

Sustainable Futures Committee

Meeting Date: Wednesday, 29 November, 2017
Location: Jervis Bay Rooms, City Administrative Centre, Bridge Road, Nowra
Time: 4:00pm

Please note: Council's Code of Meeting Practice permits the electronic recording and broadcast of the proceedings of meetings of the Council which are open to the public. Your attendance at this meeting is taken as consent to the possibility that your image and/or voice may be recorded and broadcast to the public.

Agenda

1. Apologies
2. Confirmation of Minutes
 - Sustainable Futures Committee - 12 October 20171
3. Declarations of Interest
4. Presentations
 - SF17.28 Renewable Energies - Glen Conway Principal Engineer - Wollongong GHD

Glen Conway has recently joined the Wollongong team (GHD) as a Principal Engineer in the field of renewable energies. Glen has experience in technology assessment, planning and delivering utility scale renewable energy technologies including solar PV, wind and biomass/biogas and also technologies that enable renewable technology such as energy storage. Glen is a technical advisor to the Federal Government (ARENA) and has advised on battery energy storage, hydrogen, solar PV, bioenergy and biofuels. Of particular interest is work that Glen has recently performed on integrating battery energy storage into on-grid and off-grid applications. Whilst battery technology costs are falling, the applications of batteries and solar PV can offer industrial customers and government agencies improved power quality and reliability as well as potential to optimise utilisation of renewable resources e.g. solar PV. Locally Glen is also assisting a high school assess the potential to install solar PV to reduce long term energy costs. Glen would be happy to discuss opportunities for the council relating to its own requirements or opportunities in the broader Shoalhaven community.

SF17.20 Daniel Jones - Repower Shoalhaven

5. Reports

SF17.29 Terms of Reference Clarification - Purpose.....7

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Strategy Outcomes Hierarchy49

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6. General Business

SF17.17 ENOVA - Renewable Energy Retailer

Sustainable Futures Committee at its meeting on 17 August 2017
resolved that the matter be deferred to the meeting to be held on 12
October 2017

This item has been requested for discussion by Mr Oisin Sweeney.
ENOVA is a company based in the northern rivers that offers a model
in advance of this discussion. <https://enovaenergy.com.au/about-us/>

Membership

Clr Gartner – Chairperson
Clr White – Alternate Chairperson
Mayor
All Councillors
General Manager (or nominee) – non-voting
David Brawn
Oisin Sweeney
Robert Hayward
Peter McVay
Lorraine Larri

Quorum – Six (6) voting members

Purpose

The Sustainable Futures Committee will make recommendations to Council with respect to the following:

- Setting emission targets for the Shoalhaven.
- Focusing on energy, including energy efficiency, energy security and renewable energy generation as well as other climate change issues
- Creating and building community capacity for environmentally sustainable living and business.
- Addressing, adapting and building resilience to climate change.
- Appropriate ways to protect, connect and integrate ecological values within our urban and regional context.
- Supporting and promote Waste reduction and resource recovery.
- Building organisational and community capacity to meet the challenges of climate change.
- Engage with and learn from our community business and industry leaders on innovative solutions.
- Establish and/or support renewable energy generation projects in the community.
- Ensure the currency of related strategy, policy and other key Council documents related to the purpose of the Committee.

Delegation

To expend funds allocated to the Sustainable Futures Committee by Council within the approved budget.

MINUTES OF THE SUSTAINABLE FUTURES COMMITTEE

Meeting Date: Thursday, 12 October 2017
Location: Jervis Bay Rooms, City Administrative Centre, Bridge Road, Nowra
Time: 4:05pm

The following members were present:

Clr Kaye Gartner – Chairperson
Clr Patricia White
Clr Amanda Findley
Clr Mark Kitchener
Mr David Brawn
Mr Oisin Sweeney
Mr Robert Hayward
Mr Peter McVay
Ms Lorraine Larri

Others present:

Carmel Krogh – Director Shoalhaven Water
Phil Costello – Director Planning Environment Development Services
Kelie Clarke – Environmental Services Manager
Michael Smith – Team Supervisor - Environmental Planning and Assessment Officer

Apologies / Leave of Absence

Apologies were received from: Clr Levett, Clr Cheyne

Confirmation of the Minutes

RESOLVED (Clr Findley / Peter McVay)

That the Minutes of the Sustainable Futures Committee held on Thursday 17 August 2017 be confirmed.

CARRIED

Peter McVay noted that the purpose of the Committee had changed and asked for clarification, noting that the purpose should be the one endorsed by Council (i.e. consists of 6 points). The Committee discussed the issue and agreed.

Declarations of Interest

Nil

PRESENTATIONS

SF17.20 Daniel Jones - Repower Shoalhaven

HPERM Ref:
D17/248868

RESOLVED (By consent)

The Repower Shoalhaven presentation to be deferred to the next scheduled meeting on 29 November 2017.

CARRIED

SF17.21 Larraine Larri - Presentation - Community Engagement in Environmental Issues

HPERM Ref:
D17/291839

Larraine Larri provided a presentation to the Committee.

It was noted that the Committee work on an outcomes hierarchy and see where it goes.

Noting what the committee want to achieve.

RESOLVED (By consent)

That the Committee make reference to the program logic report when determining the outcomes hierarchy.

CARRIED

REPORTS

SF17.24 Sustainable Business Practices In Local Government

HPERM Ref:
D17/328542

Peter McVay spoke about the newsletter produced by the Office of Local Government which outlines new initiatives being undertaken.

Peter spoke about the following:

- There is a strong business case for sustainability
- Importance of the billing system
- Emission reduction
- Reducing bushfire risk
- Importance of local investors
- Importance of an action plan & setting priorities

Members discussed risk assessment and objectives.

It was suggested that community members could have discussions with directors of groups regarding how to make a contribution.

RESOLVED (Peter McVay / Cllr Gartner)

That the report regarding sustainable business practices in Local Government be received for information.

CARRIED

SF17.22 Renewable Energy Management - Progress**HPERM Ref:
D17/314816**

Note: The Committee noted the Resourcing Process.

Recommendation

That the Committee note the resourcing process and support the preparation of documents for Expressions of Interest for land-based and floating solar projects

Recommendation (Clr White / Peter McVay)

That Council support the preparation of documents for Expressions of Interest for land-based and floating solar projects with different funding models.

CARRIED

SF17.15 Helping Nature Help People**HPERM Ref:
D17/253999**

Note: This item was deferred from the meeting held 17 August 2017.

Oisin Sweeney addressed the Committee in relation to the report.

Note: Clr Kitchener left the meeting at 6.06pm

Recommendation

That Shoalhaven City Council develop and implement a Policy to facilitate nature-based solutions to ensure Shoalhaven residents have resilient communities in wildlife-friendly surrounds.

Recommendation (Clr White / Clr Findley)

That Council investigate the development and implementation of a Policy to facilitate nature-based solutions to strengthen the wellbeing and resilience of Shoalhaven residents and their environments, starting with the urban canopy as a nature based solution.

CARRIED

SF17.23 Weird Winter**HPERM Ref:
D17/323868**

Note: Clr Gartner addressed the Committee and noted the previous recommendation below.

Recommendation

That

1. The Committee receives the Climate Council Report on Australia's 2017 Winter Weather
2. The Committee prepare a summary, including the rainfall graphic and bushfire graphic, to inform our community and advise of increased risks to our community, which currently are bushfire events and water restrictions
3. This summary and graphics be posted on Council Facebook and webpages

RESOLVED (Clr Gartner / Robert Hayward)

That:

1. The Committee receives the Climate Council Report on Australia's 2017 Winter Weather.

2. Use the graphics from climate councils website as a contribution to the your neighbourhood newsletter.

CARRIED

SF17.24 SUSTAINABLE BUSINESS PRACTICES IN LOCAL GOVERNMENT

**HPERM REF:
D17/328542**

Item dealt with earlier in the meeting.

SF17.25 Discussion Paper on Progressing the Committee Agenda

**HPERM Ref:
D17/328567**

The Committee discussed this Item and raised the two following points:

- The Committee could invite Group Directors to workshop with the Committee on the pledges
- The Committee members could workshop a framework then bring back to the Committee for adoption then to Council for resolution.

Recommendation (Item to be determined under delegated authority)

That the Sustainable Future Committee begin:

1. Implementation such as through a prioritised action plan. This should assign clear responsibilities, identify all significant actions/risks and budget/investment requirements, consider timeframes and standardised reporting on progress to completion. Establishing small working groups involving staff, (councillors?) and community representatives on each of the agreed pledges may be useful in progressing the agreed initiatives;
2. Identifying what actions might be added to the agreed pledges to address the documented purpose of the committee. For example, what gaps are there in council's adaptation strategy for climate change such as in relation to fire risk, storm/flooding risk, delineation of hazard lines, et al. Is the strategy using adaptive management to regularly review risks and actions?
3. Establishing the priorities to improve sustainability within the Shoalhaven LGA? eg promoting: local community and market gardens; local produce markets; local energy security projects such as solar gardens in addition to those on council land; community transport, etc
4. identifying the best ways to progress community education/engagement about sustainability and the potential impacts of climate change. Options might include an electronic newsletter from the committee, press releases to local media, local seminars possibly jointly with bodies such as Emergency Services, the Rural Fire Service and National Parks, social media focus, building reference groups of local champions within the community and local businesses on different initiatives, etc

RESOLVED (By consent)

That the report regarding Discussion paper on Progressing the Committee Agenda be received for information and Peter McVay submit a further report to the next meeting.

CARRIED

GENERAL BUSINESS

SF17.17 ENOVA - Renewable Energy Retailer

HPERM Ref:
D17/254057

Note: this item be deferred to the next meeting for further discussion.

Sustainable Futures Committee at its meeting on 17 August 2017 resolved that the matter be deferred to the meeting to be held on 12 October 2017

This item has been requested for discussion by Mr Oisin Sweeney. ENOVA is a company based in the northern rivers that offers a model in advance of this discussion.
<https://enovaenergy.com.au/about-us/>

ADDENDUM REPORTS

SF17.27 Education for Locals and Tourists

HPERM Ref:
D17/331910

Recommendation (Item to be determined under delegated authority)

That:

1. The Committee commence a community education program for locals and tourists this summer.
2. Committee invite Communications staff to a round table discussion of themes for 2017 summer season.
3. This roundtable discuss how committee members can contribute content to the summer communications program.

RESOLVED (Oisin Sweeney / David Brawn)

That:

1. The Committee commence a community education program for locals and tourists this summer.
2. Committee invite Communications staff to a round table discussion of themes for 2017 summer season.
3. This roundtable discuss how committee members can contribute content to the summer communications program.

CARRIED

SF17.26 Global Covenant of Mayors for Climate and Energy

HPERM Ref:
D17/325038

Note: this item be deferred to the next meeting for further discussion.

Recommendation (Item to be determined under delegated authority)

That the Sustainable Futures Committee discuss the invitation to join the Global Covenant of Mayors for Climate and Energy.

SF17.27 EDUCATION FOR LOCALS AND TOURISTS

**HPERM REF:
D17/331910**

Item dealt with earlier in the meeting.

There being no further business, the meeting concluded, the time being 6.25pm.

Clr Kaye Gartner
CHAIRPERSON

SF17.29 Terms of Reference Clarification - Purpose

HPERM Ref: D17/356866

Group: Finance Corporate & Community Services Group
Section: Human Resources, Governance & Customer Service

Attachments:

1. Report to Climate Change Action Committee - 6 April 2017 [↓](#)
2. Sustainable Futures Committee Terms of Reference - Report Attachment
[↓](#)
3. Current Terms of Reference - Adopted by Council Tuesday 26 April 2017
[↓](#)

Purpose / Summary

To clarify the adopted 'purpose' of the Sustainable Futures Committee following discussion at the last meeting.

Recommendation (Item to be determined under delegated authority)

That the Sustainable Futures Committee receive the report – Terms of Reference Clarification - Purpose for information.

Options

1. As recommended

Implications: nil

2. The Committee make alterations to the Terms of Reference for adoption by Council

Implications: Nil

Background

At the Sustainable Futures Committee Meeting held on 12 October 2017, members queried the purpose of the Committee as stated on the agenda and asked that it be updated to reflect the current adopted purpose (comprised of 6 points) for the Committee.

At the Council Meeting held 20 December 2016, the Council resolved as follows: MIN16.1054

"That Council:

1. *Endorse the membership of the Climate Change Action Committee consisting of all Councillors and the General Manager;*
2. *Endorse the Purpose of the Climate Change Action Committee as follows:*
 - a. *To make recommendations to improve Councils response to potential impacts of climate change.*
 - b. *To improve sustainability within the Shoalhaven Local Government area.*

- c. Develop a Prioritised Action Plan that will empower the Shoalhaven Community to be more sustainable and improve the sustainability of Council operations and activities.*
- d. Identify and action funding opportunities which will improve Council's sustainability and its understanding and readiness of potential impacts of climate change.*
- e. Identify ways to educate the community about sustainability and the potential impacts of climate change.*
- f. Display strong leadership to the community by recommending sustainability and resilience building actions to Council for consideration*

3. That the quorum for the Committee be 5."

A Report was submitted to the Climate Change Action Committee including a new draft Terms of Reference at the meeting held on Thursday 6 April 2017 (attached).

The Terms of Reference were workshopped further at the meeting and reported to Council for endorsement at the next Council Meeting, held Tuesday 26 April 2017.

The current purpose of the Committee as adopted on 26 April 2017 states as follows:

"The Sustainable Futures Committee will make recommendations to Council with respect to the following:

- Setting emission targets for the Shoalhaven.*
- Focusing on energy, including energy efficiency, energy security and renewable energy generation as well as other climate change issues*
- Creating and building community capacity for environmentally sustainable living and business.*
- Addressing, adapting and building resilience to climate change.*
- Appropriate ways to protect, connect and integrate ecological values within our urban and regional context.*
- Supporting and promote Waste reduction and resource recovery.*
- Building organisational and community capacity to meet the challenges of climate change.*
- Engage with and learn from our community business and industry leaders on innovative solutions.*
- Establish and/or support renewable energy generation projects in the community.*
- Ensure the currency of related strategy, policy and other key Council documents related to the purpose of the Committee."*

The above Terms of Reference adopted by Council, including the purpose, have remained the same since Tuesday 26 April 2017. This confirms that the purpose shown on the agenda paper and in the terms of reference are current.

