guideline for Adelaide.

We need to value the public benefit of trees on private land

Trees on private land provide broader benefits than just to the landowner, however the landowner owns the tree and has control over its future and in most cases is solely responsible for its maintenance.

Increasingly, residents are requesting councils help maintain trees on private land, particularly large (often Regulated or Significant) trees that require maintenance and ongoing work to clear gutters etc. Such trees may also be regarded, often correctly, as posing a public risk if they are not regularly inspected and maintained by an arborist.

It is beyond the scope of councils to undertake works on private land, but some councils (including the City of Marion) have instituted Urban Tree Funds that provide limited funds to support the retention and maintenance of high value trees on private land.

These models still require an upfront payment by the resident to an arborist for the work. This means that the landowner is required to engage an arborist to inspect the tree, write a report, undertake any works and pay in full; then seek a partial reimbursement from council.

A more cost-effective model could be a government subsidised tree maintenance program. This would enable more cost-efficient coordinated procurement of arboriculture services and a more consistent approach to maintenance activities.

RECOMMENDATION 6: The State Government works with councils and the Local Government Association to investigate the development of a private tree maintenance fund for high value trees.

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



Inquiry Area #2

Legislative and regulatory options to improve the resilience and longevity of trees comprising the urban forest; and

There is conflict between trees and utilities

There are several state government laws, regulations or policy documents that restrict the trees that can be planted on public land. Chief amongst these are:

- *Electricity (Principles of Vegetation Clearance) Regulations 2021*; including the Approved and Permitted Species lists maintained by the Office of the Technical Regulator that dictate which species may be planted under power lines;
- *Water Industry Act 2012*, including the SA Water Tree Planting Guide which dictates which species may be planted in the vicinity of underground water and wastewater infrastructure; and
- *Operational Instruction 19.8: Trees in Medians and Roadsides in the Urban Environment*, which mandates vegetation clearances from road corridors.

These documents treat trees only as a risk to critical infrastructure or life, including as a potential ignition source for bushfire. While trees certainly do pose a risk to infrastructure, these documents ignore the benefit that trees provide to the community.

As infrastructure proliferates with urban sprawl and infill, regulations that allow public trees to be removed and limit any replacement plantings, make it impossible for councils to achieve canopy targets on public land.

It is critical that there is a wholistic review of these key documents to incorporate a more sophisticated understanding of trees as community and ecological assets that act as important mitigator of climate risk.

A review should focus on harmonisation of all tree-relevant legislation and regulation to ensure this balanced and wholistic view of trees is promulgated across all state government policies, aligning infrastructure and development regulation with the principles of the 30-Year Plan for Greater Adelaide and government commitments to greening and increasing canopy.

The Office of the Technical Regulator (OTR) is the key agency responsible for the enforcement and compliance with these technical and safety regulations affecting the broader of the electricity, gas, plumbing and water industry in South Australia.

However, the OTR does not have any broader responsibility for maintaining the positive benefits of trees and green spaces in the community, nor does it maintain expertise in these areas. This narrow focus has led to a lack of prioritisation of maintaining trees and green spaces and little consultation with other state or local government entities to achieve this.

This disconnect between government agencies is resulting in conflicts between councils and utility providers around the establishment of trees.

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



The OTR maintains lists of “Approved Vegetation” (for bushfire areas) and “Permitted Vegetation” (for non-bushfire areas) which were embedded in previous iterations of the *Electricity (Principles of Vegetation Clearance) Regulations 2021*.

The Regulations limit the planting of vegetation to species on these lists with the purpose of limiting the incidence of vegetation growing to a height where they may interfere with power lines, increasing public safety and limiting the cost pressure on SA Power Networks (SAPN), which has a legislative responsibility to ensure safe clearances of its infrastructure.

Much of Adelaide’s urban forest dates from before these lists were instituted, meaning that **many council plantings are non-compliant**.

