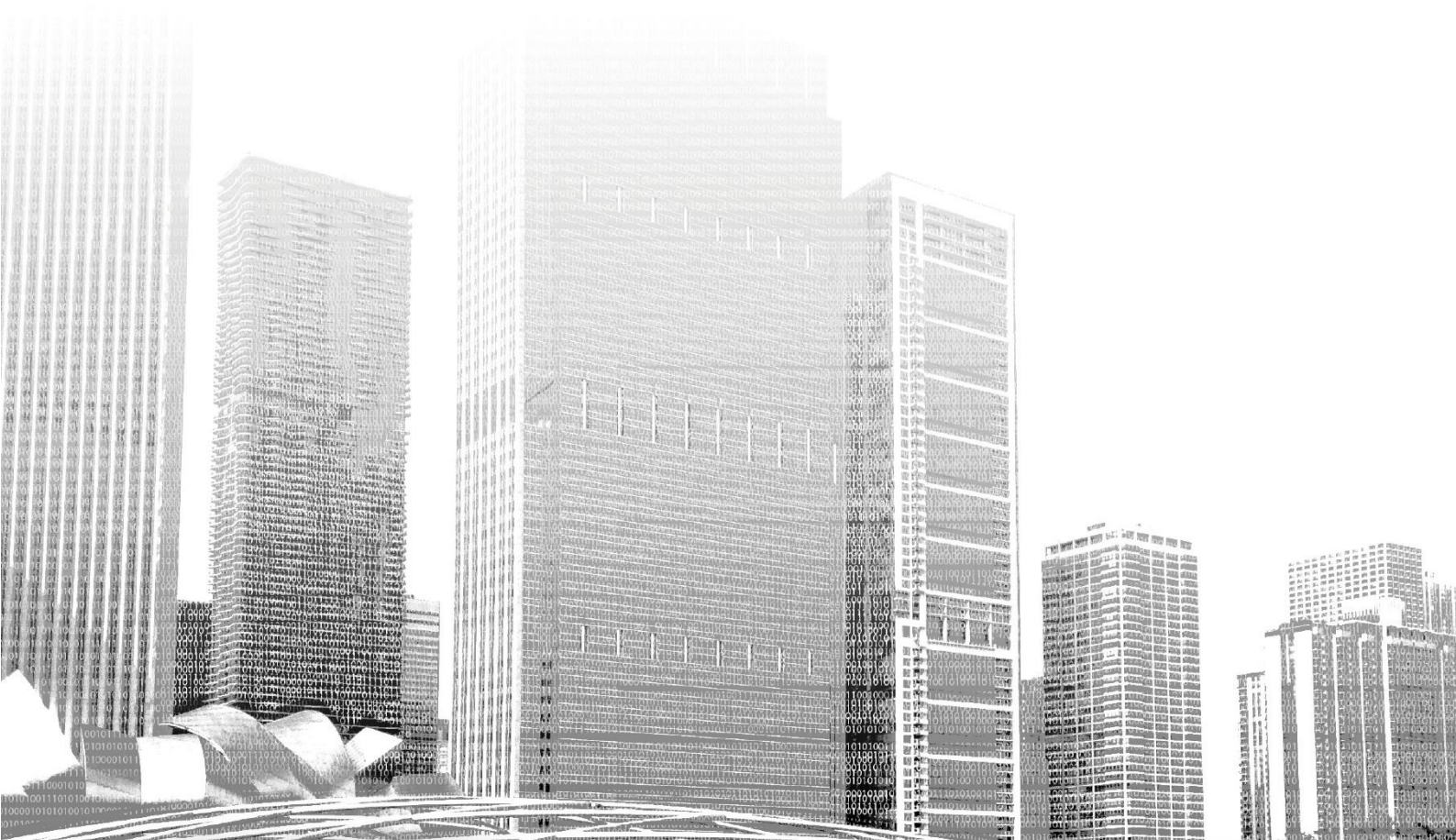


# CLIMATE CHANGE ADAPTATION GOVERNANCE ASSESSMENT

## *Climate Change Adaptation Governance Assessment Report for the City of Unley*



**Prepared for:**

The City of Unley  
181 Unley Road, Unley, SA 5061

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**Caveat:**

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## Executive Summary

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The City of Unley engaged Climate Planning and Edge Environment (Edge) to undertake an assessment of its climate change adaptation governance. This assessment indicates how well Council is incorporating climate change adaptation governance into their corporate processes and frameworks. The findings of this study include information collected from an online staff survey, results of the assessment of corporate documents, and findings from face-to-face meetings with representatives of the City of Unley. The report also provides a range of recommendations to assist the City of Unley in improving their climate change adaptation governance.

## Methodology

The Project Team used Climate Planning's Informed.City™ platform to implement the project. The governance assessment for the City of Unley was undertaken in two stages:

- **Quantitative Assessment** - typology-based review of local government inclusion and influence of climate change in publicly available corporate documents. Also included a survey of staff members' understanding of climate change impacts, their department's capacity to adapt and their perceived barriers and enablers to improved consideration of climate change in Council decision-making. The quantitative assessment was completed on the 18<sup>th</sup> of May 2021.
- **Qualitative Assessment** - qualitative analysis of local government consideration of climate change adaptation governance based on face-to-face meetings with key council staff members. These meetings were used to glean information about barriers and enablers to mainstreaming consideration of climate change. The qualitative assessment was conducted on the 2<sup>nd</sup> of March 2021.

## Results and Specific Recommendations

The findings of this report bring together information obtained from the above two stages, with a summary of the key insights from the governance assessment presented below.

### *Quantitative assessment*

The Project Team conducted a governance assessment of the City of Unley to explore how climate change was considered in their corporate documents. The City of Unley was assessed against ten quantitative governance indicators, with Figure 1 displaying Council's performance.

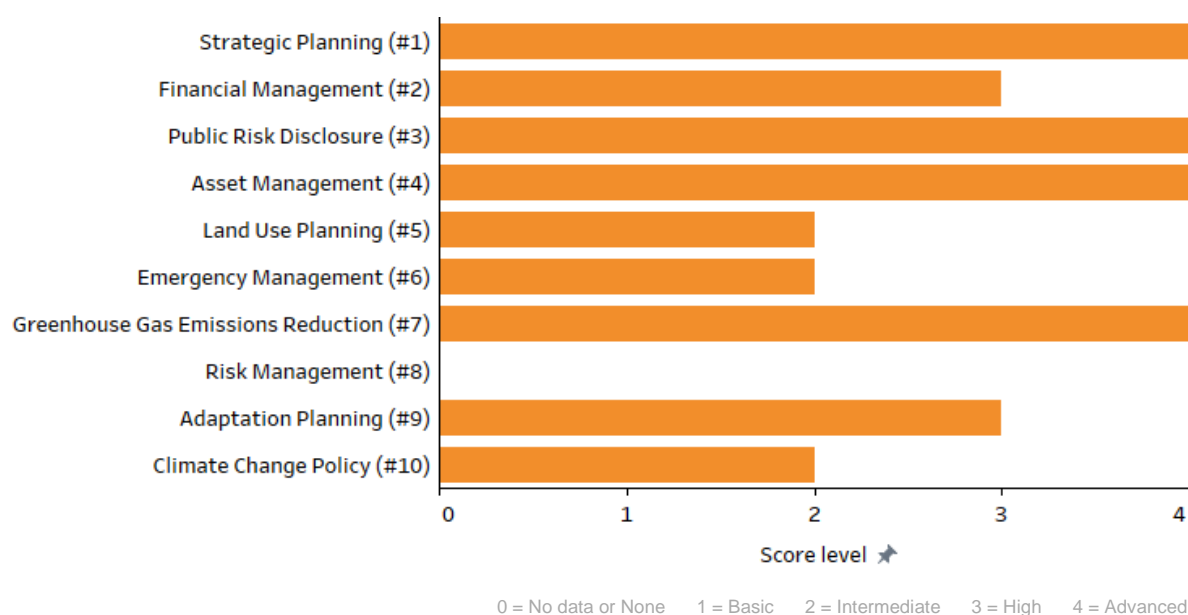


Figure 1: The City of Unley's quantitative scores for climate change adaptation governance

Table 1 provides the recommended 'first steps' that Council should consider implementing for each indicator to improve their climate change adaptation governance scores.

Table 1: Recommended 'first steps' which the City of Unley should implement to improve their governance scores

Indicator Type Tag	Level	Recommendation
<b>Strategic Planning (#1)</b>	Advanced	Council has received an 'Advanced' score for this indicator. Achieving this score sees Council in the top fraction of Australian local governments for this indicator and places it in a position to share the journey with other local governments seeking to improve their consideration of climate change. To ensure that this indicator maintains this level Council will need to monitor any new IPCC reports, government regulations and emerging standards that may affect Council's adaptation actions. Furthermore, ensure that Council maintains sufficient staff capacity and resources to maintain their score for this indicator.
<b>Financial Management (#2)</b>	High	To increase the score for this indicator (to 'Advanced') requires some specific focus on the potential supporting policies (e.g. financial management plan, asset management, climate change policy). Council should make statements in its financial planning documents specifically stating climate change as a financial risk and outlining the actions and allocation of resources that will help to mitigate the previously stated climate risk. Furthermore, financial management plans should include statements about divestment from fossil fuels, energy transition, and consideration of a price on carbon in adaptation decisions. Council should also consider issues such as insurance, effects on rateable value, asset OPEX and CAPEX issues and other direct and indirect issues associated with climate change. Financial management should also state how financial performance while responding to climate change will be implemented. However, the effect of financial management issues on other council functions (e.g. assets) are important to consider. For example, understanding whether staff capacity, capability and training needs are a barrier to understanding climate change and its financial implications in your Council.