Should the Committee wish to make amendments to the Terms of Reference (attached) an alternate recommendation to Council can be made.

CC17.3 Climate Change Action Committee - Draft Terms of Reference including change of name

HPERM Ref: D17/107794

Group: Finance Corporate & Community Services Group
Section: Human Resources, Governance & Customer Service

Attachments: 1. Terms of Reference - Draft

Purpose / Summary

To consider the Terms of Reference for the Climate Change Action Committee and a change of name for the Committee to the Sustainable Futures Committee.

Recommendation

That Council

1. Change the name of the Climate Change Action Committee to the Sustainable Futures Committee
2. Adopt the Sustainable Futures Committee Terms of Reference as attached to this report
3. Appoint a Chairperson to the Committee
4. Appoint a Councillor for the membership selection committee
5. Advertise for applications for membership
6. Allocate a budget for the operations of the Committee

Options

1. As recommended
2. Not adopt the recommendation and make an alternative recommendation
Implications: This may require an amendment to the Terms of Reference.

Background

At its meeting of 15 November 2016, Council's Strategy and Assets Committee resolved that:

"Council reinstate the Climate Change Action Committee"

Further, at the Council Meeting held on 20 December 2016, Council resolved as follows (MIN16.1054):

"That Council:

1. *Endorse the membership of the Climate Change Action Committee consisting of all Councillors and the General Manager;*
2. *Endorse the Purpose of the Climate Change Action Committee as follows:*
 - a. *To make recommendations to improve Councils response to potential impacts of climate change.*
 - b. *To improve sustainability within the Shoalhaven Local Government area.*
 - c. *Develop a Prioritised Action Plan that will empower the Shoalhaven Community to be more sustainable and improve the sustainability of Council operations and activities.*
 - d. *Identify and action funding opportunities which will improve Council's sustainability and its understanding and readiness of potential impacts of climate change.*
 - e. *Identify ways to educate the community about sustainability and the potential impacts of climate change.*
 - f. *Display strong leadership to the community by recommending sustainability and resilience building actions to Council for consideration*
3. *That the quorum for the Committee be 5."*

Councillors White and Gartner, in consultation with staff have drafted the attached Terms of reference for consideration and discussion by the Committee.

It is also suggested that the name of the Committee be changed to the 'Sustainable Futures Committee' as this would better reflect the role of the Committee.

Financial Implications

Should the Committee wish to have a budget allocation, it would need to be included in considerations for the 2017/2018 budget.



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For more information contact the Finance Corporate & Community Services Group

Sustainable Futures Committee - Terms of Reference

Policy Number: POL17/49 • **Adopted:** *[Click here to enter date]* • **Minute Number:** *[Click here to enter Minute number]* • **File:** 37211E • **Produced By:** Finance Corporate & Community Services Group • **Review Date:**

1. STATEMENT

The Sustainable Futures Committee focuses on creating a healthy, livable and sustainable environment for residents in the Shoalhaven City Council.

This focus will include:

1. Energy - efficiency, security and generation
2. Waste – reduction, recovery and reuse
3. Adaptation and resilience to climate change

This committee makes recommendations which provide input to Councils Economic Development Strategy, Property Strategy and Waste Strategy and other relevant strategies and policies.

This committee furthers the work of the SCC Sustainability Action Plan 2011-16 and the SCC Climate Change Adaptation Plan 2011.

2. PURPOSE

The Sustainable Futures Committee will:

- Set emission targets for the Shoalhaven which are compatible with the NSW Zero Net Emissions by 2050 and the Federal Government signing of Paris Treaty
- Focus on energy, including energy efficiency, energy security and renewable energy generation as well as other climate change issues
- Create and build community capacity for environmentally sustainable living and business.
- Address adapt and build resilience to climate change
- Protect, connect and integrate biodiversity and water within our urban and regional context
- Support and promote Waste reduction and resource recovery
- Building organisational capacity for environmental sustainability in the face of climate change
- Engage with and learn from our community business and industry leaders in respect to knowledge gaps and potential revenue.

Shoalhaven City Council - Sustainable Futures Committee - Terms of Reference

- Establish and/or support renewable energy generation projects in the community e.g. solar gardens for low income communities
- Collaborate with Community Energy Generation Groups
- Ensure the currency of related strategy, policy and other key Council documents related to the purpose of the Committee
- Make recommendations to provide input into the Economic Strategy, Property Strategy Waste Strategy and relevant land use planning/development policies.

3. RELATIONSHIP TO COUNCIL

The Group is a Section 355 & 377 Committee of Council (Local Government Act 1993). It is a strategic advisory committee to advocate for Sustainable Futures in the Shoalhaven, including climate change energy renewal and waste and inform Council's decision making processes related to energy efficiency, security and renewable energy generation as well as other climate change issues that encompass sustainable futures for the Shoalhaven.

4. DELEGATED AUTHORITIES

To expend funds allocated to the Sustainable Futures Committee by Council within the approved budget.

5. MEETINGS

- 5.1. Meetings will be held monthly.
- 5.2. Agenda and minutes from the previous meeting will be circulated to members at least 7 days prior to the meeting. Any matters to be included on the agenda should be forwarded to the Chairperson and the Minute Secretary at least 14 days prior to the meeting
- 5.3. Members must declare in writing any interest in any report tabled at the meeting.
- 5.4. The administrative provisions of Council's adopted Code of Meeting shall apply subject to any amendment by this Advisory Committee.
- 5.5. Committee members who are absent for three (3) consecutive meetings of the Committee without tendering an apology will be requested in formal correspondence from Council to confirm their intention regarding their membership of the committee. Failure to respond may result in removal from this Committee.
- 5.6. Meetings are generally held at the Nowra Shoalhaven City Council Administrative Buildings, however meeting location changes can be negotiated with Committee Members.
- 5.7. Informal Committee meetings, special meetings that may discuss specific portfolio matters will be held as and when required or set by the Committee.
- 5.8. Progress towards the outcomes of Council's Community Strategic Plan 2023 will be reported to Shoalhaven City Council at Council meetings and corporate management meetings, where appropriate, throughout the year.

6. COUNCIL STAFF ATTENDANCE

- 6.1. Shoalhaven City Council will provide administrative staff who are normally required to attend the meetings of the Group to carry out the following tasks:
 - Collate and distribute Business Papers.

Shoalhaven City Council - Sustainable Futures Committee - Terms of Reference

- Organise meetings.
- Minute taking, storage and distribution of minutes and associated documents.
- Providing administrative support to the relevant Council staff to distribute information between the Group and the appropriate Sections within Council.
- Other staff at the relevant Group Directors' discretion or at the Committee's request can attend meetings as required. Staff have no voting privileges.

7. MEMBERSHIP

7.1. Voting Members

Councillors
All Councillors

Community Representatives

10 Community members with specific expertise e.g. policy background, energy (including new energy technology), climate change, waste and resource recovery

Representatives of the Following Groups, Organisations or Government Bodies:
One representative from each of the following:

- Red Energy
- RepowerShoalhaven
- Energy Locals and other new generators/retailers

7.2. Non-voting Members

- 7.2.1. Non-Voting Members can attend and speak to the meetings but are non-voting members.
- 7.2.2. All those present at a meeting who are not Voting or Non- Voting Members are Observers only and may only participate in the meeting with approval by the Chairperson.

7.3. Chairperson

- 7.3.1. Council will appoint the position of chairperson annually
- 7.3.2. The role of the chairperson shall be:
 - To act as Chairperson of meetings of the Committee
 - As a Representative on sub-committees as appropriate
 - To correspond with Council staff in relation to the actions of the Committee

7.4. Community Member Appointments

- 7.4.1. Nominations for Members should be advertised throughout the community.
- 7.4.2. Appointment to the Committee can be for a maximum four (4) years with a set commencement and finish date and standing members may re-nominate for an additional term.
- 7.4.3. Vacancies will be advertised locally via media and Council communication networks.
- 7.4.4. Council will manage the application process.

Shoalhaven City Council - Sustainable Futures Committee - Terms of Reference

- 7.4.5. An appointment panel will consist of a Council staff member, the Chair of the Committee and a Councillor to assess the applications and make recommendations for appointments to the Committee. Where a chairperson is not yet appointed, the Council will allocate a Councillor to act in the role of chairperson on the panel.

7.5. Casual Vacancies

- 7.5.1. Should vacancies arise in the period 3 months prior to the annual review by Council, a new or Casual member will not be appointed, unless the Council resolves to do so on receipt of recommendation by the Committee
- 7.5.2. Should there be a casual vacancy; the Committee will seek applications by appropriate means to fill these vacancies to align with the finish date.

7.6. Sub Committees/Working Groups/Represented Delegation

- 7.6.1. If representing the Committee on an identified working group/party your role is to represent the Committee's commitment and purpose.
- 7.6.2. The Committee will have the right to establish sub groups as deemed appropriate to assist in fulfilling their role and purpose.

7.7. Quorum

- 7.7.1. A quorum will consist of at least 50% plus one members of the Committee.
- 7.7.2. If a quorum is not present within 30 minutes of the time appointed for the commencement of the Committee meeting, the meeting shall lapse.

8. VOTING AND RECOMMENDATIONS

- 8.1. All formal members of the committee are entitled to a vote.
- 8.2. Where possible, voting on recommendations is made by consensus.
- 8.3. Where a consensus cannot be reached, then a formal vote of members will be undertaken and the majority vote will become the decision of the Committee. The alternate views are to be minuted.
- 8.4. In the event of a tied vote, the Chair can exercise a casting vote.
- 8.5. All decisions regarding the allocation of funding for works must be stated precisely and recorded in the minutes.
- 8.6. Committee recommendations which are determined to be purely or substantially 'operational' in nature, will be dealt with by the relevant council officer and any action or lack thereof reported to the Committee.
- 8.7. The ruling of the Chairperson in all matters of the Committee takes precedence.

9. COMMUNICATION

- 9.1. Members of the Committee are not permitted to speak to the media as representatives of the Committee unless approved by the chairperson.
- 9.2. Where approval has been given by the chairperson, views and opinions expressed are those of the Committee and not of Shoalhaven City Council.
- 9.3. When endorsement is required from Shoalhaven City Council, approval must be sought through the formal processes.
- 9.4. When issues are communicated to the media or by other public forum, information provided on those issues must include details of priorities, limitations and benefits to the community

Shoalhaven City Council - Sustainable Futures Committee - Terms of Reference

- 9.5. The Chairperson is the point of contact for communication between Committee members and Council staff.

10. PARENT COMMITTEE

- 10.1. Ordinary Council Meeting.

11. CODE OF CONDUCT

- 11.1. All members of the Committee are to abide by Council's Code of Conduct and will be required to make declarations of all Conflict of Interests.
- 11.2. Pecuniary Interest Returns may be required on appointment and annually as required by the Office of Local Government and Council.

12. CONFIDENTIALITY AND PRIVACY

- 12.1. Members are required to maintain the security of any confidential or personal information provided to them by Council or others for the purpose of the business of the Committee and not access or use any information, unless specific authorisation is given to do so.
- 12.2. Council will manage the private information of Committee Members in accordance with its adopted Privacy Management Plan.

13. REVIEW

- 13.1. This policy will be reviewed within 12 months of each Council election.
- 13.2. The Committee can recommend amendment to this Terms of Reference to Council at any time
- 13.3. Council at its discretion may review and change the Terms of Reference, role and structure of the Group at any time.



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For more information contact the Finance Corporate & Community Services Group

Sustainable Futures Committee - Terms of Reference

Policy Number: POL17/49 • **Adopted:** 26/04/2017 • **Minute Number:** MIN17.340 • **File:** 37211E • **Produced By:** Finance Corporate & Community Services Group • **Review Date:** 01/04/2021

1. STATEMENT

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This focus will include:

1. Energy - efficiency, security and generation
2. Waste – reduction, recovery and reuse
3. Adaptation and resilience to climate change

This committee makes recommendations which provide input to Council's Economic Development Strategy, Property Strategy and Waste Strategy and other relevant strategies and policies.

This committee furthers the work of the SCC Sustainability Action Plan 2011-16 and the SCC Climate Change Adaptation Plan 2011.

2. PURPOSE

The Sustainable Futures Committee will make recommendations to Council with respect to the following:

- Setting emission targets for the Shoalhaven.
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- Creating and building community capacity for environmentally sustainable living and business.
- Addressing, adapting and building resilience to climate change.
- Appropriate ways to protect, connect and integrate ecological values within our urban and regional context.
- Supporting and promote Waste reduction and resource recovery.
- Building organisational and community capacity to meet the challenges of climate change.
- Engage with and learn from our community business and industry leaders on innovative solutions.
- Establish and/or support renewable energy generation projects in the community.

Shoalhaven City Council - Sustainable Futures Committee - Terms of Reference

- Ensure the currency of related strategy, policy and other key Council documents related to the purpose of the Committee.

3. RELATIONSHIP TO COUNCIL

The Group is a Section 355 & 377 Committee of Council (Local Government Act 1993). It is a strategic advisory committee to advocate for Sustainable Futures in the Shoalhaven, including climate change energy renewal and waste and inform Council's decision making processes related to energy efficiency, security and renewable energy generation as well as other climate change issues that encompass sustainable futures for the Shoalhaven.

4. DELEGATED AUTHORITIES

To expend funds allocated to the Sustainable Futures Committee by Council within the approved budget.

5. MEETINGS

- 5.1. Meetings will be held bi-monthly with additional meetings as required.
- 5.2. Agenda and minutes from the previous meeting will be circulated to members at least 7 days prior to the meeting. Any matters to be included on the agenda should be forwarded to the Chairperson and the Minute Secretary at least 14 days prior to the meeting
- 5.3. Members must declare in writing any interest in any report tabled at the meeting.
- 5.4. The administrative provisions of Council's adopted Code of Meeting shall apply subject to any amendment by this Advisory Committee.
- 5.5. Committee members who are absent for three (3) consecutive meetings of the Committee without tendering an apology will be requested in formal correspondence from Council to confirm their intention regarding their membership of the committee. Failure to respond may result in removal from this Committee.
- 5.6. Meetings are generally held at the Nowra Shoalhaven City Council Administrative Buildings, however meeting location changes can be negotiated with Committee Members.
- 5.7. Informal Committee meetings, special meetings that may discuss specific portfolio matters will be held as and when required or set by the Committee.
- 5.8. Progress towards the outcomes of Council's Community Strategic Plan 2023 will be reported to Shoalhaven City Council at Council meetings and corporate management meetings, where appropriate, throughout the year.