SA Power Networks has historically offered some latitude to councils by accepting responsibility for pruning newer plantings and ensuring powerline clearance. However, SAPN has adopted a zero-tolerance approach to any trees planted since 2017.

SAPN has issued non-compliance notices to several councils across Adelaide to request the removal of common street trees including jacarandas (*Jacaranda mimosifolia*), Queensland Brush Box (*Lophostemon confertus*) and Coral Gums (*Eucalyptus torquata*) planted since 2017 because these are not on the Allowed or Permitted vegetation lists.

Councils are continuing to work with SAPN to find a way to maintain existing plantings, but overhead power lines and the Allowed and Permitted vegetation lists are a major impediment to councils with ambitious greening and canopy targets consistent with the 30 Year Plan for Greater Adelaide.

The Permitted species list contains 272 tree varieties, however several are synonyms of other species or have obsolete taxonomy, making it unclear which species they are referring to. A list of errors with recommended amendments was provided to the OTR in June 2022 but no amendments have been forthcoming.

When compared to the SA Water Tree Planting Guide, which contains 219 tree species that can be planted in the vicinity of water or wastewater infrastructure, there are only 62 tree species common to both lists. Many of the tree species common to both lists grow to less than three metres high and provide limited public amenity and may not meet criteria required for street trees (e.g., consistency of form, clear line of sight for traffic, lack of spiky or poisonous parts, lack of extensive litter, climate and soil suitability, nursery availability, etc.).

We recommend that efforts be made to expand the Allowed Vegetation and Permitted Vegetation lists and SA Water Tree Planting Guide to identify new species suitable for planting in the vicinity of infrastructure. This is likely to require trials of potentially suitable species and potentially the development of new cultivars suitable for South Australian conditions.

Key areas for review include:

1. Ensuring policies and legislation relevant to the electricity, gas, plumbing and water industry link with the priorities of Adelaide’s Urban Greening Strategy;
2. Reviewing non-compliance notices that have been sent to councils, and

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



3. Establishing clearer guidelines and permitted vegetation lists to meet community priorities.

RECOMMENDATION 7: The State Government brings together the Office of the Technical Regulator, Green Adelaide, the Local Government Association, and utility providers to undertake a review of the regulation of trees on public land.

Undergrounding powerlines will avoid conflict with utilities

Independent of legislative and regulatory reform related to the electricity, gas and water industry, one of the simplest initiatives the state government could invest in to improve urban forest extent and performance is undergrounding of power lines, including in common services trenches under roadways which combine electricity, gas, water and communications services in a single trench.

This approach also increases the stability of the electricity grid due to damage in storms and fires, as well as removing a major bushfire ignition source in fire-vulnerable areas. The placement of a common trench in the middle of roadway also increases the amount of above- and below-ground space for planting on the verge, increasing the number and size of trees that can be planted on roadsides.

Undergrounding powerlines is expensive (ca. \$3,000 per metre). The Power Line Environment Committee (PLEC) is a committee assisting the Minister responsible for the *Electricity Act 1996* in assessing and recommending the undergrounding over overhead power lines.

The PLEC has annual funding in the order of \$10M, and largely operates in a co-funding model, whereby councils are invited to apply for funds to support undergrounding in specific areas. Councils are generally expected to contribute at least one third of the costs of undergrounding (ca. \$1,000 per metre).

This high requirement for council funds and limited co-funding available through PLEC means that undergrounding of existing overhead cables remains rare and is generally restricted to high-profile corridors and developments.

Providing additional funding to PLEC and reducing the level of co-funding required by councils would provide allow the removal of more overhead powerlines, and thereby improve safety and public amenity, and increasing opportunity for greening. Undertaking more undergrounding would possibly also reduce the net cost per meter due to efficiencies of scale.

A review of the PLEC funding model and prioritisation process should:

1. strategically prioritise distribution of funding to areas of Adelaide where increased tree canopy is a high priority.
2. reduces the requirement for co-contributions from councils.
3. increases to the total annual funding pool to support a more rapid establishment of trees in priority locations.