Indicator Type Tag	Level	Recommendation
<b>Public Risk Disclosure (#3)</b>	Advanced	Council has received an 'Advanced' score for this indicator. Achieving this score sees the organisation in the top fraction of Australian local governments for this indicator and enables it to share its journey with other local governments seeking to improve their consideration of climate change. To ensure that this indicator is maintained at this level it will be important to monitor any new IPCC reports, government regulations and emerging standards that may affect adaptation actions. Furthermore, ensure that Council maintains sufficient staff capacity and resources to maintain their score for this indicator.
<b>Asset Management (#4)</b>	Advanced	Council has received an 'Advanced' score for this indicator. Achieving this score sees you in the top fraction of Australian local governments for this indicator and you will be in a position to share your journey with other local governments seeking to improve their consideration of climate change. To ensure that this indicator maintains at this level Council will need to monitor any new IPCC reports, government regulations and emerging standards that may affect asset management adaptation actions. Furthermore, ensure that Council maintains sufficient staff capacity and resources to maintain their score for this indicator.
<b>Land Use Planning (#5)</b>	Intermediate	The assessment has found that Council has no further control over land use planning related to climate change than what is in the State-wide Planning and Design Code. Council should communicate with Planning and Land Use Services, through the state Attorney General's Office about ways in which local governments can better respond to climate change in their local planning decisions. Council should also collaborate with other local governments to engage with the State Government to raise the awareness of relevant planning limitations and advocate for improved considerations of climate change in the Planning and Design Code. Relevant issues that should be incorporated into the Code include consideration of climate-related transition and physical issues associated with: the natural environment, built form, land use restrictions, renewable energy, transport planning, tradeable development rights, local climate change and sea level rise modelling etc.
<b>Emergency Management (#6)</b>	Intermediate	To increase the score for this indicator (to 'High') the Council emergency management plan (or similar instrument) must be amended to ensure that climate change is referred to in the introduction and at least two elements of climate change are considered. An example of phrases in an emergency management plan that will support a 'High' score includes: "Climate change is likely to exacerbate many of the known disaster risks and affect those already especially vulnerable to natural hazards". Issues that will be relevant are the increased heatwave risk (i.e. present information on the current number of heatwave days for selected locations and then how that may change in 2030 / 2050 etc.). Other risks associated with climate change include more frequent and extreme floods, more extreme weather events (storms, hail) and increased disruption to emergency egress routes. It is important to link emergency management planning with land use planning and align the considerations of climate change between these two areas. The most cost-effective approach to this would be to glean information from other Councils in South Australia or Australia who have participated in an Informed.City™ climate change adaptation governance assessment and have reasonable scores in the indicators that you need help in improving.
<b>Greenhouse Gas Emissions Reduction (#7)</b>	Advanced	Council has received an 'Advanced' score for this indicator. Achieving this score sees Council in the top fraction of Australian local governments for this indicator and places it in a position to share its journey with other local governments seeking to improve their consideration of climate change. To ensure that this indicator maintains this level it will be important to monitor any new national and international targets (e.g. bringing forward carbon neutrality date). It will also be important to ensure that Council maintains sufficient staff capacity and resources to maintain their score for this indicator.

Indicator Type Tag	Level	Recommendation
<b>Risk Management (#8)</b>	None	To increase the score for this indicator (to 'Basic') requires minimal time and resourcing. Review the risk management policy as soon as possible and include climate change to achieve a 'Basic' score for this indicator. Examples of wording for the policy include: "Council recognises that climate change may exacerbate some risks and/or present new risks". Treatment options include undertaking scoping risk studies and improving Council's consideration of climate change in its core governance documents.
<b>Adaptation Planning (#9)</b>	High	This recommendation focusses on the need for a Council climate change adaptation strategy (or similar) as a local instrument (not just regional). A detailed local plan ensures ownership and can better align with internal governance and reporting. Ensure that a comprehensive Council adaptation strategy and/or action plan exists (for Council and the community). As a minimum include all of the following: key performance indicators, identified roles and responsibilities, the timing for delivery, linked to governance (mainstreaming), includes information from the community, and other key stakeholders. There will be an initial outlay of resources required to achieve this level of adaptation planning (e.g. undertake climate change risk assessments (including a physical risk assessment and transition risk assessment), quantify the number of Council assets exposed to risk, cost and prioritise adaptation actions, and assign roles and responsibilities).
<b>Climate Change Policy (#10)</b>	Intermediate	A climate change policy will help ensure Council's method for adapting to climate change is consistent and robust. If Council is to implement a climate change policy, then it should include all of the following: specific IPCC climate change scenarios it is aligning to (preferably RCP 8.5 as a minimum), identified roles and responsibilities, timing for delivery, triggers for review (e.g. within 6 months of each IPCC assessment report), activities for improving governance scores, (mainstreaming), and commitment to community and/or stakeholder engagement. The most cost-effective approach to this would be to glean information from other councils in South Australia or Australia who have participated in an Informed.City™ climate change adaptation governance assessment and have an advanced climate change policy.

### *Qualitative assessment*

During the face-to-face meetings, the Project Team asked representatives of the City of Unley a series of questions about climate change. These questions were used in a qualitative analysis to understand the issues, barriers and enablers for considering climate change in decision making for the City of Unley. The results for the qualitative assessment are categorised into seven indicators. From these results, the Project Team have devised the following specific recommendations to assist the City of Unley in improving their climate change adaptation governance.

#### *Indicator 11: Climate Risk Assessments*

- 11.1 Undertake a detailed climate change risk assessment that explores and quantifies climate-related physical and transition risk.
- 11.2 Identify the process by which climate risk assessment results can feed into the Strategic Risk Register.
- 11.3 Agree on a process by which high priority projects, especially new large-scale infrastructure projects or developments, are subject to climate risk assessments prior to approval.



***Indicator 12: Climate Legal Risk***

- 12.1 Identify priority areas for climate legal risk advice, especially about the relative role of Council compared to residents, businesses, and the State Government.
- 12.2 Ensure that legal risks associated with climate change are included in the risk register, until well managed.

***Indicator 13: Staff Capacity and Resource Allocation***

- 13.1 Review opportunities to embed capacity building into existing staff training, such as new employee inductions.
- 13.2 Develop a capacity-building program to continue to raise staff awareness about climate change impacts and how they can be managed within different Council functions. This should be an ongoing program similar to how workplace health and safety training is conducted across the organisation.

***Indicator 14: Community/ Stakeholder Engagement***

- 14.1 Develop a Climate Change Stakeholder Engagement Strategy, which identifies engagement objectives, target audiences, engagement channels, a schedule of activities, and KPIs. This should include issue-specific engagement (e.g. heatwave risks) as well as general awareness-raising.

***Indicator 15: Institutional/ Intergovernmental Relationships***

- 15.1 Seek to clarify the role of Council as compared with the State Government about managing climate risk.
- 15.2 Work with banks to better understand how they are considering the effects of climate change. It would be in the City's interest to identify how they identify risk and what they see determines resilience at a City level. Where possible the City of Unley should identify opportunities to incorporate risk definitions used by the banking sector into its risk management approach.

***Indicator 16: Climate Change Information***

- 16.1 Develop a register of information requirements needed to inform key decisions that will be impacted by climate change to identify where information gaps exist. This should be done as part of implementing a monitoring and evaluation plan and directed by a Climate Change Policy.

***Indicator 17: Information Systems***

- 17.1 Utilise Council's Smart City initiative to collate and analyse risk information and explore the potential role of GigCity as a platform for improved information systems.
- 17.2 Sponsor GovHacks and local hackathons with the focus being solely on climate change adaptation.
- 17.3 Provide an annual publication of data collected in Council's accounting system on post extreme event/ disaster clean-up costs/ resource use. This will assist with communicating impacts to the community over time.

## Conclusion

The City of Unley has a sophisticated understanding of climate change. As of May 2021, the City of Unley recorded a higher assessment score than 341 Australian councils to have been assessed through the Informed.City™ climate change governance assessment. Council achieved a top score of 'Advanced' in Strategic Planning, Public Risk Disclosure, Asset Management and Greenhouse Gas Emissions Reduction.

Council also scored 'High' in Financial Management and Adaptation Planning and achieved an 'Intermediate' score for three other indicators (Land Use Planning, Emergency Management and Climate Change Policy). It is worth highlighting that only one indicator (Risk Management) did not achieve a score.

The key climate-related risks identified during the interviews were predominantly physical. These include risks associated with heatwaves, water availability and stormwater flood risk. Council staff had a strong recognition that, if not managed effectively, climate change has the potential to pose a significant financial strain on the organisation.

There is no doubt that the City of Unley has a highly skilled staff base and are well-placed to maintain and improve on its national leadership regarding climate change adaptation governance. There is also a unique opportunity to use the Smart City initiative to help analyse, monitor, and report on climate-related risks.



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## List of Abbreviations

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AR&R	Australian Rainfall and Runoff
CAPEX	Capital expenditure
CSIRO	Commonwealth Scientific and Industrial Research Organisation
FTE	full-time equivalent
ICT	information communication technology
IoT	Internet of Things
IPCC	Intergovernmental Panel on Climate Change
IPWEA	Institute of Public Works Engineering Australasia
KPI	Key performance indicator
NCCARF	National Climate Change Adaptation Research Facility
OPEX	Operational expenditure
QLD	Queensland
SEMP	State Emergency Management Plan
SMP	strategic management plans
TAS	Tasmania
TCFD	Task Force on Climate-related Financial Disclosures
UNFCCC	United Nations Framework Convention on Climate Change
WSUD	water-sensitive urban design
ZEMC	Zone Emergency Management Committees
ZEMP	Zone Emergency Management Plan

# 1 Introduction

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## 1.1 Responding to Climate Change

Climate change is a pressing issue for local government that is already manifesting as a legal, social, economic and environmental risk. Local governments make decisions that span generations (e.g. roll-out of infrastructure, planning for future settlements) and as such need to be actively assessing and responding to the direct and indirect risks that climate change presents. However, since climate change presents a plethora of direct and indirect challenges that are likely to change over time, it will be impossible to effectively manage the issue in an ad-hoc and reactive manner.

Climate change requires a focus on both mitigation and adaptation activities. Mitigation limits the long-term contribution of greenhouse gas emissions to global environmental change and adaptation responds to the impacts that will already be locked into the climate system. The integration of mitigation and adaptation activities act as drivers for a low carbon economy, accessing economic and social opportunities.

Robust decision-making frameworks minimise future uncertainty as issues and information emerge and become important. This has been identified as the priority for Australian local governments:

*Local governments will better respond to the challenges of climate change in an environment where adaptive responsibilities are clear, response and evaluation frameworks are consistent across jurisdictions, approaches to mainstreaming climate change adaptation are implemented, and decisions are made on the basis of the best data and information. (National Climate Change Adaptation Research Facility (NCCARF), 2013)*

## 1.2 A South Australian Context

South Australia was the first jurisdiction in Australia to introduce climate change-specific legislation – the *Climate Change and Greenhouse Emissions Reduction Act 2007* (the Act). The Act promotes climate change mitigation and adaptation action within South Australia that provides consistency with national and international schemes. In response to the Act, the Local Government Climate Change Adaptation Program was developed with the support of the Local Government Association Mutual Liability Scheme. This led to the first comprehensive assessment of climate risks across councils in South Australia, which were mostly undertaken over the period 2010 to 2011.