6. COUNCIL STAFF ATTENDANCE

- 6.1. Shoalhaven City Council will provide administrative staff who are normally required to attend the meetings of the Group to carry out the following tasks:
 - Collate and distribute Business Papers.
 - Organise meetings.
 - Minute taking, storage and distribution of minutes and associated documents.
 - Providing administrative support to the relevant Council staff to distribute information between the Group and the appropriate Sections within Council.

Shoalhaven City Council - Sustainable Futures Committee - Terms of Reference

- Other staff at the relevant Group Directors' discretion or at the Committee's request can attend meetings as required. Staff have no voting privileges.

7. MEMBERSHIP**7.1. Voting Members**Councillors

All Councillors

Community Representatives

5 community members with specific expertise e.g. policy background, energy (including new energy technology), ecology, sustainable economic development, climate change, waste and resource recovery.

7.2. Non-voting Members

7.2.1. The General Manager or nominated Director.

7.2.2. Non-Voting Members can attend and speak to the meetings but are non-voting members.

7.2.3. All those present at a meeting who are not voting or Non-voting members are observers only and may only participate in the meeting with approval by the Chairperson.

7.3. Chairperson

7.3.1. Council will appoint the position of chairperson annually

7.3.2. The role of the chairperson shall be:

- To act as Chairperson of meetings of the Committee
- As a representative on sub-committees as appropriate
- To correspond with Council staff in relation to the actions of the Committee

7.4. Community Member Appointments

7.4.1. Nominations for Members should be advertised throughout the community.

7.4.2. Appointment to the Committee can be for a maximum four (4) years with a set commencement and finish date and standing members may re-nominate for an additional term.

7.4.3. Vacancies will be advertised locally via media and Council communication networks.

7.4.4. Council will manage the application process.

7.4.5. An appointment panel will consist of a Council staff member, the Chair of the Committee and a Councillor to assess the applications and make recommendations for appointments to the Committee. Where a chairperson is not yet appointed, the Council will allocate a Councillor to act in the role of chairperson on the panel.

7.5. Casual Vacancies

- 7.5.1. Should vacancies arise in the period 3 months prior to the annual review by Council, a new or Casual member will not be appointed, unless the Council resolves to do so on receipt of recommendation by the Committee
- 7.5.2. Should there be a casual vacancy; the Committee will seek applications by appropriate means to fill these vacancies to align with the finish date.

7.6. Sub Committees/Working Groups/Represented Delegation

- 7.6.1. If representing the Committee on an identified working group/party your role is to represent the Committee's commitment and purpose.
- 7.6.2. The Committee will have the right to establish sub groups as deemed appropriate to assist in fulfilling their role and purpose.

7.7. Quorum

- 7.7.1. A quorum will consist of 6 voting members.
- 7.7.2. If a quorum is not present within 30 minutes of the time appointed for the commencement of the Committee meeting, the meeting shall lapse.

8. VOTING AND RECOMMENDATIONS

- 8.1. All formal members of the committee are entitled to a vote.
- 8.2. Where possible, voting on recommendations is made by consensus.
- 8.3. Where a consensus cannot be reached, then a formal vote of members will be undertaken and the majority vote will become the decision of the Committee. The alternate views are to be minuted.
- 8.4. In the event of a tied vote, the Chair can exercise a casting vote.
- 8.5. All decisions regarding the allocation of funding for works must be stated precisely and recorded in the minutes.
- 8.6. Committee recommendations which are determined to be purely or substantially 'operational' in nature, will be dealt with by the relevant council officer and any action or lack thereof reported to the Committee.
- 8.7. The ruling of the Chairperson in all matters of the Committee takes precedence.

9. COMMUNICATION

- 9.1. Members of the Committee are not permitted to speak to the media as representatives of the Committee unless approved by the chairperson.
- 9.2. Where approval has been given by the chairperson, views and opinions expressed are those of the Committee and not of Shoalhaven City Council.
- 9.3. When endorsement is required from Shoalhaven City Council, approval must be sought through the formal processes.
- 9.4. When issues are communicated to the media or by other public forum, information provided on those issues must include details of priorities, limitations and benefits to the community

Shoalhaven City Council - Sustainable Futures Committee - Terms of Reference

- 9.5. The Chairperson is the point of contact for communication between Committee members and Council staff.

10. PARENT COMMITTEE

- 10.1. Ordinary Council Meeting.

11. CODE OF CONDUCT

- 11.1. All members of the Committee are to abide by Council's Code of Conduct and will be required to make declarations of all Conflict of Interests.
- 11.2. Pecuniary Interest Returns may be required on appointment and annually as required by the Office of Local Government and Council.

12. CONFIDENTIALITY AND PRIVACY

- 12.1. Members are required to maintain the security of any confidential or personal information provided to them by Council or others for the purpose of the business of the Committee and not access or use any information, unless specific authorisation is given to do so.
- 12.2. Council will manage the private information of Committee Members in accordance with its adopted Privacy Management Plan.

13. REVIEW

- 13.1. This policy will be reviewed within 12 months of each Council election.
- 13.2. The Committee can recommend amendment to this Terms of Reference to Council at any time
- 13.3. Council at its discretion may review and change the Terms of Reference, role and structure of the Group at any time.

SF17.26 Global Covenant of Mayors for Climate and Energy

HPERM Ref: D17/325038

Group: Planning Environment & Development Group
Section: Environmental Services

Attachments: 1. Invitation to Join the Global Covenant [↓](#)
2. Global Covenant Information Pack [↓](#)

Sustainable Futures Committee at its meeting on 12 October 2017 resolved that the matter be deferred to the meeting to be held on 29 November 2017.

Purpose / Summary

To inform the Committee of an invitation to join the Global Covenant of Mayors for Climate and Energy.

Recommendation (Item to be determined under delegated authority)

That the Sustainable Futures Committee discuss the invitation to join the Global Covenant of Mayors for Climate and Energy.

Options

1. Join the Covenant of Mayors for Climate and Energy

Implications: Demonstration of leadership to the community. Council will need to identify how the three key commitments of this program will be achieved. Council does not have a dedicated position with capacity to undertake these tasks. However, we have committed to setting a reduction target and doing a level of emissions assessment through the Cities Power Partnership program, so some of the reportables will be similar for both programs. The question is whether Council wants to join a second program with similar requirements and vision.

2. Do not join the Covenant of Mayors for Climate and Energy

Implications: Council has recently joined the Cities Power Partnership program which has five key measures that Council has committed too. The extra reporting requirements of a second program will be avoided by not joining the Covenant.

Background

The Global Covenant of Mayors for Climate and Energy is the largest coalition of local governments participating in climate action. It is an international effort where Mayors, councils and local communities are working together to achieve local solutions.

On hundred and twenty countries are involved in this Covenant. In Australia, 22 local councils have joined. If Council chooses to join they will be committing to a multi year program of measurement, verification and reporting. This will require:

- Development of a community greenhouse emission inventory and hazard assessment within the first 12 months of membership.

- Setting a greenhouse reduction target within 24 months
- Submitting a Climate Action Plan within 3 years.

ICLEI will provide a range of supporting software tools to assist member councils to meet the membership requirements. Membership will also result in an invitation to the Climate Summit of Local and Regional Leaders in Bonn Germany from 6-17 November 2017.

Financial Implications

If Council joins this program, resourcing will need to be identified to fulfil the three reportable commitments identified in this report.



ICLEI Oceania
PO Box 24263 Melbourne VIC 3001, Australia
Ph: +61 3 9639 8688
Web: www.iclei.org/oceania
Email: oceania@iclei.org



September 2017

Dear Mayor

Invitation to join the Global Covenant of Mayors for Climate and Energy

The Global Covenant of Mayors for Climate and Energy is the largest and most important coalition of local governments participating in climate action. This is an international effort where Mayors, councils and local communities are working together to achieve local solutions while contributing to global climate challenges.

We are now extending an invitation to you and your council to become involved in this global effort and to take the opportunity to showcase your councils contribution internationally.

This global coalition of cities, towns and regions aims to demonstrate and share their ambitious intention to become low carbon, encouraging renewable energy and energy efficiency, while being better adapted to climate change and importantly more climate resilient.

With the merging of the international Compact of Mayors and the EU based Covenant of Mayors over 7,400 committed cities from 120 countries have formed the Global Covenant of Mayors for Climate and Energy, the largest global network of councils leading action to respond to climate change.

In Australia the first 22 local councils have now formally joined reflecting 10% of the population. We are now able to extend the invitation to your Council to be part of this important campaign.

Councils joining the Global Covenant of Mayors for Climate and Energy will be committing to a multi year program of measurement, verification and reporting and therefore achievement. In most cases this is complementary to other initiatives and campaigns your council may be already involved in. This provides the global dimension to your work and is recognized and supported by international best practices, resources and peak organisations.

To join your council will:

- Provide a letter of intent to be recognized as leaders in local climate action
- Undertake an initial community greenhouse emission inventory and hazards assessment within 12 months
- Select a greenhouse reduction target within 24 months
- Submit a Climate Action Plan. A climate action plan shows how a council will deliver on its commitment to reduce greenhouse gas emissions and develop a Climate Adaptation Plan within 3 years.

To support new local councils joining the Global Covenant of Mayors for Climate and Energy, ICLEI Oceania as one of the founding partners, has numerous resources, specific software, case studies, tailored events and support structures to help.

Each council joining has the opportunity for the Mayor, councillors and staff to attend international climate events, national and state based forums and seminars, and have access to tailored resources on energy efficiency and climate adaptation planning.

Each new council joining will have access to local government specific measurement software access to "Carbonn" climate registry and specific resources to assist you to meet compliance steps. Your council profile will be identified in numerous specific website and included in reports to national government, the international local government community and the United Nations.

A list of councils already involved and more details of the program, benefits, resources and compliance steps can be found at the Global Covenant websites (www.globalcovenantofmayors.org) (mayors.oceania.iclei.org) (www.compactofmayors.org).

I would be extremely keen to discuss with you the possibility of how your Council could be involved in this exciting initiative and how your climate and energy programs and the Global Covenant of Mayors can be aligned for the mutual benefit. Should you wish to make the commitment to join the Global Covenant of Mayors for Climate and Energy you can use the attached template letter of commitment and return to me.

If you should decide to join now you may be formally invited to attend the Climate Summit of Local and Regional Leaders, a side event to the UNFCCC at COP23 in Bonn Germany 6 – 17 November 2017. This will be the largest gathering of Mayors since the Paris Climate Agreement, 2015

Finally I can be reached by email to answer any questions about this and if possible arrange a visit to discuss the Global Covenant of Mayors with you or council staff.

Yours sincerely,



Bernie Cotter

Global Covenant of Mayors Regional Manager for ICLEI Oceania

Email oceania@iclei.org Website: mayors.oceania.iclei.org Mobile: 0431 265 860

Copy to Council CEO or GM



The Global Covenant of Mayors for Climate and Energy is supported by ICLEI local governments for sustainability (ICLEI), in partnership with C40 Leadership Group, United Cities and Local Government (UCLG), UN Habitat, and Michel Bloomberg - the UN Special Envoy for Cities and Climate Change. In Australia we support State governments and NGOs promoting climate action programs.



Welcome to the new **Global Covenant of Mayors for Climate & Energy**, a newly merged initiative between the **Compact of Mayors** and the **Covenant of Mayors**.

Six months after the successful Paris Climate Agreement, two of the world's primary city-led climate change and energy initiatives, the EU Covenant of Mayors and the Compact of Mayors, announced the formation of a new, first-of-its-kind global initiative of cities and local governments leading in the fight against climate change. This single initiative will create the largest global coalition of cities committed to climate leadership, building on the commitments of more than 7,100 cities from 119 countries and six continents, representing more than 600 million inhabitants, over 8% of the world's population.

Letterhead for your Council

Template letter of intent

Global Covenant of Mayors
c/- ICLEI Oceania Secretariat
PO Box 24263 Melbourne 3001
Victoria Australia
oceania@iclei.org

Letter of Intent

Global Covenant of Mayors for climate and energy

I hereby declare the intent of <insert city name> to comply with the Global Covenant of Mayors, the world's largest cooperative effort among mayors and city leaders to reduce greenhouse gas emissions, track progress, and prepare for the impacts of climate change.

The Global Covenant of Mayors for climate and energy is the new partnership between the Compact of Mayors and the Covenant of Mayors. We commit to a series of requirements to meet over time.