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



Alternatively, the state government could identify high priority targets for undergrounding (e.g. specific major transport corridors) to target for powerline undergrounding and greening, providing majority funding as a Major Project. Such projects could effectively transform a barren transport corridor with minimal greening into shaded boulevards with high public amenity and increased appeal for active transport users.

RECOMMENDATION 8: The State Government reviews the PLEC funding model and strategic prioritisation process to better incorporate the benefits of urban greening.

Weeds are just plants in the wrong place

The *Landscape South Australia Act 2019* prevents the planting of species designated as weeds including common trees such as Aleppo pine (*Pinus halepensis*), box elder (*Acer negundo*) and desert ash (*Fraxinus angustifolia*). These species are prohibited because they have the potential to pose a serious risk to South Australia's environment and primary industries.

Prohibiting the planting of these species in regional and peri-urban areas has a sound ecological and agricultural basis. However, the traits that allow them to grow and proliferate, also make them robust and effective urban trees. For example, the desert ash has been planted extensively as a street tree (there are more than 5,000 plantings in council street tree databases) and is popular in gardens because it is shady and grows well. The major risk this species poses is its ability to colonise and spread along streams, which may not be an issue in some urban contexts.

RECOMMENDATION 9: The State Government reviews the list of declared weeds and considers including exemptions for species that may have a low threat in urban areas.

Tree protection laws interstate and in the United Kingdom are ahead of Australia

It is notable that other jurisdictions in Australia and overseas are acting quickly to protect urban trees because it is a simple and cost-effective means of bolstering community resilience to climate impacts.

The 2022 report *Urban tree protection in Australia: review of regulatory matters*, commissioned by the Attorney General's Department Planning and Land Use Services, compares South Australian tree protection laws to those found in capital city local governments interstate. It finds that South Australia's tree protection laws are comparatively lax and makes a number of recommendations on how these could be improved to meet ambitious state and local government canopy targets.

The United Kingdom has amended its *Forestry Act 1967* to remove the £2500 penalty ceiling for unauthorised tree removal, allowing up to twice the value of the removed trees to be fined. Penalties for non-compliance include further unlimited fines or imprisonment. Additionally, "restocking" (revegetation) and enforcement notices are required to be listed on the Local Land Charges Register, making them visible to prospective buyers of the land and potentially impacting the land's value.

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



The intention of this reform in the UK is to discourage developers who have previously been prepared to accept penalties for unauthorised clearing for commercial reasons. This type of reform is aimed at quickly arresting urban forest decline and represents the type of commitment that is likely to be required to arrest canopy decline in South Australia.

New developments are the opportunity to get things right

Large housing developments provide improved opportunity for tree selection as all trees can be specified at one time to maximise diversity, and the opportunity to underground powerlines and use common trench infrastructure allows for larger trees to be planted.

This opportunity is not always appreciated or exploited by developers or councils, who may accept low-diversity plantings and/or smaller trees that do not provide substantial shade, despite the lack of encumbrance from overhead powerlines.

Developers are often heavily criticised for perceived failings in the building, environmental or social amenity created by their developments, particularly when large trees are removed to facilitate building. Linking tree retention and other public good outcomes to economic incentives (e.g. charging developers the full assessed value of a tree before approving its removal) would ensure that commercial and public good incentives are better aligned. Because large trees valued by industry-accepted methodologies often exceed \$100,000, funds accumulated would be significant enough to support major greening projects, including the purchase of land for pocket parks or other greening opportunities. Such an approach would lead to more certainty for developers and development that is in line with public expectations.

RECOMMENDATION 10: The State Government works with local government and industry leaders to standardise a tree valuation methodology in South Australia and ensure this valuation is linked to tree protection laws in the state planning system.