This initial experience with climate risk planning was built on following the release in 2012 of South Australia's adaptation framework "Prospering in Changing Climate: A Climate Change Adaptation Framework for South Australia". The framework outlined a consistent approach for the development of regional adaptation plans and delivery of integrated vulnerability assessments for all parts of the State. The resulting integrated vulnerability assessments and regional plans were completed over the period 2014 to 2017 and have been progressively implemented in most regions with the support of region-wide or council specific adaptation action plans.

## 1.3 Assessing Climate Change Adaptation Governance

The extent to which climate change risk and adaptation is considered in a local government's core governance documents may affect the implementation of the organisation's approach to climate change adaptation.

Measuring and monitoring indicators for climate change adaptation and mitigation governance provide a platform for a consistent approach. This allows local governments the ability to monitor and improve their performance over time. Initial focus and emphasis should be on a council's adaptation governance. Unless it can be ensured that a council's internal adaptive capacity is robust, that is its ability to respond to potential climate change impacts, then there is a risk that specific adaptation actions will be ad-hoc and constrained by limited resourcing and political support.

*[Climate change] governance is not about the specific measure but the system and framework that supports the decision-making process...given the complexities and rapid emergence of regulations, evolving information and market responses, implementing [climate change] governance is the only way an organisation can truly maintain an effective response (Edwards, Burton, & Baker-Jones, 2017).*

Understanding climate change governance may help decision-makers to estimate the vulnerability of a system to stress and address the underlying causes of vulnerability over time. It may help to support proactive decision-making by assisting organisations to identify both the risks and possible responses in advance and develop the capacity to implement the required actions.

The need to focus on climate change governance is gaining momentum in academic literature, United Nations publications and approaches, and corporate disclosure frameworks (Clos, 2015). For example, disclosure of governance arrangements around climate-related risks and opportunities is a key component of the recommendations of the Financial Stability Board's [Task Force on Climate-related Financial Disclosures](#) (TCFD) (see Figure 2).

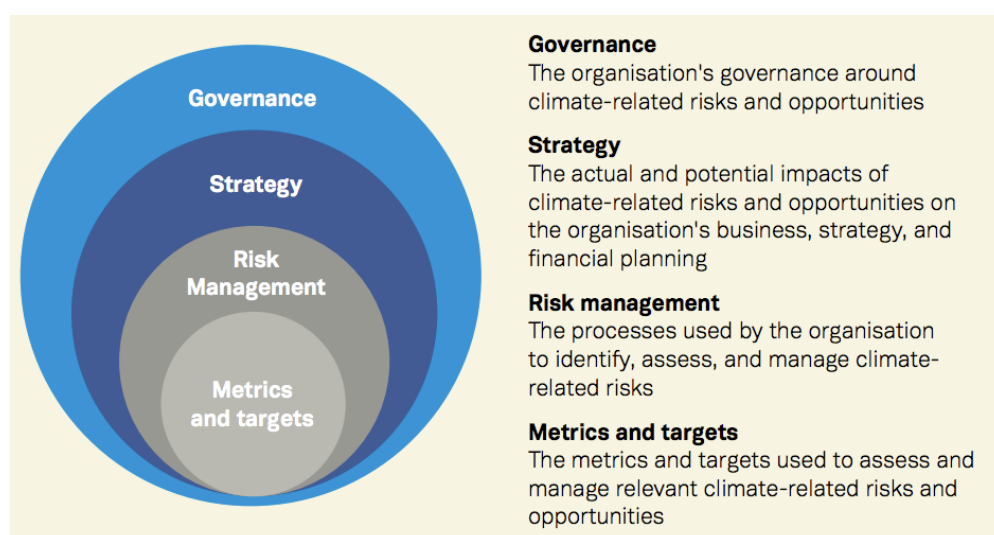


Figure 2: Core Elements of Recommended Climate-Related Financial Disclosures (TCFD, 2016)

## 2 About This Report

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This report presents the methodology and results of an analysis of the extent of climate change adaptation governance for the City of Unley. It includes the information collected from an online staff survey, results of the governance assessment, and findings from face-to-face meetings with representatives of the City of Unley. The report also provides a range of recommendations to assist the City of Unley in improving their climate change adaptation governance.

This assessment predominantly focuses on adaptation governance. Mitigation has been considered only regarding formal greenhouse gas emissions reduction targets. A detailed greenhouse gas emissions governance assessment requires an audit of baseline emissions data and data recording protocols (e.g. emissions scope, alignment to Australian standards etc.) – which is outside the scope of this project.

## 3 Methodology

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This project uses Climate Planning's climate change adaptation governance assessment framework to understand how effectively climate change considerations are integrated into the corporate operations and governance for the City of Unley. The governance assessment was undertaken in two stages:











- **Quantitative Assessment** - typology-based review of local government inclusion and influence of climate change in publicly available corporate documents. Also includes a survey of staff members' understanding of climate change impacts, their department's capacity to adapt and their perceived barriers and enablers to improved consideration of climate change in Council decision-making.
- **Qualitative Assessment** - qualitative analysis of local government consideration of climate change adaptation governance based on face-to-face meetings with key council staff members. These meetings were used to glean information about barriers and enablers to mainstreaming consideration of climate change.

### 3.1 Quantitative Assessment

The quantitative assessment aimed to identify publicly available corporate documents for the City of Unley and undertake a deeper exploration into how climate change is considered in those governance documents. These corporate documents are the key governance documents that either drive the organisational decision-making or report on the effectiveness of those processes. The documents were assessed against ten quantitative indicators for climate change adaptation governance (see Table 2).



Table 2: Justification of climate change adaptation governance indicators for the quantitative assessment

Indicator	Justification
 Strategic Planning	Strategic Planning documents direct how decision-makers in local government must discharge their responsibility under State legislation. Including considerations of climate change here will likely result in better likelihood for mainstreaming the issue in the council's operations and financial structures.
 Financial Management	If ignored, the effects of climate change are likely to have a considerable impact on a council's financial performance. This includes costs associated with asset management, service delivery, legal risk and insurance. Climate change may also affect rateable property value and therefore have the potential to affect council's primary income stream.
 Public Risk Disclosure	There is an increasing demand in the private sector for a transparent approach to addressing climate-related risk. A transparent approach means public disclosure of risks. Over time councils can expect insurers and finance providers, amongst others, to request councils to disclose how they are addressing climate-related risk.
 Asset Management	Local governments have hundreds of millions (and in some cases billions) of dollars invested in assets. Some of the assets that councils maintain have a long life expectancy and as such may be exposed to direct and indirect climate change risks. This generates a potentially unexplored or under-quantified financial risk for local governments.
 Land Use Planning	Land use planning can play a critical role in climate change adaptation. Strategic and local planning decisions can both increase or decrease the exposure of human settlements to climate change impacts. If done well effective land use planning can support climate-resilient and low energy development.
 Emergency Management	There are significant opportunities to drive climate change adaptation decision making through emergency management planning. Adaptation has numerous supporting benefits for emergency management including the implementation of risk planning for disaster mitigation and preparedness, response capacity and minimising exposure to reoccurring situations.
 Greenhouse Gas Emissions Reduction	Climate change mitigation actions allow for an exploration and promotion of resilient energy systems and passive solar design that may reduce human health-related issues as well as considerable energy savings. Furthermore, it is very likely that climate change adaptation will need to occur in a carbon-constrained economy.
 Climate Risk Management	Climate change is a complex issue that will exacerbate existing risks and present new ones. Often climate change risk management is undertaken in an ad hoc way – resulting in inconsistent approaches within an organisation. Some direction that defines how climate change risk is identified and disclosed will greatly improve council's adaptation planning.
 Adaptation Planning	Best practice adaptation plans identify the actions required to mitigate specific risks and have mechanisms in place to respond to physical, transitional and liability risks. Adaptation planning helps to set key performance indicators and establish roles and responsibilities across council and more broadly.
 Climate Change Policy	An internal Climate Change Policy (or corporate standard/ statement of intent) allows the organisation to place a climate change lens over all of council's activities and use the existing system to drive adaptation, risk minimisation and transition to a lower-carbon economy. It can allow for the agreed use of information sources and specific triggers for change.

The quantitative assessment focusses specifically on an assessment of Council's corporate documents which are publicly available which means they are accessible through an online platform (e.g. Council's website). An analysis of only public documents supports the growing recognition that disclosure of climate risk is an important element in climate change management. This is reinforced by Edwards et al. (2017) who state that "it is not enough to do the right thing, one must also be seen to be doing the right thing." The Paris Agreement recognises transparency as a fundamental principle in climate change management (both in actions and in governance). There is also an increasing call for local government disclosure of risk and governance responses by those who re-

insure local government risk. Proactive disclosure aids market decisions and also increases public trust in the government (Kim & Kim, 2007).

### 3.1.1 Keyword Analysis

The Project Team has identified 17 publicly available corporate documents from the City of Unley which align with the ten quantitative indicators of climate change adaptation governance (see Table 3). The team conducted a keyword analysis to identify how many words associated with climate change were present in Council's documents. Some of the words reviewed include 'climate change', 'adaptation' and 'greenhouse gas emissions' (a complete list of words can be found in Appendix B). If any of these words were identified, the Project Team undertook a closer analysis of the context to assess the extent of how they were considered in the documents.