We commit to advancing the <insert City name > along the stages of the Global Covenant of Mayors, with the goal of becoming fully compliant with all the requirements within three years. Specifically, I pledge to publicly report on the following within the next three years:

- The greenhouse gas emissions inventory for our city consistent with the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC), within one year or less
- The climate hazards faced by our city, within one year or less
- Our target to reduce greenhouse gas emissions, within two years or less
- The climate vulnerabilities faced by our city, within two years or less
- Our plans to address climate change mitigation and adaptation within three years or less

Yours Faithfully,

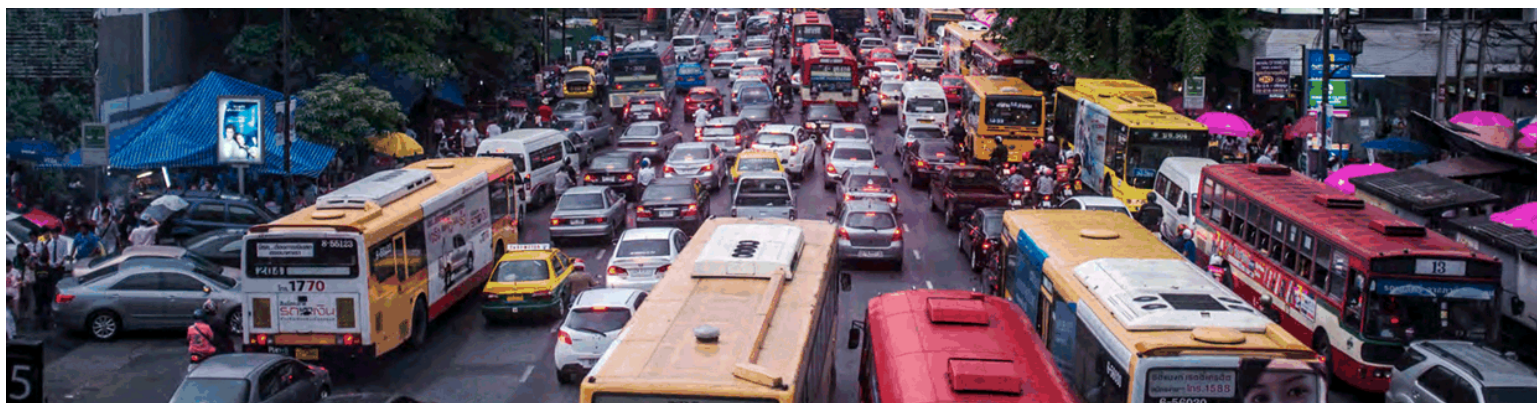
Signed by Mayor



The Compact of Mayors is a global coalition of mayors and city officials committing to reduce local greenhouse gas emissions, enhance resilience to climate change and track their progress publicly. It is an agreement by city networks – and then by their members – to fight climate change in a consistent and complimentary manner to national efforts.

- The Compact collects the significant climate action data that cities are already reporting in a consistent, transparent manner and makes that data available in a single place.
- The Compact builds on existing cooperative efforts, partnering with other initiatives to better measure and communicate the impact of city action.
- The Compact represents the greatest opportunity to bring attention to, and quantify, city action, both in the lead-up to Paris and beyond.





WHY COMMIT TO THE COMPACT OF MAYORS?

Compact of Mayors benefits:

- New and widespread recognition of innovative and impactful city action already underway for years
- Platform to demonstrate commitment to be part of the global solution
- Consistent, standardized and reliable assessment of city impact and progress toward meeting commitments
- Evidence of the greenhouse gas impact of city action
- Increased investor confidence and capital flows into cities
- Mechanism for national governments to recognize and resource local commitments





WHAT MAKES THE COMPACT OF MAYORS UNIQUE?

BUILDS ON INITIATIVES FOR GREATER IMPACT AND RECOGNITION: The Compact is the broadest coalition to unite cities, networks and other global partners with a common aim—to support more climate action in cities, and share the impact of city action with the international community.

STANDARDIZES MEASUREMENT AND REPORTING: For the first time, the Compact will standardize the way city climate data is reported, establishing a universal approach to data collection. The data can be aggregated to highlight the collective impact of city actions, which will increase global and investor confidence.

MAKES DATA AVAILABLE TO THE PUBLIC: Cities primarily report their climate data/actions through two major platforms—CDP (www.cdp.net) and carbonn Climate Registry (carbonn.org)—both of which are partners to the Compact. The Compact will make this data centrally and publicly available through the carbonn Climate Registry to highlight commitments and allow for easy searchability.





MEASUREMENT

**“If you can’t
measure it, you
can’t manage it.”**

—MICHAEL R. BLOOMBERG

Measurement, planning and reporting are critical to achieving climate goals, and Bloomberg’s guiding maxim underscores the mission of the Compact of Mayors.

With the use of consistent, transparent measurements, the Compact aims to get cities around the world on a common platform so that the impact of their collective actions on greenhouse gas emissions can be accurately captured.



HOW TO PARTICIPATE IN THE COMPACT OF MAYORS

Any city or town in the world may commit to the Compact of Mayors—regardless of size or location. A city has up to three years to meet a series of requirements and fully comply, culminating in the creation of a full climate action and adaptation plan, and it will be recognized as each step is met. Many cities have already completed some of the activities and can be compliant in fewer than three years.

To commit to the Compact, a city must:



REGISTER COMMITMENT.

A mayor may register on either of the Compact's standard reporting platforms—carbonn Climate Registry or CDP—or email a letter of intent to info@compactofmayors.org. Following its submission, a city will be contacted by the Compact support team.



TAKE INVENTORY.

Within one year, a mayor must assess the current impacts of climate change in his/her city. To do so, the city must 1) Build and complete a community-wide GHG inventory with a breakdown of emissions for buildings and transport sectors, using the GPC standard; (2) Identify climate hazards; and (3) Report on both via the CDP or carbonn Climate Registry questionnaires.



CREATE REDUCTION TARGETS AND ESTABLISH A SYSTEM OF MEASUREMENT.

Within two years, the registered city must update its GHG inventory to also include a breakdown of emissions from waste sector; set a target to reduce its GHG emissions; conduct a climate change vulnerability assessment consistent with Compact guidance; and report in its chosen platform.



ESTABLISH AN ACTION PLAN.

Within three years, a city's strategic action plan must show how it will deliver on its commitment to reduce greenhouse gas emissions and adapt to climate change.

COMMITTED AND COMPLIANT BADGES

To join the Compact, a city leader must engage in the following four phases over a 3 year period. Each phase has a 2 step process: Mitigation and Adaptation.



Phase 1



Phase 2



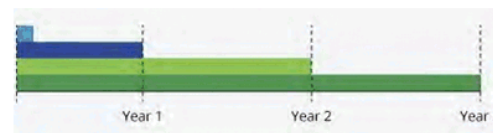
Phase 3



Phase 4



Compliant



Establish An Action Plan

Within three years, a city's strategic action plan must show how it will deliver on its commitment to reduce greenhouse gas emissions and adapt to climate change.

Upon registering its commitment to the Compact of Mayors, a city will receive an official "Committed" badge.



Upon completing all requirements, a city will receive a "Compliant" badge. A new "Compliant" badge will be issued each year that compliance is maintained through annual reporting.



These badges may be publicly displayed online and in print materials.



STEP 1 — COMMITMENT



REGISTER COMMITMENT.

MITIGATION

- Cities commit to:
 - > Reduce local GHG emissions.
 - > Measure community emissions inventory using the GPC – a consistent and robust standard.
 - > Set data-based targets for the future.
 - > Develop climate action plans to deliver on city targets.

ADAPTATION

- Cities commit to:
 - > Address the impacts of climate change.
 - > Identify climate hazards.
 - > Assess vulnerabilities.
 - > Develop climate adaptation plans.

A city may register at carbonn Climate Registry or CDP or email a letter of intent to join to info@compactofmayors.org. (A template letter is available for download on www.compactofmayors.org.)



STEP 2 — INVENTORY



TAKE INVENTORY.

MITIGATION

- Build and complete a community-wide GHG inventory using the GPC Standard.
- Report via CDP or carbonn Climate Registry.

In year one, cities only need to report on emissions in two sectors: stationary energy and inboundary travel. In year two, they must report on all sectors.

ADAPTATION

- Identify climate hazards
- Report hazards via the CDP or carbonn Climate Registry questionnaires.

STEP 3 — TARGET



SET REDUCTION TARGETS.

MITIGATION

- Update GHG inventory to also include a breakdown of emissions from waste sector.
- Set GHG reduction target.
- Report in chosen platform.

ADAPTATION

- Assess climate change vulnerability utilizing Compact guidance.
- Report in chosen platform.

STEP 4 — PLAN



CREATE EITHER A JOINT OR INDIVIDUAL ACTION PLAN TO ADDRESS CLIMATE MITIGATION AND ADAPTATION.

MITIGATION

- Develop climate action plan demonstrating how city will deliver on its commitment to reduce greenhouse gas emissions.
- Report in chosen platform.

ADAPTATION

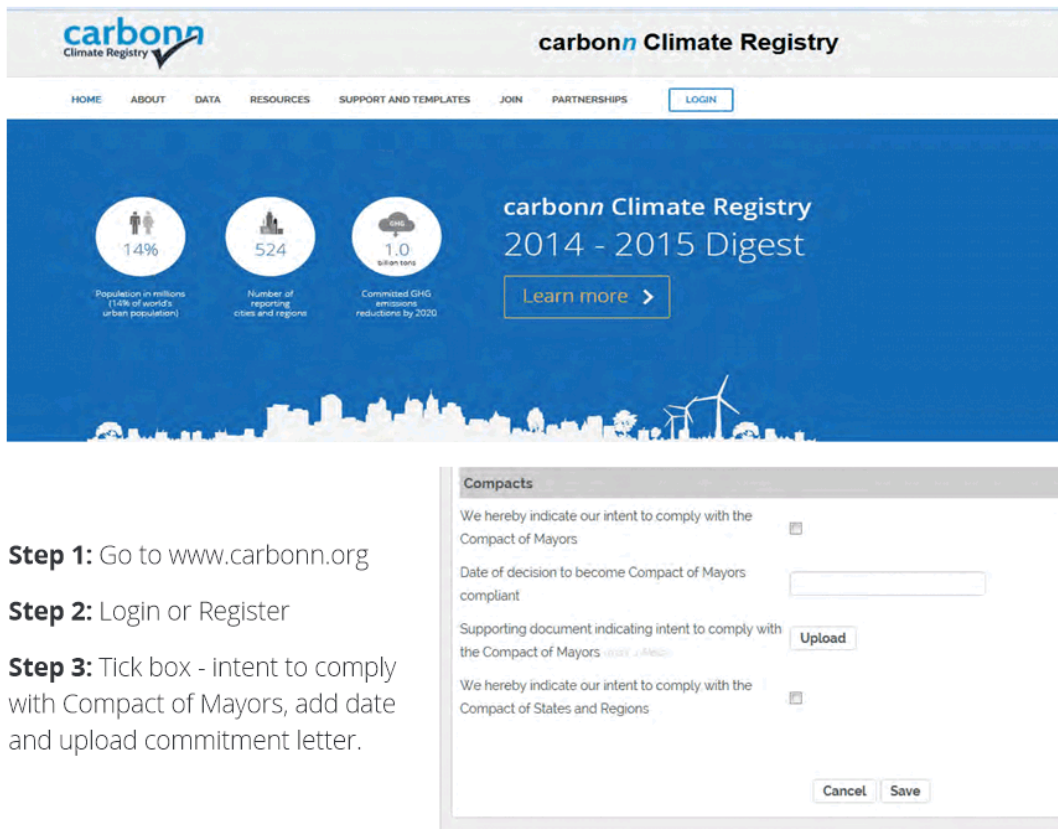
- Develop a climate change adaptation plan demonstrating how the city will adjust to actual or expected climate change impacts.
- Report in chosen platform.

Once Step 4 has been completed, a city will have met all of the Compact of Mayors requirements and will be fully compliant. To maintain compliance, a city will report its progress on mitigation and adaptation annually.



HOW TO REPORT: REPORTING VIA CARBONN CLIMATE REGISTRY

1. Register your commitment.
2. Report your inventory and climate risk.
3. Report your target.
4. Upload your climate action plan.



The screenshot shows the carbonn Climate Registry website. The homepage features a blue header with the logo and navigation links: HOME, ABOUT, DATA, RESOURCES, SUPPORT AND TEMPLATES, JOIN, PARTNERSHIPS, and a LOGIN button. Below the header, three circular icons display statistics: 14% (Population in millions), 524 (Number of reporting cities and regions), and 1.0 (Committed GHG emissions reductions by 2020). A 'Learn more' button is also present. Below the homepage, a 'Compacts' form is shown, which includes checkboxes for 'We hereby indicate our intent to comply with the Compact of Mayors' and 'We hereby indicate our intent to comply with the Compact of States and Regions', a date input field, and an 'Upload' button for supporting documents. The form also has 'Cancel' and 'Save' buttons at the bottom.

Step 1: Go to www.carbonn.org

Step 2: Login or Register

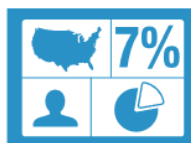
Step 3: Tick box - intent to comply with Compact of Mayors, add date and upload commitment letter.

HOW DOES THE COMPACT OF MAYORS SHOWCASE CITY ACTION?

Once cities input their data into carbonn Climate Registry or CDP, data is:



- Consolidated in the Compact's central database, the carbonn Climate Registry, accessible through...



A city profile:

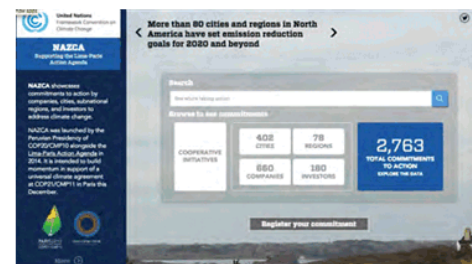
Including highlights around commitment status, key actions taken and a mayoral profile.

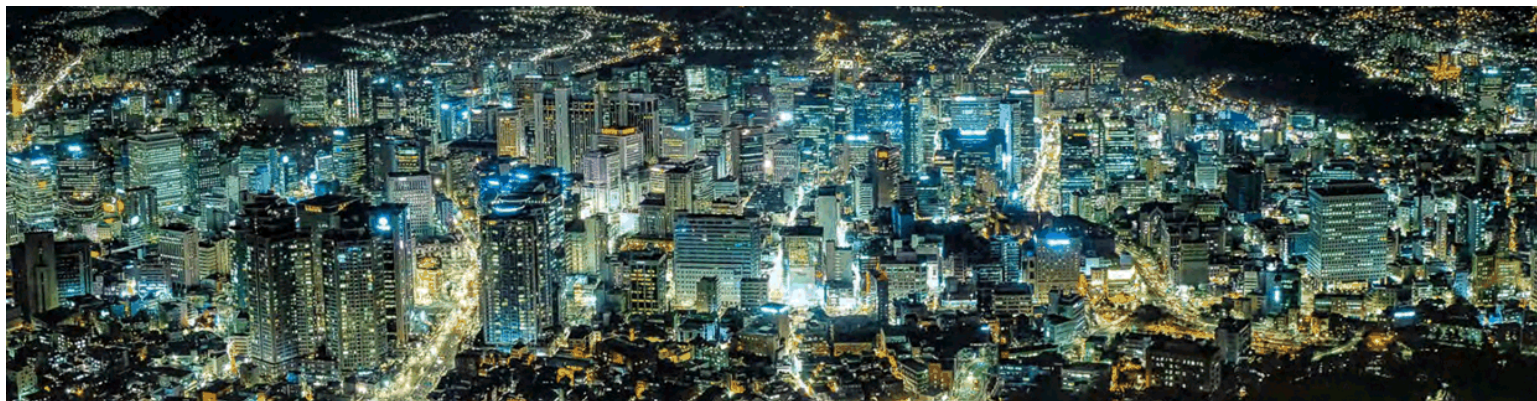


A searchable database:

All city Compact data will be made available publicly through a consolidated database; every city will input the same data.