Our planning laws are deficient when it comes to tree protection

The *Planning, Development and Infrastructure Act 2016* is the primary mechanism for protecting trees on private land in the overlay region (i.e., greater Adelaide area).

Our council has provided extensive feedback on the interaction between planning laws and tree protection laws as part:

- The 30 Year Plan for Greater Adelaide
- Planning, Development and Infrastructure Bill
- Draft Planning and Design Code
- Planning System Implementation Review (current).

The benchmarking study *Urban tree protection in Australia: Review of regulatory matters* produced by the University of Adelaide, commissioned as part of the Planning System Implementation Review confirmed that South Australia's tree protections were markedly less stringent than those in other Australian capital cities and that the exemptions to protection

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



were broad to the extent that few trees in an urban setting are actually protected against removal for development. The report provides several recommendations on reforms that would improve canopy retention on private land.

The Expert Panel that is advising on the Planning System Implementation Review, has already noted widespread feedback that tree protection regulations are insufficient, and that exemptions too broad, to effectively protect urban trees in many circumstances.

However, despite the importance of this issue, in their October 2022 Discussion Paper, the Expert Panel stated:

“Notwithstanding the findings in the Research Report, for the avoidance of doubt, the Panel does not intend to make any specific recommendations as to what the revised minimum tree circumference should be (or if it should be amended), or what any minimum height or minimum canopy spread protections ought to be introduced (if it is inclined to recommend any of the same). This is because the Panel acknowledges the need for significant economic analysis to be undertaken before such figures could be arrived at.”

and

“...the Panel considers that this [the exemption of protections for most trees within 10 metres of a building or in-ground swimming pool] provision is too generous, and that consideration needs to be given to reducing the same. The Panel also considers there is scope for reducing, or otherwise further refining, the circumstances that are deemed suitable triggers for removing a protected tree based on its proximity. This could potentially include a requirement for the tree to be posing a significant threat to safety or infrastructure but could also be refined to only permit removal to occur if the tree is within a certain distance to a substantial building or infrastructure... ..the Panel is unlikely to make specific numeric recommendations for revision of these regulations in the absence of further economic analysis”.

The Expert Panel's decision to avoid making specific recommendations regarding tree protections is disappointing and raises questions as to what state government process is necessary to achieve reform that will arrest current canopy decline. Undertaking economic analysis and broad consultation is certainly desirable, but the importance of growing canopy to ameliorate the impacts of climate change on the community, particularly in lower socioeconomic areas, coupled with the alarming decline in canopy in many areas, suggests that extended analysis and consultation may be a luxury that the community cannot afford.

RECOMMENDATION 11: The recommendations of this inquiry are provided to the Minister for Planning and are incorporated into the final recommendations of the Planning System Implementation Review.

Planning System Implementation Review Responses

The following issues have been raised as part of our recent responses to the Planning System Implementation Review.

“Reasonable Development” clause

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



Large numbers of trees are lost through Development Applications under the 'Reasonable Development' clause in the PDI Act. No clear definition is provided on what constitutes 'Reasonable Development'. Arguments are made for tree retention on the grounds that it is unreasonable to lose the tree, however it often swings back to zoning, and if the zoning allows the development, then it is reasonable. By such logic, it is difficult to envisage what development would be regarded as 'Unreasonable' in the context of tree protection.

RECOMMENDATION 12: State planning laws must establish a clear definition on 'Reasonable Development' in relation to trees, e.g. If X amount of canopy cover is lost, the development is not reasonable.

Private Certifiers

Privately certified developments increase tree loss because they are often conducted by a certifier (potentially remotely) with limited information and without visiting the site. This can result in inaccurate or misleading plans being submitted to council which often do not reflect council trees in the plan. These are approved by the certifier's planners, and then a tree removal request is submitted to the council arboriculture team. Council is not consulted at any early stage of the process. Council is then forced to remove the tree to allow the approved development.