Table 3: The City of Unley's corporate documents identified for the quantitative assessment

Indicator	Document Name
<b>Strategic Planning (#1)</b>	<ul style="list-style-type: none"> <li>Community Plan 2033</li> <li>Four Year Delivery Plan 2017-2021</li> </ul>
<b>Financial Management (#2)</b>	<ul style="list-style-type: none"> <li>Annual Business Plan and Budget Draft 2021-2022</li> <li>Long Term Financial Plan 2020-2029</li> </ul>
<b>Public Risk Disclosure (#3)</b>	<ul style="list-style-type: none"> <li>Strategic Risk Register 2021</li> </ul>
<b>Asset Management (#4)</b>	<ul style="list-style-type: none"> <li>Asset Management Policy 2019</li> <li>Building Asset Management Plan 2020</li> <li>Open Space Asset Management Plan 2020</li> <li>Stormwater Asset Management Plan 2020</li> <li>Transport Asset Management Plan 2020</li> </ul>
<b>Land Use Planning (#5)</b>	<ul style="list-style-type: none"> <li>Planning and Design Code 2021 (State)</li> </ul>
<b>Emergency Management (#6)</b>	<ul style="list-style-type: none"> <li>Eastern Adelaide Zone Emergency Management Plan 2020</li> </ul>
<b>Greenhouse Gas Emissions Reduction (#7)</b>	<ul style="list-style-type: none"> <li>Climate and Energy Plan Draft 2021</li> </ul>
<b>Risk Management (#8)</b>	<ul style="list-style-type: none"> <li>Risk Management Policy 2020</li> </ul>
<b>Adaptation Planning (#9)</b>	<ul style="list-style-type: none"> <li>Environmental Sustainability Strategy 2016-2020</li> <li>Resilient East Regional Climate Change Adaptation Plan 2016 (regional)</li> </ul>
<b>Climate Change Policy (#10)</b>	<ul style="list-style-type: none"> <li>Environmental Policy 2019</li> </ul>

### 3.1.2 Evaluation Matrices

The Project Team assessed the corporate documents for each governance indicator using a scoring system developed by Climate Planning. The method is relatively simple as it uses scaled matrices with descriptions on a continuum between no consideration and an advanced consideration of climate change. The Project Team scored the corporate documents using a five-point scale which was tailored to each governance indicator in the quantitative assessment (these evaluation matrices are provided in Section 4.2).

Since the quantitative assessment relies on an analysis of the corporate documents, Council staff were not directly engaged for the quantitative indicators. Although, some findings obtained from the face-to-face meetings may inform and/ or provide context about some of the quantitative








indicators and will, therefore, be presented in the results where relevant. However, they are not given any weight in the conclusions of this report (other than limitations/ barriers to mainstreaming noted by the staff).

The findings in this report are based on a quantitative assessment of the City of Unley that was completed on the 18<sup>th</sup> of May 2021.

## 3.2 Qualitative Assessment

The purpose of the qualitative assessment was to build a more complete representation of climate change adaptation by focussing on the complex drivers which could not be understood through an assessment of public corporate documents in the quantitative assessment. These drivers are captured in seven qualitative governance indicators (see Table 4).

Table 4: Justification of climate change adaptation governance indicators for qualitative assessment

Indicator	Justification
 Climate Risk Assessments	Climate change risk assessments are useful for identifying and quantifying the potential effects of climate change. They provide organisations with the critical information they need to understand the impacts that climate change may present. Risk assessments also help to identify and prioritise issues that require further investigation and/ or adaptation actions.
 Climate Legal Risk	Climate change is emerging more and more as a climate legal risk problem that governments, organisations and the community are attempting to understand, avoid and manage. The nature of climate legal risk for local governments is a minefield that can manifest itself in many ways. There is the potential that one lawsuit could erode a council's financial resilience.
 Staff Capacity and Resource Allocation	Monitoring councils' resource and staffing commitment to climate change is critical to supporting ongoing climate change adaptation. If a council only relies on external consultants for adaptation research and responses, then it is doing very little to support the improved internal adaptive capacity of its organisation. The overarching goal for adaptation should be to mainstream consideration of climate change across all council activities.
 Community/ Stakeholder Engagement	Connecting to the community is a core component for developing a safer, more resilient community. It is a local community who will bear the brunt of climate change impacts as they directly or indirectly contribute towards adaptation efforts (e.g. through increased insurance costs, taxes, and voluntary community actions).
 Institutional/ Intergovernmental Relationships	Climate change is a trans-boundary issue. Adaptation action (or inaction) by one stakeholder can both improve and erode the resilience of another. Economies of scale and collectively sharing knowledge can improve adaptation governance. The actions by a range of organisations have the potential to affect councils' resilience.
 Climate Change Information	Understanding the impacts of climate change requires access to climate change information. Whilst institutions such as NCCARF, CSIRO, and universities freely provide valuable publications on climate change risk and adaptation, obtaining climate change projections (e.g. from climate change models) is often a time consuming and expensive task, or one that can misalign with councils' timing needs.
 Information Systems	As the information technology age continues to shape our society it comes as no surprise to see that information services are playing an increasing role in supporting council operations and providing a new interface with the community it serves. Information communication technology networks such as social media platforms, websites and information portals have the potential to contribute significantly to councils' climate change adaptation ambitions.

The Project Team undertook face-to-face meetings with representatives from the City of Unley. During the meeting conversations, representatives were asked a series of questions which the Project Team later used in a qualitative analysis to understand the issues and barriers and enablers for considering climate change in decision making for the City of Unley. The information was obtained through a set of consistent questions aligned to the relevant themes. The series of core questions are provided at the end of this report (see Appendix C).

The results collected through the qualitative assessment are not directly attributed to a 'score'. The findings from this assessment are used to build a better understanding of some areas of these indicators that may not become evident through a reading of the documents in isolation. While findings will not be attributed to a score, the outcome will inform any discussion or recommendations. They will also be recorded for a comparative review of future assessments.

The face-to-face meetings for Council were conducted on the 2<sup>nd</sup> of March 2021.

## 4 Results and Specific Recommendations

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The results focus on interesting findings of the governance assessment as well as possible links drawn from a survey of staff members. This section first provides an overview of the results of the staff governance survey. The questionnaire for the staff governance survey has been provided in Appendix A. It then addresses the results and specific recommendations for the quantitative and qualitative assessment separately. Any interesting findings from the face-to-face meetings or the staff governance survey which relate to a specific governance indicator have also been integrated into the results.

### 4.1 Results for Staff Governance Survey

Of the 79 staff members in the City of Unley who participated in the staff governance survey, the highest representation work in the Community and Recreation department (23 staff members, 29%). This is closely followed by the Planning and Development department which had 11 staff members (14%) participate in the online survey (see Figure 3).

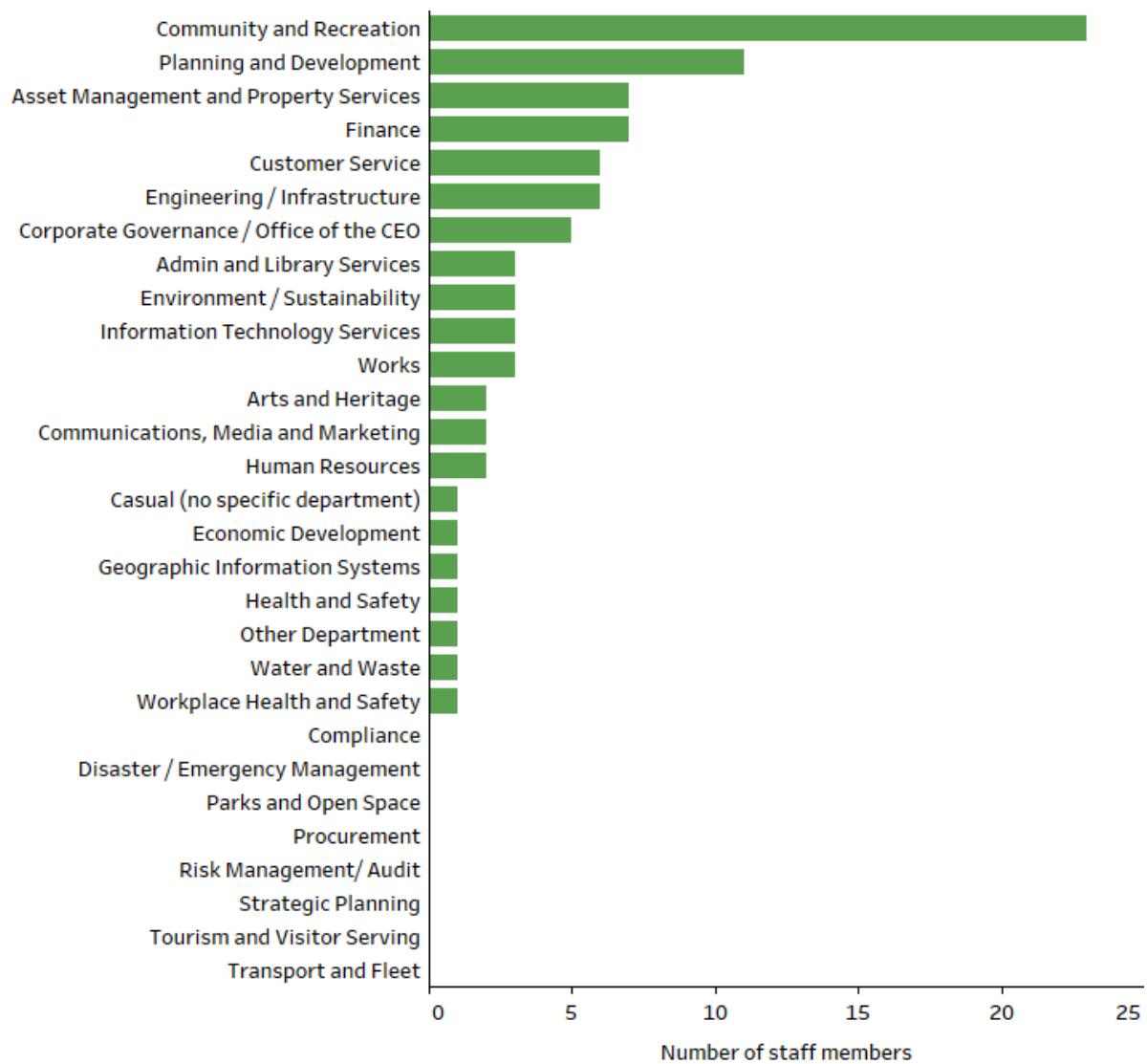


Figure 3: Number of the City of Unley staff members from each department who participated in the staff governance survey

The online survey found that 91% of respondents have some level of understanding of climate change impacts and adaptation. 35 staff members stated that their understanding is limited, and 37 staff members believed that they could comfortably incorporate/ consider climate change in their job (see Table 5). Furthermore, 51 respondents (71%) identified a good understanding of climate change as an enabler to Council's ability to plan for climate change.