- Aggregated to show the collective impact of all Compact commitments:
 - > A summary number of GHG impact of all city commitments, globally
 - > A summary number of population covered by city commitments, globally
- Shared with the UNFCCC NAZCA (The Non-state Actor Zone for Climate Action) website via the carbonn Climate Registry database as an input into the official UN climate negotiation process





RESOURCES FOR CITIES

Tools for compliance

Measurement and planning tools for cities at each step of process: GHG inventory, climate action planning, risk assessment framework and more

Technical support and training

Materials and guidance documents covering GPC inventories, climate action planning, risk assessment, etc.

Direct support

info@compactofmayors.org



PARTNERS

Founding Partners

MICHAEL R. BLOOMBERG | UN Secretary-General's Special Envoy for Cities and Climate Change

Michael R. Bloomberg is an entrepreneur and philanthropist who served three terms as mayor of New York City, from 2002 through 2013. In 2014, U.N. Secretary-General Ban Ki-moon appointed Bloomberg to be Special Envoy for Cities and Climate Change, for which he is focusing on helping cities and countries set and achieve more ambitious goals for mitigating and adapting to climate change.

The **C40 Cities Climate Leadership Group**, now in its 10th year, connects more than 75 of the world's greatest cities, representing 500+ million people and one quarter of the global economy. Created and led by cities, C40 is focused on tackling climate change and driving urban action that reduces greenhouse gas emissions and climate risks, while increasing the health, wellbeing and economic opportunities of urban citizens. The current chair of the C40 is Rio de Janeiro Mayor Eduardo Paes; three-term Mayor of New York City Michael R. Bloomberg serves as president of the board.

Created in 2004, **United Cities and Local Governments (UCLG)** is the united voice and world advocate of local and regional self-government. Members of UCLG are present in 140 countries, and are organized into seven regional sections, a Forum of Regions, and a metropolitan section. UCLG's membership includes over 1,000 cities and regions, as well as 155 local government associations.

ICLEI-Local Governments for Sustainability is a global association of over 1,000 cities, towns and metropolises committed to building a sustainable future. ICLEI has around 300 urban development professionals working in 17 secretariats and offices, supporting cities and regions to become sustainable, low-carbon, resilient, biodiverse, resource-efficient and productive, ecomobile, smart, and healthy and happy. More than 20% of the world's urban population benefit from ICLEI's work which is global in scope and impact, and yet very local in implementation.

The **United Nations Human Settlements Programme, UN-Habitat**, is the United Nations agency for sustainable urban development. It is mandated to promote socially and environmentally sustainable towns and cities while advocating adequate shelter for all.

Other Partners

Reporting Partners



Funding Partners



City, Local and Regional Government Networks



Endorsing partners



SF17.30 Nature-based solutions - urban ecology - options for Implementation

HPERM Ref: D17/383454

Group: Planning Environment & Development Group
Section: Environmental Services

Attachments: 1. Concept Streetscaping Options [↓](#)

Purpose / Summary

At its meeting held on 12 October 2017, the Sustainable Futures Committee resolved that Council investigate the development and implementation of a policy to facilitate nature-based solutions to ensure Shoalhaven residents have resilient communities in wildlife-friendly surrounds.

Recommendation (Item to be determined under delegated authority)

That the Committee

1. Undertake a selected audit of the urban tree canopy to help Council understand the economic and other values trees provide to the communities of the Shoalhaven; and
2. Invite Sutherland Shire Council to present their award winning model for bringing back an indigenous tree canopy with a view to implementing such a model in the Shoalhaven; and
3. Establish an internal working group with representatives from Environmental Services, Recreation Community & Culture, City Design Unit and Strategic Planning to investigate options for amendments to the DCP to incorporate the practical retention of remnant vegetation generally and specifically in urban release areas.

Options

1. As recommended.
 - a. Undertake a selected audit of the urban tree canopy to help Council understand the economic and other values trees provide to the communities of the Shoalhaven.
 - b. Invite Sutherland Shire Council to present their award-winning model for bringing back an indigenous tree canopy with a view to implementing such a model in the Shoalhaven.
 - c. Establish an internal working group with representatives from Environmental Services, City Design Unit and Strategic Planning to investigate options for amendments to the DCP to incorporate the practical retention of remnant vegetation generally and specifically in urban release areas.

Implications: The Committee would need to allocate part of its budget to the implementation of this recommendation.

2. Council not undertake an urban tree canopy audit and amendments to its DCP.

Implications: Potentially the urban tree canopy will continue to decline, as there is no active replacement program.

3. Alternative recommendation.

Implications: Unknown

Background

Retaining native trees and other vegetation in urban areas is important for a number of reasons

- Mitigating the impacts of climate change – Climate Change is projected to increase temperatures in Sydney with maximum temperatures projected to increase by 0.7°C by 2030, with changes in land-use having the potential to double the temperature increases caused by climate change in urban environments. Change in land-use from grasslands to medium density has the greatest increase in heat (0.4°C – 0.9°C for the Illawarra). <http://climatechange.environment.nsw.gov.au/Impacts-of-climate-change/Heat/Urban-heat>
<http://climatechange.environment.nsw.gov.au/Climate-projections-for-NSW/Climate-projections-for-your-region/Illawarra-Climate-Change-Downloads>
- Public amenity – trees add and make our living spaces more attractive, and provide health benefits in terms of providing protection and shade during hotter months, and absorbing CO2 and pollutants.
- Provide habitat for native fauna, particularly in passive open space reserves that require rehabilitation.

Issues

Trees are disappearing from existing urban areas as older trees die or are removed and not replaced. This is illustrated in the example below in figures 1 and 2.