RECOMMENDATION 13. State planning laws should enable council to refuse development if the plans are inaccurate/misleading, forcing private certifiers to ensure all lodged documents are accurate and include impacts to council trees.

10m exemption rule

With ongoing urban infill, the ability to remove any tree (other than *Eucalyptus* or *Agonis flexuosa*) that is within ten metres of a dwelling or in-ground swimming pool effectively means that most "protected" trees in urban areas are exempt from protection. A recent case where an abandoned, filled-in pool was used to remove a Regulated Tree and a recent ERD court decision whereby a Norfolk Island Pine which had a stem >10m away from any structure was removed on the basis that a basal root was within 10m of a building demonstrate that this section is problematic and requires reform, including additional instruction to judges to ensure court decisions are consistent with community expectation and the objectives of the Act.

RECOMMENDATION 14: There should be no exemption allowing for the removal of Regulated trees within proximity to buildings or other structures unless it can be demonstrated that the tree is actually damaging that structure, and there should be a requirement for the proponent to demonstrate that the value of the structure outweighs the value of the tree.

Mandatory Tree Planting Policy

The conflict between the requirement for one new tree per allotment and 10m exemption for most species suitable for small areas means that most of trees planted will have no protection. The planted young tree is offered no protection if the first owner simply neglect or remove it, or if the property is sold and new owners simply remove it. Given that many small trees popular in infill developments (e.g. Callery Pear and Crepe Myrtle) have a limited lifespan (i.e. <20 years), it is likely that many infill trees will be lost by simple attrition.

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



RECOMMENDATION 15: The state government should provide further guidelines on suitable tree selection and long-term maintenance to compliment the mandatory tree planting policy in the state planning system.

Declared Weeds

The use of a blanket exemption for “declared weeds” can be problematic since many examples exist where declared weeds have either heritage value (e.g. olive groves), provide ecosystem services that are of greater value within their local context such as shade canopy (e.g. Desert Ash) or food sources to threatened native species (e.g. Aleppo Pine for Yellow-tailed Black Cockatoo).

Many declared weeds are not problematic in urban areas and may in fact be better, more climate resilient choices. Perfection should not be the enemy of progress in canopy growth.

RECOMMENDATION 16: Declared weeds (under the *Landscape South Australia Act 2019*) should not have a blanket exemption from planning approvals. Instead, applications could be made for defined areas (e.g. woody weed control along a creekline).

State Government and Federal Government exemption from tree protection

Trees are often removed by state government on state government land without independent consideration of the value of the trees against the reasons for their removal.

This often occurs along roads (e.g. as part of the Darlington South Road upgrades within the City of Marion) and at public school sites. These types of locations have particularly high risks associated with increased urban heat.

The Federal Government (e.g. Department of Defence) also has an exemption from these State Laws and therefore has little responsibility to maintain or protect trees on site (e.g. significant trees at Warradale Army Barracks).

RECOMMENDATION 18: Remove the exemptions of State Government departments from tree protection regulations (notably the Department of Infrastructure and Transport and Department for Education).

RECOMMENDATION 17: Seek opportunities for state-level tree protection planning priorities on Federal Government land (e.g. the Department of Defence).

Open Space and Trees Project

We note the State Planning Commission’s “Open Space and Trees Project” and provide general support for Part 1 and Part 2 of the project and the concept that these should be reviewed by the Expert Panel as part of the Planning System Implementation Review.

The Open Space and Trees Project – Part 1A (Arborist Review) has been reviewed by City of Marion arborists together with key staff (including arborists) regional collaboration on urban greening priorities in the Resilient South regional climate partnership (www.resilientsouth.com). The following key notes were made:

- Dr Dean Nicolle is a well-respected eucalypt expert however, he does not appear to hold arboricultural qualifications, nor is he a member of, or endorsed by, a relevant

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



professional association (e.g. the International Society of Arborists or Arboriculture Australia).