Table 5: Understanding of climate change impacts and adaptation for the City of Unley staff members

	Number of staff members	% of staff members
I am not sure of my understanding	5	6%
I have no understanding	2	3%
My understanding is limited	35	44%
I could comfortably incorporate/ consider climate change adaptation	37	47%
<b>Total</b>	<b>79</b>	<b>100%</b>

## 4.2 Results and Recommendations for Quantitative Assessment

The specific results of the quantitative assessment have been divided into the ten quantitative indicators of climate change adaptation governance. This section will elaborate on the City of Unley's results for each governance indicator and provide specific recommendations for how Council can transition to a higher score level. The analysis of each indicator will discuss the importance of the indicator, staff survey results, quantitative assessment results, and specific recommendations. Findings from the face-to-face meetings are provided for relevant indicators.

Please note that only one recommendation has been provided for each indicator as a 'first step' for Council to transition to the next score level. These recommendations are specific to each level which means that completing one recommendation will only improve Council's score by one level. For this reason, there may be a range of recommendations which Council can implement to achieve a desired indicator score. For example, there are three specific recommendations that a Council can implement to transition from 'Intermediate' to 'Advanced' for a particular indicator.

### 4.2.1 Overview of Quantitative Assessment Results

The Project Team conducted a governance assessment of the City of Unley to explore how climate change was considered in their corporate documents. The City of Unley was assessed against ten quantitative governance indicators, with Figure 4 displaying Council's performance.

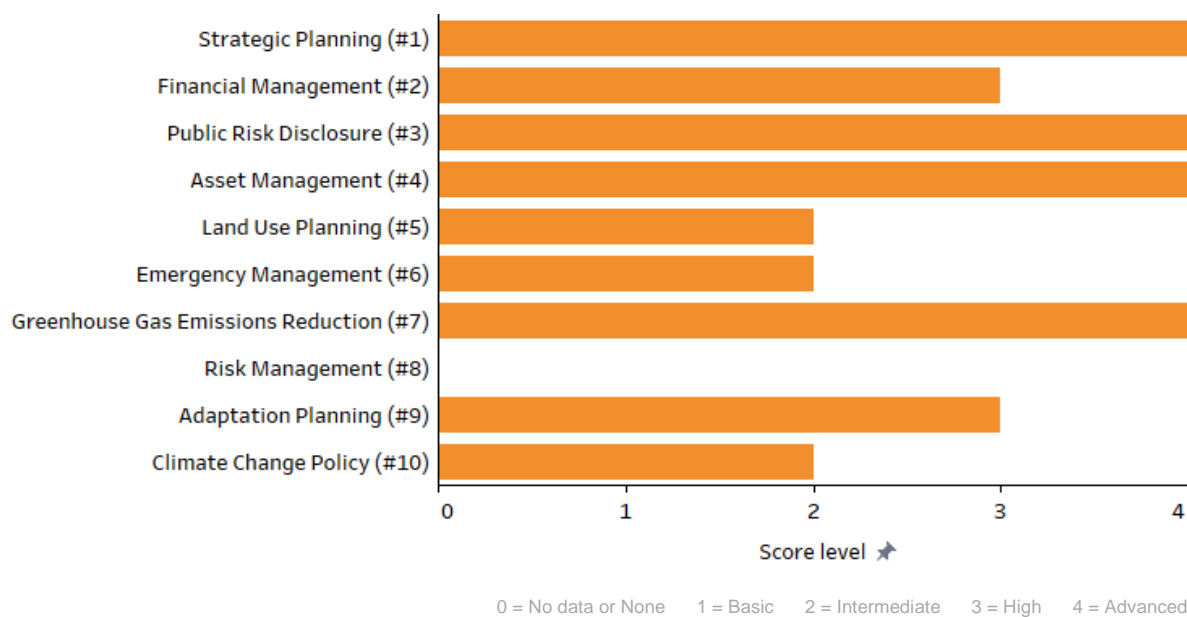


Figure 4: The City of Unley's quantitative scores for climate change adaptation governance

The evaluation matrix (see Table 6) provides a summary of the City of Unley's score for each governance indicator including descriptions to explain how the indicators were assessed.

Table 6: The City of Unley's quantitative evaluation for climate change adaptation governance

Indicator	Level	Description
<b>Strategic Planning (#1)</b>	Advanced	Climate change is well-considered and includes responses to direct and indirect impacts.
<b>Financial Management (#2)</b>	High	Climate change adaptation is recognised in financial planning (more than one climate change issue AND/OR council function). But the financial management documents do not guide innovative finance or investment policies.
<b>Public Risk Disclosure (#3)</b>	Advanced	Climate change is well-considered and includes responses to direct and indirect impacts.
<b>Asset Management (#4)</b>	Advanced	Climate change is well-considered and includes responses to direct and indirect impacts.
<b>Land Use Planning (#5)</b>	Intermediate	Brief inclusion of climate change for one or more climate change issue AND/OR planning theme. Also includes objectives or desired outcomes for specific climate change considerations. May have some general strategies or suggested responses.
<b>Emergency Management (#6)</b>	Intermediate	Considers climate change issues in at least one element of emergency management (e.g. plan for increased heatwaves) in either a Council or regional emergency management plan.
<b>Greenhouse Gas Emissions Reduction (#7)</b>	Advanced	Climate change target and aim for carbon neutrality by or before 2050.
<b>Risk Management (#8)</b>	None	No consideration of climate change (or associated keywords) in the risk management documents.
<b>Adaptation Planning (#9)</b>	High	Detailed responses for adaptation actions for both the Council and community. Does not have all the attributes listed in the 'Advanced' score level.
<b>Climate Change Policy (#10)</b>	Intermediate	Climate change is considered in either a climate change policy OR environment/ sustainability policy. Detailed inclusion of climate change, but is limited to two climate change issues (e.g. bushfire) AND/OR two council functions (e.g. land use planning).

#### 4.2.2 Indicator 1: Strategic Planning

##### *Justification for this indicator*

The strategic management plans (SMPs) are local government's core guiding documents that combine the community's aspirational vision, together with Council's commitments to actions to achieve these goals. Under Section 122 (1) of the *Local Government Act 1999*, "A council must develop and adopt plans (which may take various forms) for the management of its area, to be called collectively the strategic management plans" (Government of South Australia, 2019). These plans aim to identify the council's objectives for the area over a period of at least 4 years.

SMPs establish the vision, goals and objectives for a local government, as well as help shaped formal management processes. There is no prescribed format for Council SMPs and as such the information contained in them varies from council to council. Given the influence of the SMP, any consideration of climate change in the document/s is likely to assist local government adaptation decision-making.



## Staff survey results

The online survey showed that 52 staff members (68%) believe that climate change is impacting Council's operations and procedures now and around 17% of respondents (13 staff members) believe it will be felt within the next 15 years (see Figure 5).

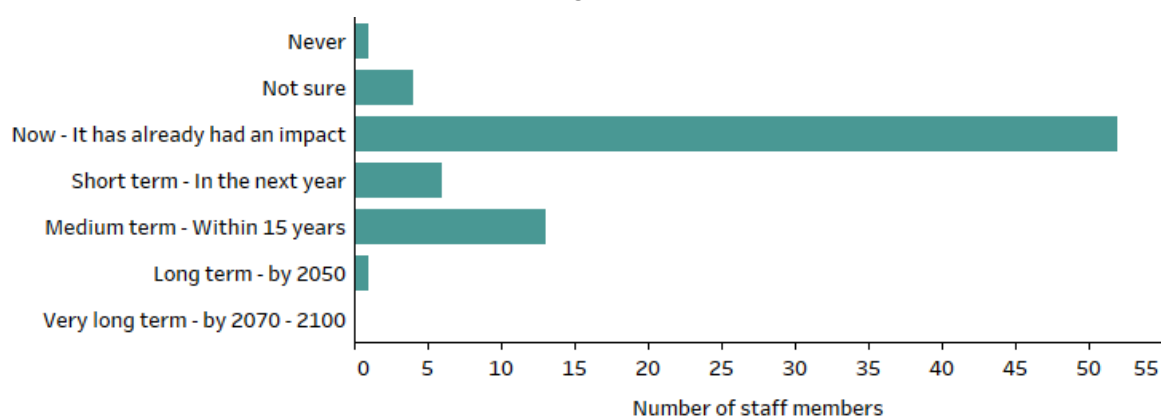


Figure 5: Impact of climate change on the City of Unley's operations and procedures

## Quantitative assessment results

The Project Team reviewed two corporate documents for this indicator, the Community Plan 2033 and the Four Year Delivery Plan 2017-2021. The Community Plan outlines Council's objectives which include increasing the City's resilience to climate change and reducing their carbon footprint by improving energy efficiency (City of Unley, 2017a). The Four Year Delivery Plan elaborates on this by providing strategies and detailed actions to show how Council will achieve their objectives. For example, Council seeks to ensure that urban design and policy advocate for resilience to climate change and educate the community on positive actions (City of Unley, 2017b). Since the Four Year Delivery Plan considers indirect actions and commitments to regional responses, the City of Unley scored 'Advanced' for the Strategic Planning indicator (see Table 7).

Table 7: The City of Unley's indicator score for Strategic Planning

Level (Score)	Indicator Description
<b>No data</b>	No publicly available Strategic Management Plan/s were found.
<b>None (0)</b>	No consideration of climate change (or associated keywords) in the Strategic Management Plan/s.
<b>Basic (1)</b>	General statements about climate change (e.g. in the introduction) OR includes other keywords associated with managing climate change in a general context (e.g. greenhouse gas emissions).
<b>Intermediate (2)</b>	Prescribed responses <sup>1</sup> / guidance for one climate change issue <sup>1</sup> (e.g. bushfire) AND/OR one council function <sup>1</sup> (e.g. land use planning) only.
<b>High (3)</b>	Detailed inclusion of climate change, but is limited to two climate change issues (e.g. bushfire) AND/OR two council functions (e.g. land use planning).
<b>Advanced (4)</b>	Climate change is well-considered and includes responses to direct and indirect impacts <sup>1</sup> .

<sup>1</sup> See Appendix D for definitions of prescribed responses, climate change issues, council functions, and direct and indirect impacts

### *Specific recommendations for quantitative assessment*

The Project Team recommend the following as a first step for the City of Unley to maintain an 'Advanced' score in the Strategic Planning indicator:

Council has received an 'Advanced' score for this indicator. Achieving this score sees Council in the top fraction of Australian local governments for this indicator and places it in a position to share the journey with other local governments seeking to improve their consideration of climate change. To ensure that this indicator maintains this level Council will need to monitor any new IPCC reports, government regulations and emerging standards that may affect Council's adaptation actions. Furthermore, ensure that Council maintains sufficient staff capacity and resources to maintain their score for this indicator.