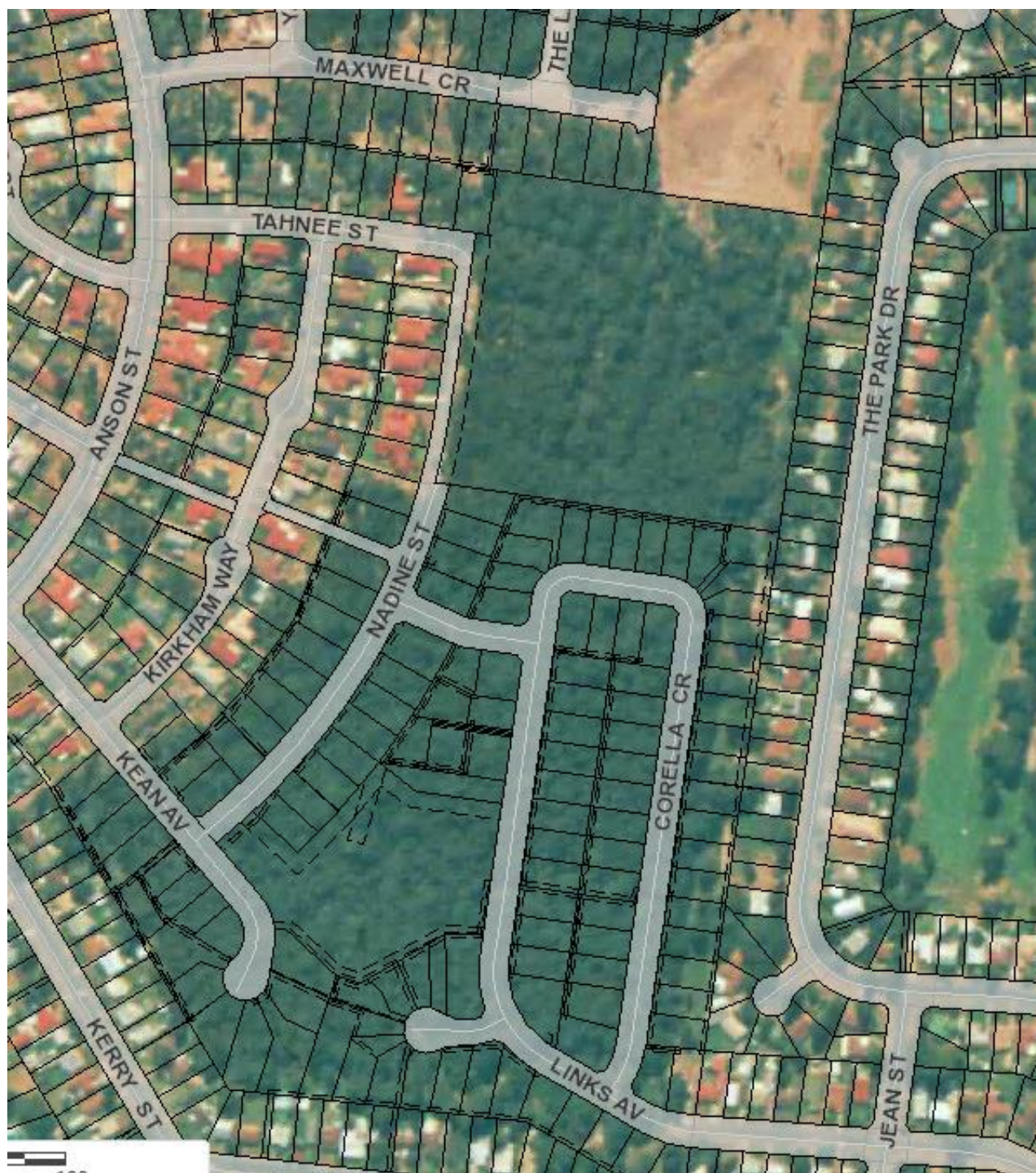


Figure 1: Aerial photograph 2001 – Sanctuary Point area

SF17.30

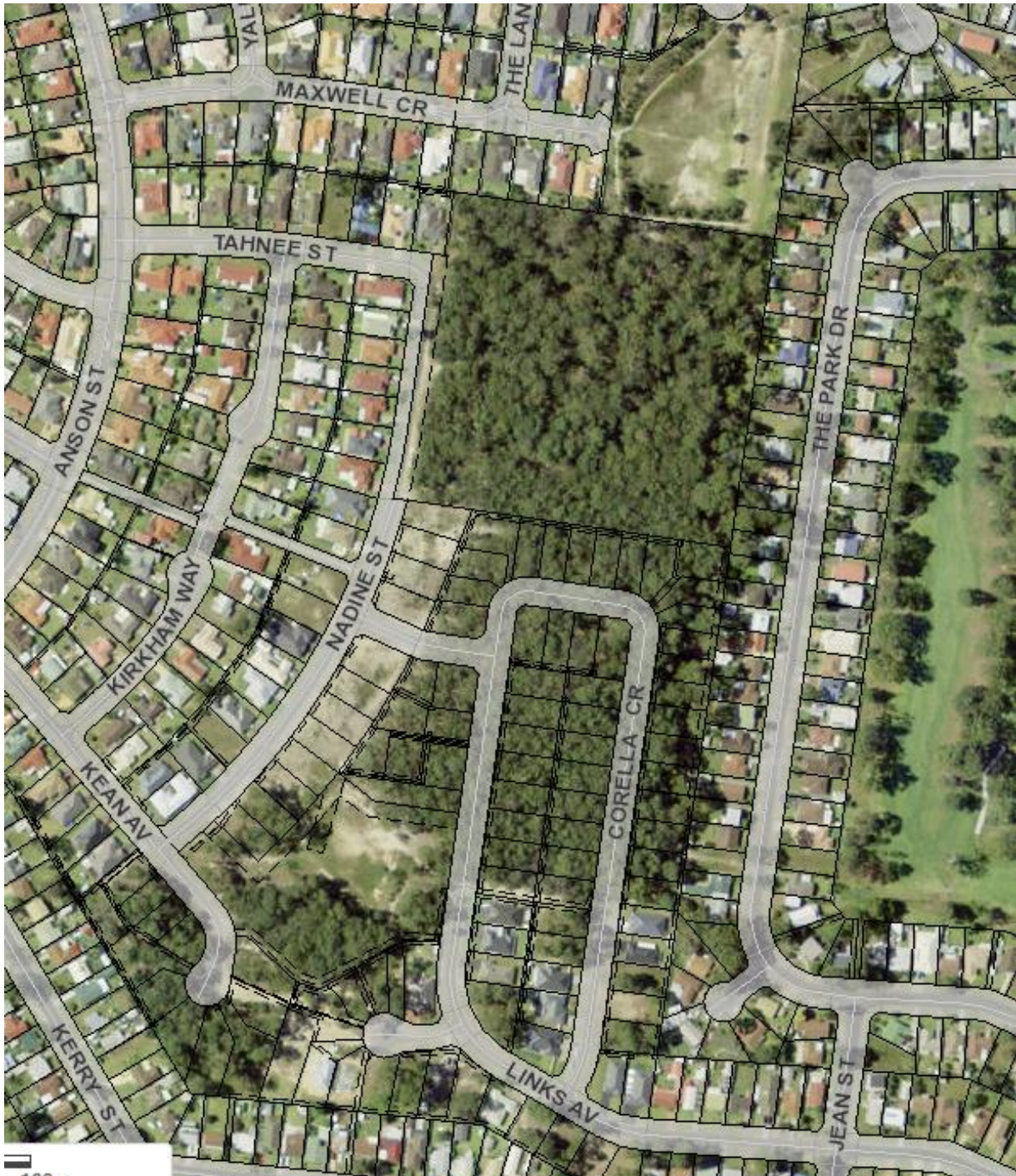


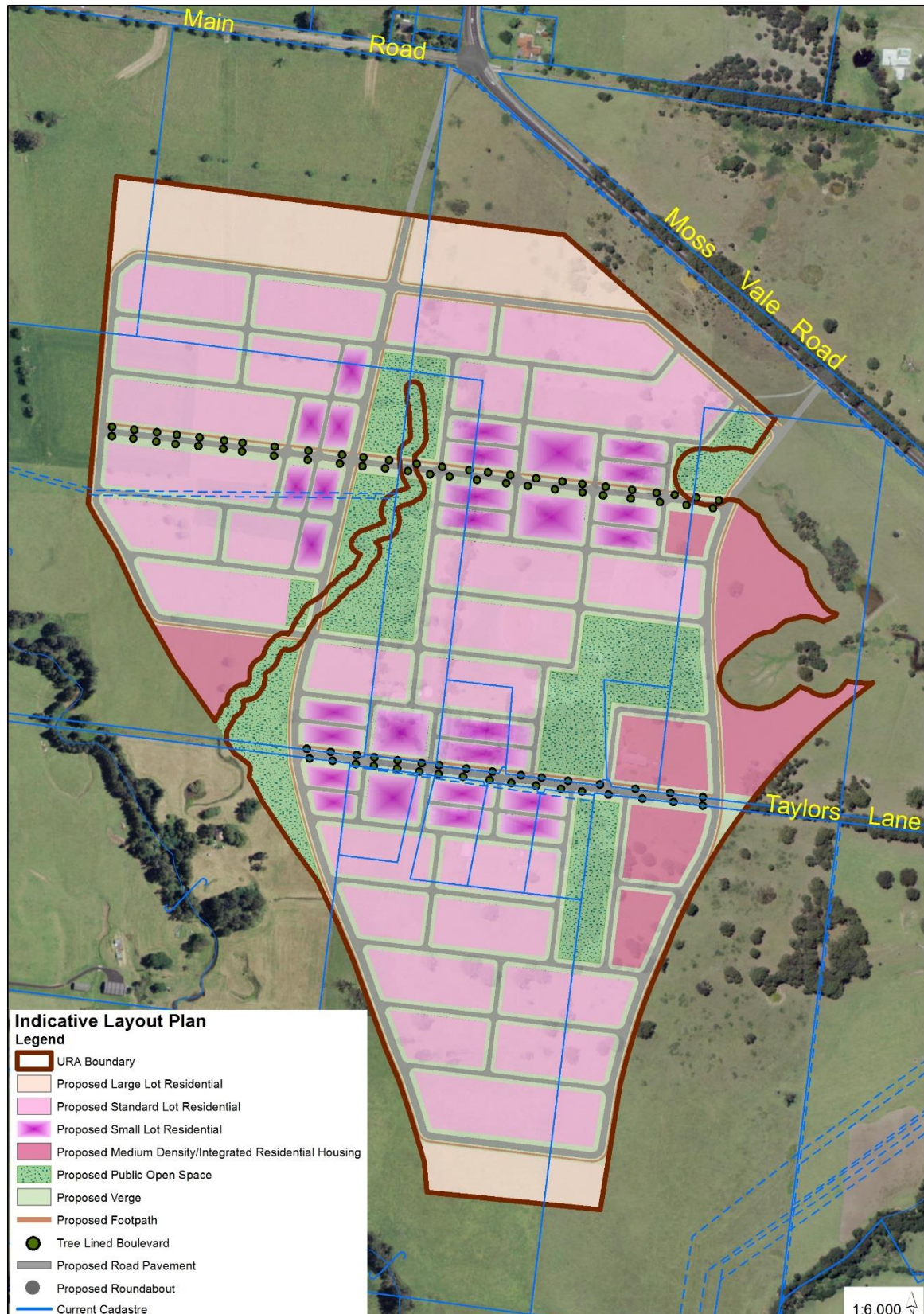
Figure 2: Aerial photograph (latest imagery from Council GIS)

Trees (particularly Eucalypt species) in existing urban areas are often removed out of safety concerns, due to damage to infrastructure, and leaf and fruit drop into pools and onto footpaths causing maintenance issues and safety concerns. There are opportunities to bring back an “indigenous tree canopy”. Sutherland Shire Council have developed a successful model to reintroduce native trees into their urban areas. This program recently won an LG NSW Excellence in the Environment Award.

https://lgnsw.org.au/files/imce-uploads/90/Sutherland_bringing_back_canopy.pdf

SF17.30

The trend to smaller lot sizes and larger houses means retaining trees or providing space for trees in new urban release areas into the future will be difficult (see attached concept indicative plan layout below).



SF17.30

Referring to the indicative layout above, there are opportunities to rehabilitate proposed E2 zoned areas of currently degraded drainage lines in paddocks but rehabilitation will have to take into account a potential bushfire risk, and the costs of rehabilitation and ongoing management. There are opportunities to use native species in street-scaping (see attachment 1).

Planning for Bushfire Protection (PBP) 2006 lists the attributes of plants more suitable for planting in areas of bushfire prone land. Plants that have leaves with a higher moisture (mesic), less bark that is available as fuel and lower levels of leaf drop all assist in reducing bushfire attack levels.

Whilst the environmental and social values of trees and vegetation are widely known, there is usually no economic value assigned to them. In order to give remnant native vegetation a greater chance of being retained or planted, determining the dollar value of urban trees would be of benefit when decision makers assess applications for tree removal and new planning proposals. There are tools (see links below) that can be used to obtain a dollar value for trees in urban areas.

<https://www.itreetools.org/>

<http://www.abc.net.au/radionational/programs/themoney/turning-a-new-leaf:-the-value-of-green-investment/8858984>

It is recommended that, as a first step, Council undertake an assessment to determine the value of our urban tree canopy of a sample location. This assessment should include defining what is the 'urban tree canopy' and how is it identified (e.g. is it location based, size of remnant/planted vegetation, trees within the streetscape and carparks or trees found in parks within CBD zones

Under the new NSW Biodiversity Conservation Act 2016, some vegetation is given an economic value. The NSW Biodiversity Offset Scheme (BOS) currently puts an economic value on native vegetation and the habitat value it provides for fauna. The BOS applies to some new developments in NSW that meet a number of thresholds and works by converting the remnant native vegetation to be lost to a development into a credit total (dollar value) to be retired before a development can commence.

<https://www.landmanagement.nsw.gov.au/biodiversity-offsets-scheme/>

Further information on beating the heat island effect with trees can be found in the following links, though not specifically about promoting urban ecology, demonstrate an opportunity to introduce "trees" into urban landscapes to the benefit of native fauna and humans.

<https://landscapeaustralia.com/tags/urban-heat-island/>

https://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=6&ved=0ahUKEwjM0eiP_M7XAhUCopQKHbyRDQ0QFghQMAU&url=https%3A%2F%2Fwww.penrithcity.nsw.gov.au%2FDocuments%2FWaste-and-Environment%2FCooling-the-City-Strategy%2F&usq=AOvVaw3ikSA0j-Z4xNe3EhOVinAm

Community Engagement

A model for bringing back our indigenous tree canopy provides an opportunity for Council to engage with the residents. For example, Council could ask for residents to nominate areas

for replanting and if suitable, give them a choice of species to be used to help foster pride in their neighbourhood.

Policy Implications

Through the internal working group there will be opportunities to identify and incorporate the practical retention of remnant vegetation generally and specifically in urban release areas via the DCP review process.

Risk Implications

Looking into the future and given that trees are disappearing from the urban landscape, the risk of not promoting the use of indigenous native vegetation will see them continue to decline in number and the community will lose the benefits trees in particular provide in an urban landscape.

Proposed plantings will need to take into consideration safety and bushfire issues as per the current practices and legislation.

Another consideration is the life span and subsequent replacement costs of trees that do not survive or function as planned.

Shoalhaven Development Control Plan 2014
Chapter G11: Subdivision of Land

Table 3: Residential Streets and Road Types

Street Type	Verge Width	Street Reserve Width Ave	Kerb Type	Street Longitudinal Grade Max	Pavement Treatment	Footpath Requirement	Parking Provision within Street Reserve	Entrance Kerb Return Radius
Access Street	4.0 min	16	Layback	16%	AC, paving block or stamped or patterned concrete	No	Carriageway	6
Local Street	4.5 min	18	Layback	16%	AC	1.2m	Carriageway	6
Laneway	1 min	7	Barrier or concrete V-drain	16%	AC or concrete	No	No	5
Collector Street	4.5 min	20	Barrier	16%	AC	1.2m	Carriageway	8
Local Distributor		22	Barrier	16%	AC	1.2m or 2m cyclepath	No Parking	8

Table 3 (Part 2): Large Residential Development

Alotment Size	Gutter	Drainage	Table 3 and Table 3 (Part 2) Notes:
2000 square metres	Layback kerb and gutter	Underground	a. Each verge must be of sufficient width to accommodate relevant services, plantings, table and possible future pavement widening to 5m. b. The minimum street reserve widths apply after satisfying the other criteria within this table and possible future pavement widening to 5m. c. An integrated design of street and building layout is necessary for speed control and to achieve the optimum result. Appropriate considerations are required for the collection of waste. d. A minimum kerb radius is desirable for pedestrian safety and control of vehicle speeds. A threshold treatment or driveway crossing may be used at the intersection entry. e. Grades greater than 12% require special design considerations for pedestrians, cyclists, waste collection vehicles and road layout eg. Grade on curves, grade for turning vehicles at the street turning head. f. Barrier kerb may be considered for drainage purposes without reducing the carriageway width. g. Standards will be increased for medium density residential development. h. Pathway reserve width 4 metres. i. Cycleway reserve width 6 metres.
4000 square metres	Grassed table drain conc. Edge strip Grade 10% plus layback kerb	Underground	

SF17.31 Draft Shoalhaven City Council Sustainable Futures Committee Strategy Outcomes Hierarchy

HPERM Ref: D17/387303

Submitted by: Lorraine Larri

Attachments: 1. Draft Outcomes Hierarchy - for Discussion [↓](#)

Recommendation

That

1. The Sustainable Futures Committee accept the Draft Outcomes Hierarchy as a way of describing its strategy and use it as a point of reference for discussions within Shoalhaven City Council and externally with the broader Shoalhaven Community.
2. The Sustainable Futures Committee continue to update the draft as a result of engagement with the community or significant policy changes by federal or state governments impacting on the future of sustainable business practices.
3. A budget be considered and allocated by council with sufficient resources to support strategies that link with the achievement of agreed short-term and intermediate outcomes. Funding should be considered on a business case with offsets from unsustainable activities of council factored into the decision.

Details

Sustainable Futures Committee 12 October 2017 resolved that the idea of a Program Logic and Outcomes Hierarchy would be a useful tool in providing a framework for the Committee. During the discussion, I agreed to provide a draft Outcomes Hierarchy for discussion at the 29 November meeting. See SF17.21 on Community Engagement in Environmental Issues

Purpose: Consolidating the Sustainable Futures Committee Strategy

The Draft SCC Sustainable Futures Committee Strategy Outcomes Hierarchy (OH) is presented as a first step of an over-arching framework towards a 'Sustainable Future for the Shoalhaven'.

The Outcomes Hierarchy brings together the range of activities that are already agreed to (e.g. City Power Partnerships) as well as ideas identified through current community networks (Berry Forum, Read Head Villages Association, Shoalhaven Transition, Sussex Inlet Strategic Planning¹). Additional elements could be incorporated such as targets, tasks, and risk analysis.

By doing this, we are attempting to provide an holistic Shoalhaven-wide framework that connects internal SCC strategy and action with broader community expectations and emerging grassroots actions.

¹ See <http://www.sussexdistrictsforum.com.au/wp-content/uploads/2017/05/Strategic-Action-Plan.pdf>

We hope that this can provide a clear starting point for conversation within Council to inform strategy and that it becomes useful as a reference point for Council Officers in current strategic and operational planning 2017/2018.

The OH approach is designed to help guide and prioritise SCC Council planning to achieve the desired changes.

Needs Assessment – Situational Analysis

A primary role of governments at all levels is to protect and secure the wellbeing of the community. Carbon emissions and the consequential climate impacts poses a clear and present threat to our community. Energy together with the multitude of products derived from fossil fuels are currently fundamental to our society and economy. We are faced with the immense challenge of transforming every aspect of the economy to alternate sources of energy and products. Reference to the proceedings of the recent UN Climate conference in Bonn illustrates the extent, difficulty and urgency of the task that confronts every nation and every community.² An article in the US BioScience Journal published on the 13th Nov 2017 and endorsed by over 15000 scientist underlines the urgency for action with the warning of the risk for a global environmental collapse, whilst identifying the urgent actions required to avert this potential.³

The NSW Government Climate Change Policy Framework(2016)⁴ aims to, ‘maximise the economic, social and environmental wellbeing of NSW in the context of a changing climate and current and emerging international and national policy settings and actions to address climate change’. The aspirational long-term goals are, to ‘Achieve net-zero emissions by 2050’ and ‘NSW is more resilient to a changing climate’. The state target and Framework provide a platform for Shoalhaven City Council to address its own policies and actions so as to prepare the community for the radical and transformed natural and economic environment. However, the implementation and commitment to these policy settings is not currently apparent. The apparent failures, at State, Federal and International level to initiate effective reductions in emissions has enhanced the need for SCC to address how it can address adaption and mitigation within its jurisdiction.

Adapting to climate change impacts is an important role for local government councils like the Shoalhaven. Climate change has the potential to damage council assets, cause serious disruptions to the delivery of council services, generate unbudgeted financial impacts and affect the health and wellbeing of the community, particularly those vulnerable to weather extremes. The elderly and low income households in higher risk local communities could be significantly impacted by extreme weather events.⁵ This highlights the important role that local councils need to play in climate change adaptation. Nevertheless, implementing change inevitably involves the introduction of some new risks for council and/or the community. Risks should be identified and appropriately managed through sound, transparent business planning and risk management processes that include expected outcomes, gross and net costs, timeframes, risk treatments and investment options. These should underpin initiatives arising from the Sustainable Futures Committee. Engaging and informing the community in relation to new initiatives and the management of opportunities and risks is a critical function of the Committee.