- The methodology that Dr Nicolle has used to value and rank species appear to be based on his opinion and professional experience and is not recognised externally. These valuations should be evaluated by a group of industry professionals before being accepted by the state government.
- The majority of Dr Nicolle's report is concerned with the inclusion of various species on exemption lists under Regulation 3F of the *Planning, Development and Infrastructure Act 2016*. The presence of such lists complicates the implementation of the Act in that a proponent needs to identify a tree to evaluate if it can be modified/removed. Trees can be difficult to identify and there have been recent incidents of even professional arborists removing protected trees due to misidentification.

Many of the recommendations in the Open Space and Trees Project are supported however we have some technical concerns and more detailed discussion is needed regarding the potential regulatory burden on councils.

A copy of our submission to the Planning System Implementation review can be made available on request.

RECOMMENDATION 19: State Government engages with the Local Government Association and councils around are the implications of increase tree regulation and opportunities to manage resource impacts e.g. through leveraging fees or state government provision of funds.

RECOMMENDATION 20: There should be no tree species exempt from planning approvals meaning proponents should be required to seek approval to remove/modify ANY TREE above a specific size threshold.

Inquiry Area #3

Any other related matters

Community attitudes to trees are mixed

Trees and green spaces are rated as some of the most liked features of our community and concern about tree loss consistently rates very highly on the list on our list of community priorities.

The benefits of trees for health, wellbeing, and the environment (both ecologically and physically) are well researched and documented. In recent times, the academic evidence for health and wellbeing and natural spaces is becoming increasingly clear, programs such "nature prescriptions"⁸ gaining popularity with health care professionals. There are clear and documented links between exposure to biodiverse green spaces and increased physical and mental health, lower crime rates and improved property values.

⁸ www.greenadelaide.sa.gov.au/get-involved/nature-prescription-trial

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



The benefits of tree for improving climate resilience are also becoming important. This includes through improvements to the physical environment (reducing urban heat, absorbing carbon, breaking down airborne pollutants and reducing demand on air conditioners) as well as for improving resilience of local wildlife and natural systems.

However, despite the benefits, there are community attitudes that persist that discourage residents from maintaining or planting trees on their land. These include:

- Maintaining trees is risky and sometimes not easily completed by the landowner.
- Maintaining trees is expensive if specialist services are required.
- Trees increases fire risk.
- Having trees in proximity to a house will damage the structure.
- 'Sudden limb drop' is common, particularly in eucalypts, and property and safety are at risk.
- It is unreasonable to tolerate nuisance or minor property damage from trees, e.g., leaf litter in gutters or swimming pools; sap and pollen on cars; or pavement lifting due to tree roots.
- Trees shade solar panels leads to lost revenue.
- Trees block views and sunlight.
- Shade and roots from trees outcompete other gardening priorities such as lawn, flower beds and vegetable patches.
- Residents should be able to prune or remove a tree on the verge outside their house.
- Building or renovating on a property with trees is too expensive, so all trees should be removed prior to any building work.

There may be some truth in some of these concerns, but it is likely that the negative impacts of trees are overestimated, and the benefit of urban trees will almost always outweigh any drawbacks.

Deaths due to trees are relatively low compared to other activities where risks are commonly accepted (e.g., driving in a vehicle). A creative commons licensed *Database of Australian Fatalities associated with Tree Failures* is shared by Arboriculture Australia along with a paper analysing results⁹. The authors identify the risk of tree related death to be 1 in 5,000,000. Given the extent of tree canopy and the amount of time that people spend under tree canopies, the risk of sudden limb drop from a tree resulting in death or injury is extremely low.

Because larger trees take a long time to grow, their heritage benefits could be promoted to the community to inspire a regard of prestige to large trees, akin to original architectural features in a heritage home. This would enhance existing public positivity towards trees as

⁹ Hartley, M. and Chalk, J. (2019). *A review of deaths in Australia from accidental tree failures*. Shared by Arboriculture Australia at www.arboriculture.org.au (accessed 20 January 2023).