### *Findings from the face-to-face meetings*

Some of the staff at the interviews noted that climate change was incorporated into the strategic planning documents and that this helped direct their focus. Many staff stated that they believed Council to have a very good consideration of climate change in decision-making.

## 4.2.3 Indicator 2: Financial Management

### *Justification for this indicator*

Climate change is increasingly seen as a financial management issue. The cost of direct and indirect impacts will cascade through the economy and affect costs associated with a local government's activities and responsibilities. For example, at a local level, changes in the productivity of the wine sector could impact wine and tourism businesses, while homes at risk from flood and fire could lead to reduced property values in some areas. At an international level, increased extreme weather in Asia may disrupt global supply chains and affect the availability of certain goods and services for local governments, or increased litigation may affect local government insurance costs (general insurance and liability cover). The *Local Government Act 1999* requires local governments to prepare a Long-Term Financial Management Plan (s.122)(1a) and an Annual Business Plan (s. 123)(1) as part their system of financial management.

Furthermore, climate change adaptation requires initial and ongoing outlay of resources and commitment of staff time. Resource constraints and/or lack of financial commitment from local governments are often identified as a primary barrier to implementing climate change adaptation. In Climate Planning's experience, it involves minimal resourcing for a council to achieve a 'Basic' or 'Intermediate' score for Financial Management, however, to reach the upper score ranges ('High' and 'Advanced') requires a more formal and strategic commitment.

### *Staff survey results*

In the online survey, 44 staff members (60%) identified limited assigned funding as a barrier hindering Council's ability to plan for climate change. This was a popular barrier among staff members, with it ranked first in the list of barriers (see Figure 6). On the other hand, 69% of respondents (50 staff members) acknowledged that an understanding of the costs/ benefits of climate change adaptation actions is an enabler for climate change. Other enablers identified were external funding (34 staff members, 47%) and avoiding future unbudgeted costs (17 staff members, 24%).

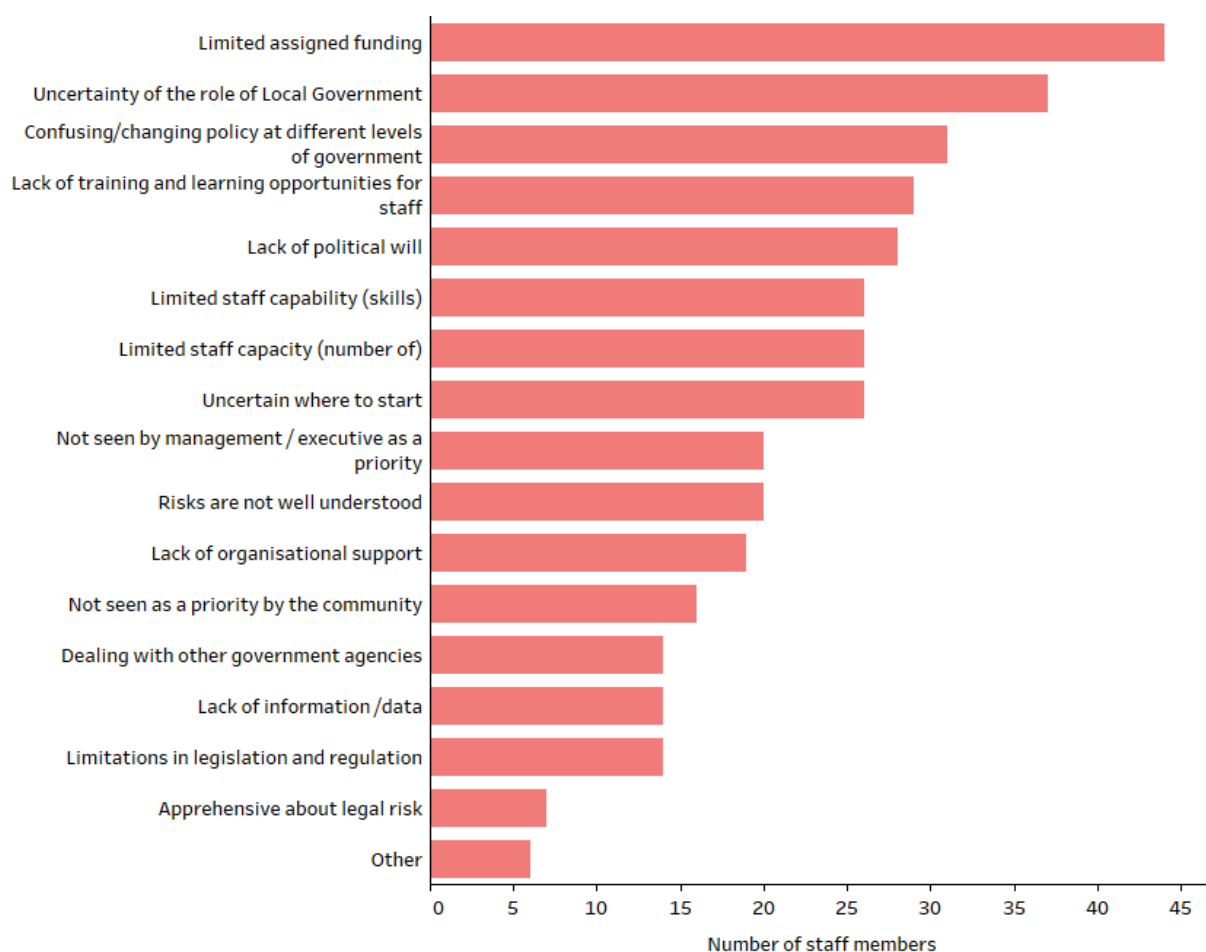


Figure 6: Barriers hindering the City of Unley's ability to plan for climate change

### *Quantitative assessment results*

The Project Team assessed two corporate documents for the Financial Management indicator. These are the Annual Business Plan and Budget Draft 2021-2022 and the Long Term Financial Plan 2020-2029. The Financial Plan showed no consideration of climate change (or associated keywords). However, in the Annual Business Plan, Council has disclosed existing funding for operating projects such as Resilient East and a series of community workshops titled 'Getting to Net Zero, Affordably'. The City of Unley has also budgeted new capital for the first-year implementation of the Climate & Energy Plan which includes a solar panel incentive scheme (City of Unley, 2021). Since the Annual Business Plan aims to deliver a range of projects, programs and incentives, this sees the City of Unley score 'High' for the Financial Management indicator (see Table 8).

Table 8: The City of Unley's indicator score for Financial Management

Level (Score)	Indicator Description
<b>No data</b>	No publicly available financial management documents <sup>1</sup> were found.
<b>None (0)</b>	No consideration of climate change (or associated words) in the financial management documents <sup>1</sup> .
<b>Basic (1)</b>	General statements about climate change (e.g. in the introduction) OR includes other keywords associated with managing climate change in a general context (e.g. greenhouse gas emissions).
<b>Intermediate (2)</b>	Prescribed responses <sup>1</sup> / guidance for one climate change issue <sup>1</sup> (e.g. bushfire) AND/OR one council function <sup>1</sup> (e.g. land use planning) only.
<b>High (3)</b>	Climate change adaptation is recognised in financial planning (more than one climate change issue AND/OR council function). But the financial management documents do not guide innovative finance or investment policies.
<b>Advanced (4)</b>	Climate change adaptation is well-budgeted for and resources allocated for mainstreaming. Consideration for climate change in investments and/or investment policies etc. is stated. Innovated finance mechanisms may also be encouraged.

<sup>1</sup> See Appendix D for definitions of documents, prescribed responses, climate change issues and council functions

### *Specific recommendations for quantitative assessment*

The Project Team recommend the following as a first step for the City of Unley to transition from 'High' to 'Advanced' in the Financial Management indicator:

To increase the score for this indicator (to 'Advanced') requires some specific focus on the potential supporting policies (e.g. financial management plan, asset management, climate change policy). Council should make statements in its financial planning documents specifically stating climate change as a financial risk and outlining the actions and allocation of resources that will help to mitigate the previously stated climate risk. Furthermore, financial management plans should include statements about divestment from fossil fuels, energy transition, and consideration of a price on carbon in adaptation decisions. Council should also consider issues such as insurance, effects on rateable value, asset OPEX and CAPEX issues and other direct and indirect issues associated with climate change. Financial management should also state how financial performance while responding to climate change will be implemented. However, the effect of financial management issues on other council functions (e.g. assets) are important to consider. For example, understanding whether staff capacity, capability and training needs are a barrier to understanding climate change and its financial implications in your Council.

### *Findings from the face-to-face meetings*

Many of those interviewed recognised the potential financial impact of climate change. It was noted by some participants that they have already seen climate-related increases in expenditure. For example, increasing costs associated with having to water trees for longer.

While it was recognised by some participants that climate change did have recognition in financial planning, there was an obvious need for more resource allocation to the issue (i.e. to improve the mainstreaming of climate change into the organisation's system). It was noted by some that the creation of a 'revolving fund' for renewable energy may assist with resourcing required for greenhouse gas mitigation actions.

Specific consideration should also be given to the following recommendations:

- Establishment of a revolving green energy fund
- Improved allocation of resources for climate-related risk and opportunity
- Ongoing public disclosure of financial and non-financial risks
- Consideration of an internal price on carbon for long-term strategic decisions

#### 4.2.4 Indicator 3: Public Risk Disclosure

##### *Justification for this indicator*

There is considerable evidence to suggest that climate change will have a material impact on a local government's operations and as such, it would be prudent to assess the consideration of climate change in Council's public risk registers. Currently, there is no regulatory requirement to maintain a public risk register however the *Local Government Act 1999* requires councils to manage their risks. However, Section 48 (aa1) of the *Local Government Act 1999* requires each council to have prudential management "policies, practices and procedures" that must be applied to all Council projects, not just large ones (Government of South Australia, 2019).

There is increasing pressure for organisations to disclose their climate change related risks (e.g. Carbon Disclosure Project programs – which encourage organisations to publicly disclose climate risks). Over time councils can expect insurers and finance providers, amongst others, to request councils to disclose how they are addressing climate-related risk. Furthermore, the Paris Agreement (which Australia is a signatory to) maintains a strong focus on transparency and disclosure.

This level of transparency helps to inform businesses and the community about the emerging risks and control measures that a council is implementing (or intends to implement). Council should seek advice on which elements of climate change risk can be effectively disclosed.