² See <http://www.bankofengland.co.uk/publications/Pages/speeches/2015/844.aspx>

³ See <https://doi.org/10.1093/biosci/bix125>

⁴ State of New South Wales and Office of Environment and Heritage 2016.

⁵ Australia has committed to reducing greenhouse gas emissions by 26-28 per cent below 2005 levels by 2030 Included in this policy is the national Renewable Energy Target (RET) designed to reduce the greenhouse gas emissions in the electricity sector. The target for large-scale renewable generation of 33,000 GWh in 2020 which will mean that about 23.5 per cent of Australia’s electricity generation in 2020 will be from renewable sources.

Commonwealth Government organisations have a statutory requirement to report on their environmental performance and how they accord with and advance the principles of ecologically sustainable development (ESD).⁶ Within NSW the Government Resource Efficiency Policy provides guidance for government operations to improve performance in the main areas of: energy, water and waste, and to reduce harmful air emissions. All general government sector agencies (NSW Treasury, 2015–16) are required to report annually on policy targets, actions and minimum standards by publishing financial year data and a statement of compliance.⁷ Local Government NSW noted that:

‘Councils have a pivotal role in environmental management, including regulation and education. Increasingly, councils are pursuing initiatives to reduce their environmental footprint such as stormwater improvements, waste education, and biodiversity protection initiatives. Councils are also well placed to lead by example, and inform and encourage their communities (households, businesses etc) to take up environmental improvement programs and initiatives’.⁸

The lessons learned from other NSW local government councils (and local councils around Australia) are that more sustainable practices not only achieve better environmental outcomes but also save money. For example,

- in Eurobodalla Shire, emission reduction actions and achievements to date have demonstrated that there is a strong business case for action. Completed actions have generated significant energy cost savings totalling over \$1 million per year. Council is on track to meet its commitment to reduce emissions by 25 per cent by 2020. A new corporate energy emissions reduction target of 80 per cent by 2030 has been established. An additional target will be to source 100 per cent of Council’s electricity from renewable energy by 2030. (Eurobodalla Shire Council, Emissions Reduction Plan, 2017-21);
- in the City of Parramatta the Resource Rescue and Reuse (The R3 program) was initiated as a means to reduce waste from the relocation of the City of Parramatta’s main administration building and library in late 2015. The program rescued redundant resources such as stationery and furniture, reused them internally where possible and offered remaining items to local schools and community organisations to provide social and environmental benefits. As a result, Council was able to divert approximately 70 ute loads of material from landfill, while at the same time providing much needed resources to 52 schools, charities and community organisations to help them in delivering valuable services to local communities.⁹
- the Sunshine Coast Solar Farm is now live and feeding electricity into the power grid, making Sunshine Coast Council the first local government in Australia to offset 100 per cent of its electricity consumption with energy from a renewable source. The \$50.4 million, 15MW solar farm, constructed at Vadora west of Coolumberrah over the past 12 months with 57,960 panels, will feed into the Energex network and is estimated to save \$22 million over 30 years after all costs are paid.¹⁰

On behalf of Peter McVay, Bob Hayward, Oisin Sweeney, David Brawn, Lorraine J Larri, Community Representatives Shoalhaven City Council Sustainable Futures Committee.

⁶ This is a statutory requirement for federal bodies under Section 516A of the *Environment Protection and Biodiversity Conservation Act 1999*.

⁷ <http://www.environment.nsw.gov.au/publications/government/government-resource-efficiency-policy-whole-government-progress-2014-15-160708.htm>

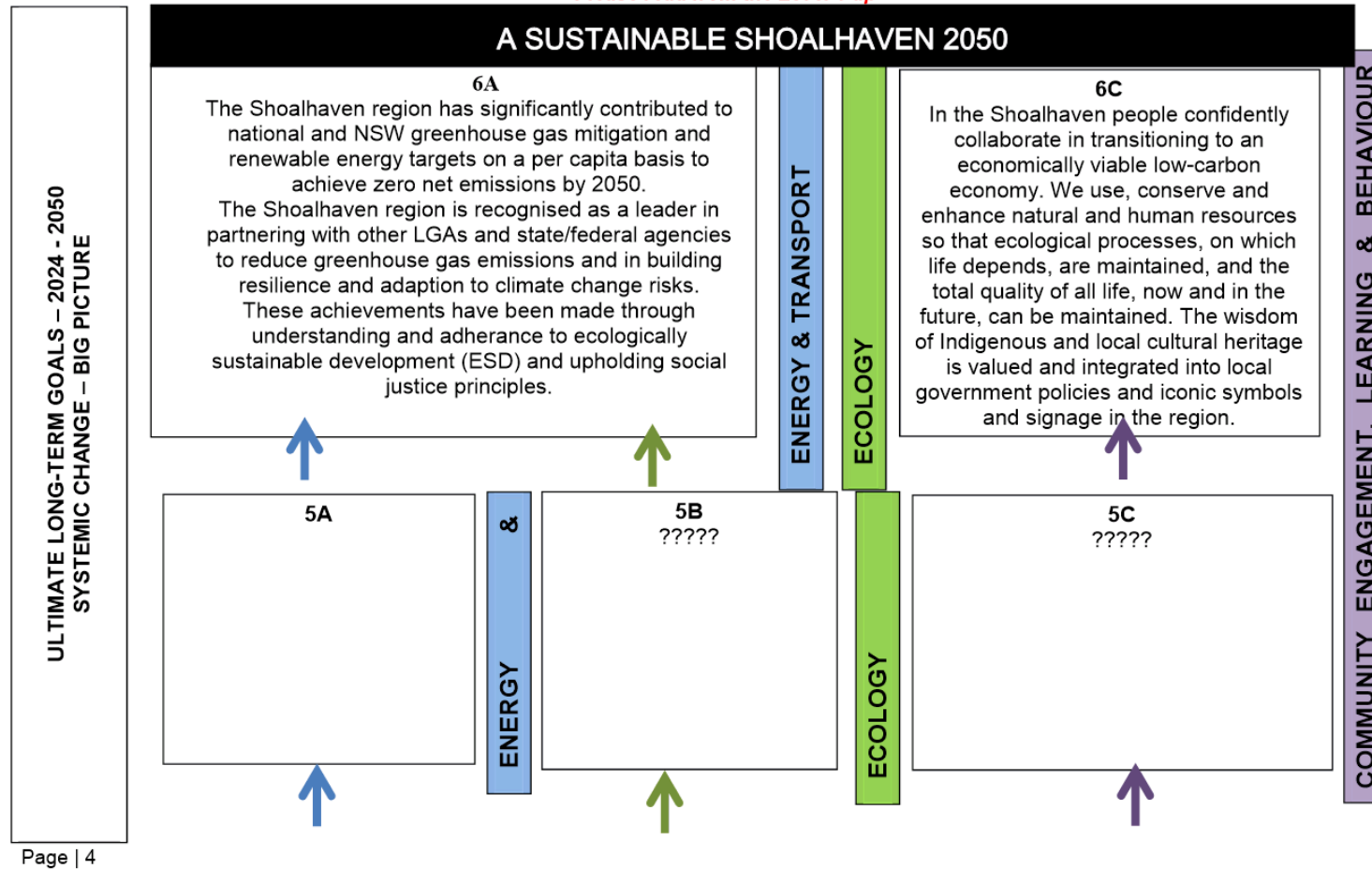
⁸ *Sustainability Snippets* <https://www.lgnsw.org.au/policy/environment>

⁹ https://www.lgnsw.org.au/files/imce-uploads/122/Sustainability_Snippets_vol35.pdf

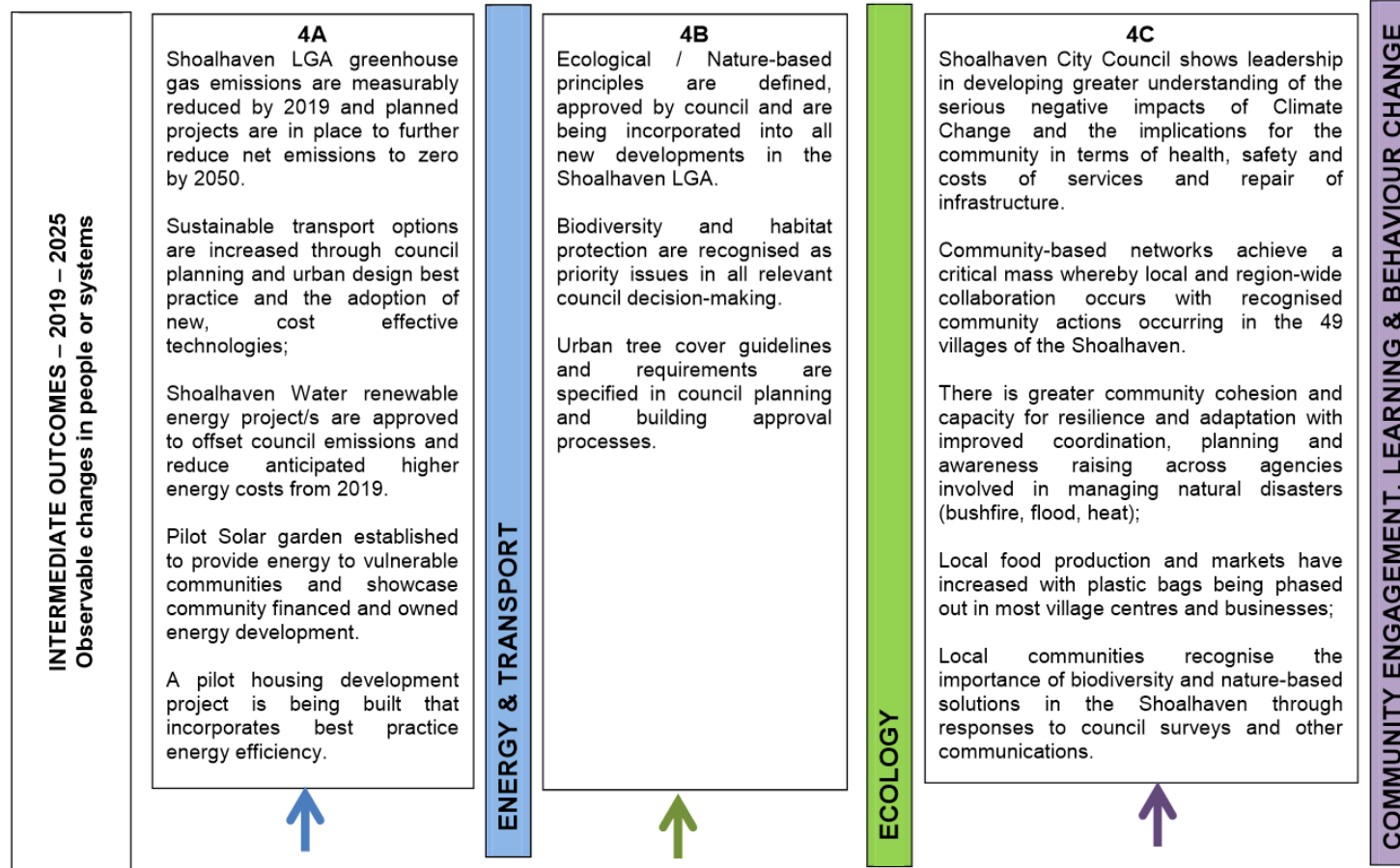
¹⁰ https://www.lgnsw.org.au/files/imce-uploads/122/Sustainability_Snippets_vol37.pdf

Draft For Discussion

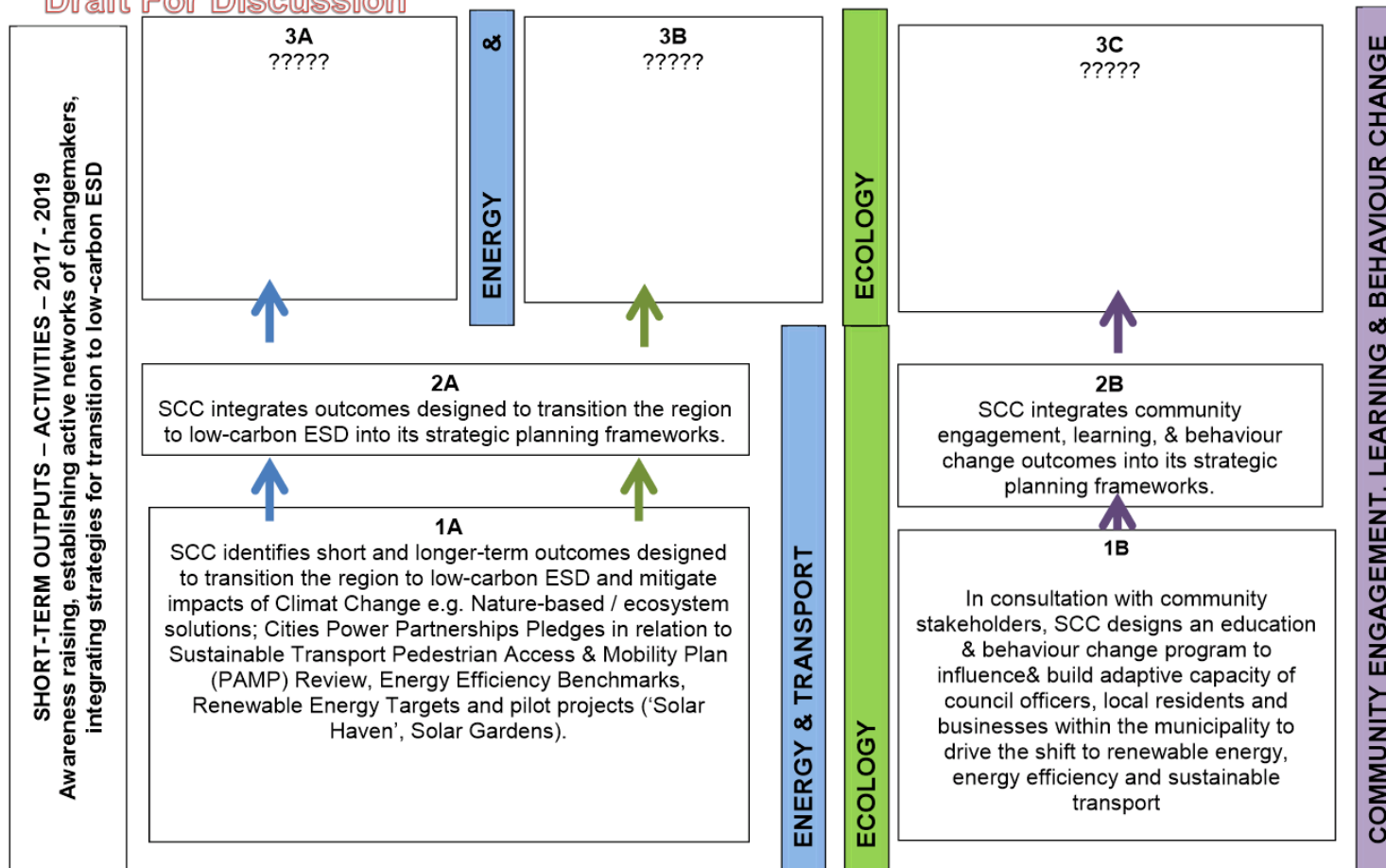
Draft Outcomes Hierarchy - A High Level Framework For Understanding the SCC Sustainable Futures Committee Strategy *Please read from the Level 1 up*



Draft For Discussion



Draft For Discussion



SF17.32 Proposed Street Tree Policy Amendments

HPERM Ref: D17/388411

Submitted by: David Brawn

Recommendation (Item to be determined under delegated authority)

That the Sustainability Futures Committee approves the proposed amendments to the Tree Management Policy – Public Land (POL14/58) and Council be provided a report for consideration, and adoption of the proposed amendments.