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



environmental assets, and potentially provide additional economic or social incentive for those that do not individually appreciate trees to retain them.

RECOMMENDATION 21: The State Government delivers a community campaign on the benefits of trees through the Adelaide National Park City program. The campaign should focus on promoting the benefits of trees.

Trees, bushfire, and biodiversity

Heatwaves, drought, and bushfires are the major natural hazards in South Australia and are closely linked. Southern Adelaide suburbs represent some of the most at-risk of bushfires nationally and many residents remain inadequately prepared to deal with these predictable hazards.

Trees can increase the intensity of bushfires, however they can also reduce the likelihood of fires and the rate of spread through reduced heat and reduced wind speeds. A cool, shady canopy is also an asset to people and wildlife in times of heatwave.

Concerningly, southern Adelaide has experienced marked biodiversity loss in recent years, such as a 75% decline in woodland birds. Retention of tree canopy and allowing movement of wildlife both for refuge during heatwaves as well as gradual movement with climatic changes are important aspects of biodiversity conservation.

These links between climate, vegetation, fire, and biodiversity are complex and none can be effectively managed in isolation. Investing in better understanding the links and feedbacks between these systems and bolstering the management of our biodiversity and emergency planning is likely to improve both biodiversity and hazard management outcomes.

RECOMMENDATION 22: State Government support further research and collection of evidence around the relationship between trees, bushfire risk and protection of biodiversity.

The arboriculture industry needs more professional standards

With the rate of tree canopy decline and the increasing pressure on councils to make up for losses of tree canopy on private land, there has been a dramatic increase in the services required from councils around tree management. This includes additional water trucks, pruning crews and general arboriculture staff to maintain trees and ensure required clearances to roadways etc are maintained.

In addition to the additional cost pressures, several councils are encountering difficulty attracting and retaining skilled staff, particularly “practicing” (Certificate III qualified) and “consulting” (Diploma qualified) arborists.

Arboriculture is a specialist field requiring in-depth understanding of tree management. Core skills include an ability to identify different species and cultivars; recognise and treat pests and diseases; understand soil physical and chemical properties and the impacts these have on plant growth; the capacity to prescribe and undertake pruning of both young and mature

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



trees; the ability to specify trees suitable for planting in specific conditions; an understanding of the legislation and regulations relating to trees.

These skills are not quickly acquired and require extensive on-ground training and mentoring in addition to the core qualifications taught in a Certificate III or Diploma course. Arborists also develop a range of ancillary skills (e.g., tree climbing, habitat pruning, tree valuation, etc) and hold specialist insurance to operate safely.

Despite the extensive skills and training required, the Australian arboriculture industry is currently largely unregulated and **there is no barrier to an unqualified person promoting themselves as an arborist.**

In addition to the obvious safety and public liability issues created by untrained operators pruning and removing trees, there have been instances of unscrupulous operators paying unsolicited visits to homeowners and falsely claiming that their trees are unhealthy or unsafe and require immediate and expensive treatment or removal. This can lead to the unnecessary and unwanted removal of healthy trees and further decline in urban forest diversity and canopy cover.

Unprofessional behaviour by such operators, as well as some trained arborists, undermines public regard for arboriculture as a specialist field and encourages the public to engage untrained, but probably less expensive “tree loppers” to undertake tree management services.

Arborist is listed on the 2022 Skills Priority List, but South Australia trains relatively few arborists domestically, with only two SA-based Registered Training Providers able to deliver the Diploma in Arboriculture. Of these, TAFE SA is the primary provider, but requires applicants to already be employed in a relevant industry, creating an impediment to recruiting new trainees.

There is also very little opportunity for further formal education to achieve the advanced skills required for higher level arboriculture or urban forestry roles (i.e. courses beyond the Diploma in Arboriculture).