##### *Quantitative assessment results*

The Project Team located a Strategic Risk Register in Council's Audit Committee Meeting Agenda (11 May 2021). The risk register recognises the inability to respond to climate change as an 'Extreme' risk. Council outlines a range of associated risks including:

- "Canopy reduced – (out of Council's control)
- Reputational impact – as community has strong 'green' focus
- Heat-Island effect
- Public Health implications and risks
- Reduction in quality of life now and future
- Increased costs
- Impacts to rate-payers
- Impact to local flora and fauna
- Loss of enviable amenities
- Unley does not become a desirable place to live
- Loss of productivity of operations due to extreme weather events" (City of Unley, 2021)

Council has also identified 14 corporate documents they use to control/mitigate these climate-related risks. For this reason, the City of Unley achieved an 'Advanced' score for the Public Risk Disclosure indicator (see Table 9).

Table 9: The City of Unley's indicator score for Public Risk Disclosure

Level (Score)	Indicator Description
<b>No data</b>	No publicly available risk register OR risk disclosure documents <sup>1</sup> were found.
<b>None (0)</b>	No consideration of climate change (or associated keywords) in the public available risk register OR risk disclosure documents.
<b>Basic (1)</b>	General statements about climate change (e.g. in the introduction) OR includes other keywords associated with managing climate change in a general context (e.g. greenhouse gas emissions).
<b>Intermediate (2)</b>	Prescribed responses <sup>1</sup> / guidance for one climate change issue <sup>1</sup> (e.g. bushfire) AND/OR one climate change risk <sup>1</sup> (e.g. infrastructure risk) only.
<b>High (3)</b>	Detailed inclusion of climate change (more than one climate change issue AND/OR climate change risk), but is limited to responses to direct impacts <sup>1</sup> of climate change.
<b>Advanced (4)</b>	Climate change is well-considered and includes responses to direct and indirect impacts <sup>1</sup> .

<sup>1</sup> See Appendix D for definitions of documents, prescribed responses, climate change issues, climate change risks, and direct and indirect impacts

### *Specific recommendations for quantitative assessment*

The Project Team recommend the following as a first step for the City of Unley to maintain an 'Advanced' score in the Public Risk Disclosure indicator:

Council has received an 'Advanced' score for this indicator. Achieving this score sees the organisation in the top fraction of Australian local governments for this indicator and enables it to share its journey with other local governments seeking to improve their consideration of climate change. To ensure that this indicator is maintained at this level it will be important to monitor any new IPCC reports, government regulations and emerging standards that may affect adaptation actions. Furthermore, ensure that Council maintains sufficient staff capacity and resources to maintain their score for this indicator.

### *Findings from the face-to-face meetings*

Although Council has a public risk register with an excellent consideration of climate change it was interesting to note that many staff did not know it existed.

It is recommended that Council conduct internal awareness raising and promotion to increase staff awareness and understanding of the public risk register and the inclusion of climate change within it. Awareness raising could take the form of:

- Staff training.
- Regular internal communications i.e. quarterly emails.
- Inclusion of information as part of the staff induction process.

## 4.2.5 Indicator 4: Asset Management

### *Justification for this indicator*

Local governments have hundreds of millions (and in some cases billions) of dollars invested in assets. Some of the assets that councils maintain, or are likely to install and maintain, have a long life expectancy and as such may be exposed to direct and indirect climate change risks. A failure of asset management consideration generates a potentially unexplored or under-quantified financial risk for local governments. The *Local Government Act 1999* requires local governments to prepare an Infrastructure and Asset Management Plan (s.122)(1a).

In 2013, the Australian Standards released the voluntary standard AS5334-2013 Climate Change Adaptation Standard for Settlements and Infrastructure – a Risk-Based Approach. The fact that this standard has recently been developed signals that organisations are anticipating compliance requirements. Over time government agencies that provide infrastructure funding or co-funding to councils will likely require climate change to be considered in the delivery of projects. How a local government manages assets under climate change will be a key determinant in understanding a settlement's limits to adaptation.

### *Quantitative assessment results*

The Project Team assessed the following five asset management documents for this indicator:

- Asset Management Policy 2019
- Building Asset Management Plan 2020
- Open Space Asset Management Plan 2020
- Stormwater Asset Management Plan 2020
- Transport Asset Management Plan 2020

There was no mention of climate change or associated keywords in the Asset Management Policy 2019. All of Council's asset management plans provide a detailed inclusion of climate change including both direct and indirect impacts. Each plan identifies the impact of climate change on its assets, provides a summary of Council's demand management plan, and highlights how these decisions will influence the assets (see Appendix E).

In their plans, Council has also acknowledged the impact that climate change will have on the lifespan of their assets. They state:

*The impact of climate change to infrastructure assets useful life is not yet quantified and may continue to change as increased temperature, heatwaves, higher storm and rainfall intensities will increasingly affect the useful life of infrastructure at a material level. These impacts have been identified in risk management and future demands. (City of Unley, 2020)*

For this reason, the City of Unley scored 'Advanced' for the Asset Management indicator (see Table 10).



Table 10: The City of Unley's indicator score for Asset Management

Level (Score)	Indicator Description
<b>No data</b>	No publicly available asset management documents <sup>1</sup> were found.
<b>None (0)</b>	No consideration of climate change (or associated keywords) in the asset management documents.
<b>Basic (1)</b>	General statements about climate change (e.g. in the introduction) OR includes other keywords associated with managing climate change in a general context (e.g. greenhouse gas emissions).
<b>Intermediate (2)</b>	Prescribed responses <sup>1</sup> / guidance for one climate change issue <sup>1</sup> (e.g. bushfire) AND/OR one council function <sup>1</sup> (e.g. land use planning) only.
<b>High (3)</b>	Detailed inclusion of climate change, but is limited to two climate change issues (e.g. bushfire) AND/OR two council functions (e.g. land use planning).
<b>Advanced (4)</b>	Climate change is well-considered and includes responses to direct and indirect impacts <sup>1</sup> .

<sup>1</sup> See Appendix D for definitions of documents, prescribed responses, climate change issues, council functions, and direct and indirect impacts

### *Specific recommendations for quantitative assessment*

The Project Team recommend the following as a first step for the City of Unley to maintain an 'Advanced' score in the Asset Management indicator:

Council has received an 'Advanced' score for this indicator. Achieving this score sees you in the top fraction of Australian local governments for this indicator and you will be in a position to share your journey with other local governments seeking to improve their consideration of climate change. To ensure that this indicator maintains at this level Council will need to monitor any new IPCC reports, government regulations and emerging standards that may affect asset management adaptation actions. Furthermore, ensure that Council maintains sufficient staff capacity and resources to maintain their score for this indicator.

### *Findings from the face-to-face meetings*

The staff interviewed stated that they considered climate change as much as possible in their asset management. This includes material choice, maintenance regimes and implementing supporting technology.

## 4.2.6 Indicator 5: Land Use Planning

### *Justification for this indicator*

Land use planning can play a critical role in climate change adaptation. Strategic and local planning decisions can increase or decrease the exposure of human settlements to climate change impacts. Climate change is a risk multiplier for local government. The primary risk extends well beyond just sea level rise (which is conventionally exclusively considered) and can include increased riverine and urban flood risk, increased heatwaves, increased bushfire risks and the potential for increased intensity of extreme storm events to name a few. These risks can be minimised by effective land use planning.

South Australia's urban and regional planning system has recently undergone its biggest reform in over 20 years and became operational on the 19<sup>th</sup> of March 2021. The new planning system is underpinned by the *Planning, Development and Infrastructure Act 2016 (PDI Act)*. All development plans have been revoked and replaced with the Planning and Design Code - a single source of planning policy for assessing development applications (PlanSA, 2021a).

The Governor also issued a proclamation to establish seven Planning Regions for South Australia. These are Greater Adelaide, Eyre and Western, Far North, Kangaroo Island, Limestone Coast, Murray Mallee, and Yorke Peninsula and Mid North. Each region in South Australia has a plan to guide development and fulfil the vision of the State Planning Policies (PlanSA, 2021a). However, the policies and actions outlined in these regional plans provide guidance and direction for planning activities over a broad area rather than at the local government level. Since all council development applications are assessed under the Planning and Design Code, this is the principal planning mechanism that was reviewed for this indicator.

### *Staff survey results*

In the online survey, 41 staff members (60%) believe that statutory planning support is very helpful in adapting to climate change impacts.

### *Quantitative assessment results*

The Project Team assessed the Planning and Design Code 2021 for this indicator. The code includes brief statements of climate change and sea level rise in the desired outcomes of several planning themes. For example, the bushfire hazards overlay (general, medium, high risk) requires that development be designed to take into account the increased frequency and intensity of bushfires as a result of climate change. The code considers the effects of climate change on rainfall and air temperature for development in the Ramsar wetland and water protection areas overlay. Also, the coastal areas and coastal flooding overlays ensure that development "is protected from the standard sea flood risk level and 1m of sea level rise." (PlanSA, 2021b).

The City of Unley has achieved an 'Intermediate' for the Land Use Planning indicator (see Table 11) because it is not evident that Council has any further control over land use planning related to climate change than what is in the Planning and Design Code. The implementation of the Code is in the embryonic stages (having come to force on the 19<sup>th</sup> of March 2021). This indicator will require a review in 12 months.

Table 11: The City of Unley's indicator score for Land Use Planning

Level (Score)	Indicator Description
<b>No data</b>	No publicly available planning documents were found.
<b>None (0)</b>	No consideration of climate change (or associated keywords) in the planning documents.
<b>Basic (1)</b>	General statements about climate change (e.g. in the introduction) OR includes other keywords associated with managing climate change in a general context (e.g. greenhouse gas emissions).
<b>Intermediate (2)</b>	Brief inclusion of climate change for one or more climate change issue <sup>1</sup> AND/OR planning theme <sup>1</sup> . Also includes objectives or desired outcomes for specific climate change considerations. May have some general strategies or suggested responses.
<b>High (3)</b>	Detailed inclusion of climate change for one or more climate change issue AND/OR planning theme (including detailed strategies or suggested responses). May need updating to reflect the most recent IPCC assessment report from the date of publication. May have also considered other planning instruments (e.g. guidelines).
<b>Advanced (4)</b>	A significant consideration is given to climate change. Importantly, the planning document also includes responses to indirect impacts <sup>1</sup> of climate change. Must also reflect the latest science - most recent IPCC assessment report from the date of publication.