Details

Purpose/Summary

The purpose of this paper is to explain the benefits of increasing the urban tree canopy in the Shoalhaven City Council (SCC) region and to recommend immediate amendments to the relevant street tree policy document (Tree Management Policy – Public Land) and Council's property development policy to ensure that there is a requirement for developers to plant suitable street trees on public land adjacent to any new developments. There will be no cost to Council from making this policy change and minimal cost to the developer.

Further analysis will be conducted to assess the economic, environmental, health and societal benefits of making a further policy change to establish an extended urban tree canopy throughout the SCC region, adjacent to established properties.

Existing SCC Tree Management Policy – March 2015

Shoalhaven City Council's (SCC) current policy for the management of street trees is stated in POL 14/58 "Tree Management Policy – Public Land" which was adopted by Council on 6 March 2015. The purpose of this policy was to manage the removal of trees and to only plant new trees to replace removed trees. The following extracts from the policy document confirm this position.

"The purposes of the Policy therefore are to:

- Provide a consistent framework to respond to requests for tree removal/ management by members of the public
- Provide an environmental approvals framework
- Provide a stream-lined environmental approvals procedure in specified circumstances (i.e. unlikely to have an environmental impact)"

"SCC recognises the value of trees for the provision of visual amenity, shade, fauna habitat, soil stability, erosion protection etc. and places a high importance on the protection and retention of trees. SCC also recognises the need to remove or prune trees where circumstances warrant such actions e.g. protection of life and property"

"SCC is committed to the ongoing amenity of the Shoalhaven and will implement or condition the installation of new trees wherever trees are removed from land that SCC manages"

The existing policy is therefore silent on installing new trees in new locations, including new developments and existing properties. Therefore, over time, the proportion of the SCC urban environment protected by a tree canopy will progressively decline as development progresses. Existing properties where street trees were not planted originally also do not benefit from the policy in terms of an extended tree canopy.

SF17.32

Benefits of an expanded urban tree canopy

The benefits of a healthy urban tree canopy are well known and extensively documented and are already recognised in the Council's Tree Management Policy document.

The benefits include:

- Enhancing the sense of place and enjoyment for the local community
- Acting as a carbon sink to absorb atmospheric CO₂ emissions
- Countering the "heat island" effect in built up areas in towns and cities by shading hard surfaces to reduce surrounding temperatures
- Providing areas of shade and lower temperatures in residential areas for the community's health and well-being – especially for older or sick people and children
- Reducing storm water run-off by intercepting rainfall with their leaves
- Filtering water run-off through their roots
- Removing gaseous pollutants from the air through absorption
- Capturing particulate air pollution through the canopy
- Protecting pavements and roadways from high temperatures and resurfacing needs
- Providing habitat for urban wildlife
- Improving real estate values for property owners

Proposal

That the Council's "Tree Management Policy – Public Land" (POL 14/58) and the relevant development policy should be amended as follows:

- Require street trees to be planted as part of the development of new and existing properties, and be maintained for a 12 month period after planting. This will be funded by the developer
- The new street trees will be approved by Council and conform to Council tree planting guidelines
- A street tree plan be developed and managed by Council for new subdivisions

The normal Council approval procedures will be followed to adopt and implement the proposed changes to policy after approval by the Sustainable Futures Committee.

Implementation costs

There will be no costs to Council of implementing the proposed policy amendment and the cost to individual developers will be negligible compared to overall development costs.

SF17.33 Climate Change - Impacts on Human Health

HPERM Ref: D17/388518

Submitted by: Oisin Sweeney

Attachments: 1. Doctors for the Environment Australia Fact Sheet [↓](#)

Recommendation

That Shoalhaven City Council

1. Accepts as the basis for urgent action on climate change the Doctors for the Environment Australia fact sheet detailing the diverse human health and wellbeing impacts from climate change
2. Notes that action on climate change is necessary to address equity concerns that climate change will disproportionately affect the most vulnerable sectors of the community including the old, young and Aboriginal people and
3. Undertakes to communicate the health impacts of climate change to the community as a matter of urgency

Details

The Doctors for the Environment Australia fact sheet is attached.

SF17.33

CLIMATE CHANGE & HEALTH IN AUSTRALIA

MINI FACT SHEET



Doctors for the Environment Australia has developed this fact sheet to outline the effects of climate change on human health particularly in Australia, and how health can benefit from efforts to lessen and prevent climate change. The recent Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC) has once more highlighted the urgent need for action to limit global warming.

 **Doctors for the Environment Australia**
Healthy planet, healthy people
dea.org.au

BACKGROUND

Increasing greenhouse gas concentrations in the Earth's atmosphere are contributing to climate change.

Greenhouse gases:

- Include carbon dioxide, methane, nitrous oxide and halocarbons
- Are mainly produced by burning fossil fuels for electricity and transport; mining; deforestation and agriculture
- Trap heat in the lower atmosphere, producing increases in air and sea temperatures: this leads to changes in rainfall patterns (disrupting normal weather patterns), worsening extreme events (heatwaves, bushfires, floods), and sea level rise. Carbon dioxide also causes ocean acidification.

Climate change affects our health via:

- Direct effects – increased risk from heatwaves, floods, bushfires and cyclones
- Indirect effects – increasing air pollution, changes to infectious diseases, impacts on food and water, and impacts on mental health. Addressing climate change also presents an opportunity to improve health, both locally and globally.

EXTREME HEAT

Average temperatures have increased across Australia in the past 50 years, and heatwaves have become hotter, longer and more frequent.

Further warming is expected throughout the 21st century due to climate change, with even longer, hotter heatwaves expected.

The health effects of heatwaves include:

- Direct heat-related illness such as dehydration and heat stress
- Worsening of pre-existing chronic diseases such as heart and kidney disease
- Increased rates of premature death in older age groups
- Increased pressure on healthcare and emergency services.

Heatwaves have caused more deaths in Australia over the past 100 years than any other natural disaster: they are estimated to cause more than 1100 deaths in Australia each year.

Power outages are common during heatwaves:

- Air conditioning and refrigeration may fail, with risk of food spoilage and damage to essential medicines and vaccines
- Transport services can be impacted affecting supply chains, businesses and communities.

BUSHFIRES

Extreme fire weather danger has increased in Australia since the 1970s. The risk of severe bushfires will continue to increase due to climate change, the result of increasing temperatures, more frequent, intense and prolonged heatwaves, and declining rainfall.

The health effects of bushfires include death and illness from:

- Burns
- Injuries
- Dehydration
- Heat exhaustion
- Smoke inhalation
- Damage to health care infrastructure (hospitals, medical centres)
- Trauma, mental health impacts.

FLOODS & STORM SURGES

Flood risk is expected to increase in many parts of Australia with climate change, due to increasing frequency and intensity of extreme rainfall events and sea level rise.

The health effects of floods include death and illness due to:

- Drowning
- Injuries
- Damage to sewerage and drinking water supply systems
- Increased risk of mosquito-borne diseases
- Asthma and allergic conditions triggered by mould growth in damp conditions
- Trauma, mental health impacts.

CYCLONES

Cyclones are likely to become more intense in some regions due to climate change. The health effects of cyclones include death and illness due to:

- Injuries
- Loss of shelter and essential services
- Trauma, mental health impacts.

FOOD AND NUTRITION

Declining food availability and increasing prices are expected due to climate change.

Causes include declining average rainfall across many parts of the country, reduced river flows, and increasing drought frequency and severity. Changing patterns of pests and diseases may also threaten crops and stock. Healthy food may become less accessible, particularly for low income earners and those living in regional and remote areas.

INFECTIOUS DISEASES

Climate change may increase the risk of mosquito-borne diseases (such as dengue fever and Ross River virus) in some parts of Australia, due to increasing temperatures and changing rainfall patterns.

Increasing temperatures are predicted to increase rates of food-borne infections such as bacterial gastroenteritis, due to increased growth of pathogens including *Salmonella*, *Campylobacter* and *E. coli*.

AIR POLLUTION

Besides being a significant source of greenhouse gas emissions, the burning of coal for electricity releases dangerous air pollutants:

- These include particulate matter, sulphur dioxide, nitrogen oxides, mercury, cadmium, and arsenic.
- Air pollution from coal industries contributes to lung cancer, other lung diseases (including asthma), heart disease and stroke.
- The air pollution cost of coal's impacts on health in Australia is estimated at approximately \$2.6 billion per year.
- Coal mine fires (such as the Hazelwood mine fire in Victoria in 2014) also produce toxic gases and particulate matter, threatening the health of local communities.

Across Australia, air pollution contributes to an estimated 3000 deaths per year.

Under some climate change models, diseases due to ozone air pollution (such as worsening asthma) are expected to increase as temperatures rise, particularly within and around urban areas.

ALLERGIES

Approximately 1 in 5 Australians has an allergic disease, including asthma, hay-fever and eczema, and 1 in 10 has asthma.

Asthma and other allergic diseases have a major impact on physical health and quality of life.

Warmer temperatures and

increasing levels of carbon dioxide in the atmosphere can increase the production, potency and release of pollens, which can trigger asthma. Asthma is also aggravated by air pollutants such as nitrogen oxides, sulphur dioxide, ozone and particulate matter, which are produced during the burning of fossil fuels.

MENTAL HEALTH

Climate change is likely to adversely affect the mental health of many people in Australia.

Extreme events such as cyclones, floods, droughts and bushfires cause psychological distress due to fear, trauma, loss of loved ones, destruction of property, financial stress and disruption of communities.

Other effects of extreme events include displacement, disrupted goods and service availability, employment uncertainty, and interruption of education and other routine activities. Depression, anxiety and post-traumatic stress disorders may occur as a result, with major long term effects on personal, family and community function.

VULNERABLE GROUPS

People who tend to be more vulnerable to the effects of climate change on health, include:

- Children
- Elderly people
- People with pre-existing medical conditions
- Aboriginal and Torres Strait Islander people
- People living in rural and remote areas
- Pregnant women and unborn babies.

WHAT CAN BE DONE?

Further climate change must be minimised to reduce risks to human health and avoid potentially unmanageable consequences.

The burning of fossil fuels must be phased out:

- 80% of the world's known fossil fuel reserves must be left in the ground to be able to limit global warming to 2°C
- Instead of relying on coal, oil and gas, we need to continue urgently transitioning to renewable energy sources – this is economically and technologically feasible, the barrier is now primarily a political one
- Enhanced efficiency and reduced consumption are already reducing Australia's energy use and will continue to be important.

Strong political commitment is required to halt new coal mine developments, ensure the decommissioning of existing coal mines and support the transition to renewable energy.

Australia needs stronger air quality regulations, to better limit emissions of harmful particulate matter, gases, and toxins as well as greenhouse gases.

Forests and other ecosystems must be protected to keep carbon in soils and help minimise greenhouse gas levels. Individuals, communities and

governments must work to increase the use of active transport (cycling, walking and public transport) to reduce vehicular air pollution and greenhouse gas emissions, and avoid unnecessary air travel.

Reducing our consumption of processed foods, red meat and dairy products will help to reduce greenhouse gas emissions produced by the agricultural sector, as well as reduce other environmental impacts.

HEALTH AND CLIMATE.WIN:WINS

There are numerous 'co-benefits' for health to be gained by action to limit climate change:

- Reduced rates of lung cancer, other lung diseases, heart disease and stroke due to improved air quality
- Reduced rates of obesity, diabetes, heart disease, some cancers, and many musculo-skeletal disorders due to increased physical activity through the use of active transport
- Reduced rates of heart disease and some cancers (particularly bowel cancer) due to reduced red meat consumption
- Improved air and water quality, as well as the benefits of protected ecosystems such as forests
- Improved mental health and general wellbeing as a result of preserved urban green spaces and connections with the environment
- Better planned, cooler, greener, more people-centred cities.

MORE INFORMATION

For more information about climate change and health, visit:

- Doctors for the Environment Australia <http://dea.org.au/>
- Doctors for the Environment Australia Position Statement Climate Change and Health http://dea.org.au/images/general/DEA_Position_Statement_Climate_Change_and_Health_05-13.pdf
- Doctors for the Environment Australia Climate Change and Health Policy 2013 http://dea.org.au/images/general/DEA_Climate_Change_and_Health_Policy_05-13.pdf
- Doctors for the Environment Australia No Time for Games: Children's Health and Climate Change http://dea.org.au/images/general/Children_and_climate_change_report%3A_No_Time_for_Games_web.pdf
- Climate Council <https://www.climatecouncil.org.au/>
- Intergovernmental Panel on Climate Change <http://www.ipcc.ch/>
- 2015 Lancet Commission on Health and Climate Change [http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(15\)60854-6.pdf](http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(15)60854-6.pdf)