According to the training.gov.au website, there are no training providers currently able to deliver an AQF level 6 (Advanced Diploma) qualification in arboriculture nationally. The only AQF level 8 (Graduate Certificate or Graduate Diploma) course is available through the University of Melbourne. Unlike many overseas jurisdictions, there are no university-level arboriculture courses offered by South Australian universities.

Australia has traditionally imported many of its arborists, primarily from the United Kingdom. The COVID pandemic caused an interruption to immigration, disrupting the inflow of trained personnel. Reliance on overseas-trained arborists has been shown to be prone to disruption, but also requires immigrating arborists to learn new industry skills on their arrival. For example, UK arborists are largely trained with deciduous trees and conifers, which have very different growth, architecture, biology, and management requirements to dominant Australian trees such as eucalypts and acacias. Australian trees are also less susceptible to fungi due to the drier conditions, but are vulnerable to a different suite of pests and pathogens (e.g., phytophthora and myrtle rust) that overseas arborists are less likely to be familiar with.

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



Increasingly, arborists employed in local government are required to possess or develop additional skills that are not taught as part of traditional arboricultural courses, including ecology, town planning, asset management, urban forestry, and related skills. Arborists are currently learning these skills on the job, but this process is haphazard and inconsistent across councils.

Providing professional development opportunities to learn new industry skills would improve the capacity of the sector to better respond to emerging tree issues.

Opportunities to improve industry regulation and training opportunities exist as described below.

Industry regulation:

1. Instituting a state register of Practising (AQF Level 3 qualified) and Consulting (AQF Level 5 qualified) arborists and a legal requirement for professionals to meet minimum training levels to use the title "arborist" would improve professional standards and the regard the public has for arborists.
2. Adding specific ratings (e.g., tree risk assessment; native vegetation assessment; tree valuation; ground-based pruning; aerial pruning, etc.) to arborist registration in partnership with a peak industry body (e.g., Arboriculture Australia) would provide confidence in arborists' capacity to undertake specialist services and provide ongoing professional development avenues for arborists.
3. Instituting a requirement for arborists to undertake ongoing professional development to ensure they remain up to date with current practices would improve the performance of the industry and provide a mechanism to weed out under-trained or poorly performing actors.

Training opportunities

1. Providing additional TAFE SA training places and pathways to undertake the foundation Certificate III and Diploma of Arboriculture that do not require experience would alleviate the current skills shortage and provide new career opportunities to local workers.
2. Offering an AQF Level 6 (Advanced Diploma) or 8 (Graduate Certificate/Diploma) at a local training organisation would provide ongoing professional development opportunities for local arborists and position Adelaide as a national training hub for interstate workers. Such a course could leverage the existing expertise and resources in South Australia, including the Waite Arboretum and specialist plant breeding and pathology facilities at the Waite Campus of the University of Adelaide.
3. Current training courses are limited in their delivery and do not necessarily integrate the latest teaching and external expertise available in Adelaide. The South Australian government could provide additional expertise to TAFE SA and other training providers to train new arborists to tackle emerging issues. For example, providing PIRSA staff to train students to recognise plant pathogens such as *Xylella* that are likely to arrive in South Australia and have the capacity to negatively impact our urban forest.

Inquiry into the Urban Forest

Submission to the Parliament of South Australia,
Environment, Resources & Development Committee

FEBRUARY 2023



4. Providing professional development opportunities for arborists to undertake training in town planning, asset management and advanced urban forestry skills that are associated with the management of urban trees in a complex and rapidly changing environment would improve the capacity of arborists to meet emerging requirements of their industry as well as improve industry retention of high performing arborists.

RECOMMENDATION 23: The State Government works with industry leaders on a review of the arboriculture industry including professional training standards, accreditation and support for local industry development.

END

10 Other Business**11 Meeting Closure**

The meeting shall conclude on or before 9.30pm unless there is a specific motion adopted at the meeting to continue beyond that time.