<sup>1</sup> See Appendix D for definitions of prescribed responses, climate change issues, planning theme, and direct and indirect impacts

### *Specific recommendations for quantitative assessment*

The Project Team recommend the following as a first step for the City of Unley to transition from 'Intermediate' to 'High' in the Land Use Planning indicator:

The assessment has found that Council has no further control over land use planning related to climate change than what is in the State-wide Planning and Design Code. Council should communicate with Planning and Land Use Services, through the state Attorney General's Office about ways in which local governments can better respond to climate change in their local planning decisions. Council should also collaborate with other local governments to engage with the State Government to raise awareness of relevant planning limitations and advocate for improved considerations of climate change in the Planning and Design Code. Relevant issues that should be incorporated into the Code include consideration of climate-related transition and physical issues associated with: the natural environment, built form, land use restrictions, renewable energy, transport planning, tradeable development rights, local climate change and sea level rise modelling etc.

### *Findings from the face-to-face meetings*

The interviews were carried out before the implementation of South Australia's Planning and Design Code. However, the staff stated that they anticipated that they would have very little influence with responding to climate change.

## 4.2.7 Indicator 6: Emergency Management

### *Justification for this indicator*

There are some important opportunities to drive climate change adaptation decision making through local government emergency management planning. Adapting to the effects of climate change has numerous supporting benefits for emergency management including the implementation of risk planning for disaster mitigation and preparedness, building appropriate response capacity and minimising exposure to reoccurring situations. Consideration of the long-term trends of climate change is fundamental for assessing risks, while still maintaining the ability to respond to unanticipated events and ensuring that emergency management is approached from a planning and mitigation perspective rather than purely as a responsive entity.

Under Section 9 (1e) of the *Emergency Management Act 2004*, the State Emergency Management Plan (SEMP) establishes eleven Zone Emergency Management Committees (ZEMCs) which are responsible for ensuring effective emergency risk management at the zone level. A key role of the ZEMCs is to develop a Zone Emergency Management Plan (ZEMP) to address residual risk and evaluate treatment options (Government of South Australia, 2016). As well as having a ZEMP some councils also have local emergency management plans or business interruption plans. To achieve the 'Advanced' score in this assessment, a council must have a local emergency management plan (or similar) that comprehensively considers climate change.

### *Staff survey results*

The online survey revealed that 29 staff members (37%) believe that the City of Unley is 'not prepared' for responding to climate change impacts which is slightly more than the 26 staff members (34%) who believe that Council is prepared (see Figure 7). Interestingly, there are another 22 staff members (29%) who were unsure of Council's level of preparedness for climate change.

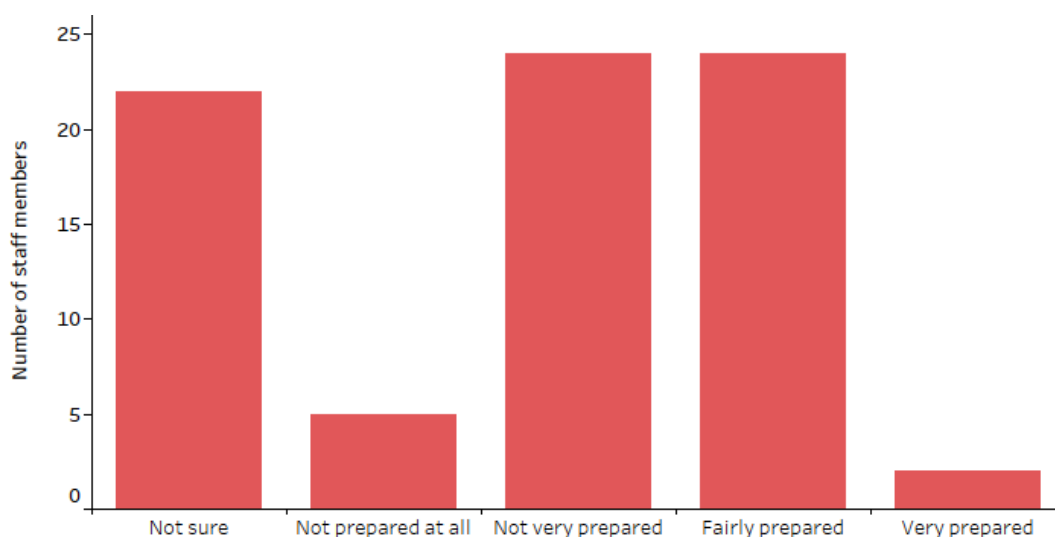


Figure 7: The City of Unley's level of preparedness for responding to climate change impacts

## Quantitative assessment results

The Project Team assessed only the Eastern Adelaide Zone Emergency Management Plan 2020 as a publicly available Council emergency management plan was not found for the City of Unley. The regional plan shows that climate change vulnerability assessments have been completed as a control improvement for heatwaves. For this reason, the City of Unley scored 'Intermediate' for the Emergency Management indicator (see Table 12). It should be noted that Council's Living Well - Health and Wellbeing Plan is not considered as it has not been endorsed by Council.

Table 12: The City of Unley's indicator score for Emergency Management

Level (Score)	Indicator Description
<b>No data</b>	No publicly available emergency management plan/s was found.
<b>None (0)</b>	No consideration of climate change (or associated keywords) in the emergency management plan/s*.
<b>Basic (1)</b>	General statements about climate change (e.g. in the introduction) OR includes other keywords associated with managing climate change in a general context (e.g. greenhouse gas emissions).
<b>Intermediate (2)</b>	Considers climate change issues <sup>1</sup> in at least one element of emergency management (e.g. plan for increased heatwaves) in either a regional or Council emergency management plan.
<b>High (3)</b>	Considers climate change issues in two or more elements of emergency management (e.g. plan for increased heatwaves) in a Council emergency management plan.
<b>Advanced (4)</b>	A Council emergency management plan exists and considers climate change issues in all elements of emergency management (e.g. provides climate scenarios, links to international and national leading standards, includes other council climate studies etc).

<sup>1</sup> See Appendix D for definitions of climate change issues

\* If a regional document is searched then a localised adjustment is applied for coastal hazards. This may mean that a coastal council may score differently to an inland council for the same regional plan.

## Specific recommendations for quantitative assessment

The Project Team recommend the following as a first step for the City of Unley to transition from 'Intermediate' to 'High' in the Emergency Management indicator:

To increase the score for this indicator (to 'High') the Council emergency management plan (or similar instrument) must be amended to ensure that climate change is referred to in the introduction and at least two elements of climate change are considered. An example of phrases in an emergency management plan that will support a 'High' score includes: "Climate change is likely to exacerbate many of the known disaster risks and affect those already especially vulnerable to natural hazards". Issues that will be relevant are the increased heatwave risk (i.e. present information on the current number of heatwave days for selected locations and then how that may change in 2030 / 2050 etc.). Other risks associated with climate change include more frequent and extreme floods, more extreme weather events (storms, hail) and increased disruption to emergency egress routes. It is important to link emergency management planning with land use planning and align the considerations of climate change between these two areas. The most cost-effective approach to this would be to glean information from other councils in South Australia or Australia

who have participated in an Informed.City™ climate change adaptation governance assessment and have reasonable scores in the indicators that you need help in improving.

## 4.2.8 Indicator 7: Greenhouse Gas Emissions Reduction

### *Justification for this indicator*

Climate change mitigation actions are listed as a core governance process for adaptation, as they allow for an exploration and promotion of resilient energy systems and passive solar design that may reduce human health-related issues (e.g. heat stress), as well as considerable energy savings. Furthermore, it is likely that all climate change adaptation will need to occur in a carbon-constrained economy.

Understanding the nexus between the two is an important element of adaptation. Many infrastructure-based adaptation actions (e.g. sea walls) are carbon-intensive and as such local governments will need to consider this in any cost-benefit analysis.

### *Quantitative assessment results*

The Project Team searched for a climate change target in Council's greenhouse gas emissions documents, other core governance documents identified in the quantitative assessment, and on Council's website. The assessment found a consideration to reduce greenhouse gas emissions in the Four Year Delivery Plan 2017-2021 and the Climate and Energy Plan Draft 2021. These plans set two emissions reduction targets:

- The City of Unley aims to reduce by 15% carbon emissions from Council operations by 2021.
- The City of Unley aims to be Carbon Neutral for its corporate emissions by 2030.

Since Council are aiming for carbon neutrality before 2050, this sees the City of Unley score 'Advanced' for the Greenhouse Gas Emissions Reduction indicator (see Table 13).

Table 13: The City of Unley's indicator score for Greenhouse Gas Emissions Reduction

Level (Score)	Indicator Description
<b>No data</b>	No publicly available greenhouse gas emissions documents were found (includes core governance documents).
<b>None (0)</b>	No consideration to reduce greenhouse gas emissions was found in any of the core governance documents OR displayed on Council's website. Council does not have a climate change target.
<b>Basic (1)</b>	A commitment or consideration to reduce GHG emissions is generally mentioned (either in GHG emissions documents, other core governance documents OR displayed on Council's website). Climate change target established to 2025 only.
<b>Intermediate (2)</b>	Climate change target established to 2030 (or one other single date) but minimal information on existing greenhouse gas emissions. No target for carbon neutrality.
<b>High (3)</b>	Climate change target established out 2050 but no target for carbon neutrality. Information on Council's current/ historical greenhouse gas emissions is provided.
<b>Advanced (4)</b>	Climate change target and aim for carbon neutrality by or before 2050.

### *Specific recommendations for quantitative assessment*

The Project Team recommend the following as a first step for the City of Unley to maintain an 'Advanced' score in the Greenhouse Gas Emissions Reduction indicator:

Council has received an 'Advanced' score for this indicator. Achieving this score sees Council in the top fraction of Australian local governments for this indicator and places it in a position to share its journey with other local governments seeking to improve their consideration of climate change. To ensure that this indicator maintains this level it will be important to monitor any new national and international targets (e.g. bringing forward carbon neutrality date). It will also be important to ensure that Council maintains sufficient staff capacity and resources to maintain their score for this indicator.

## **4.2.9 Indicator 8: Risk Management**

### *Justification for this indicator*

The Risk Management indicator assesses the extent to which climate change is embedded into Council's traditional risk management policies or strategies. While complementary, it is different from the information captured in Indicator 3: Public Risk Disclosure by taking a more high-level approach to risk management.

Climate change is a complex issue that will exacerbate existing risks and present new ones. Some direction that mandates how climate change risk is identified and disclosed will greatly improve Council's adaptation planning. If a local government does not know what is at risk and the consequences of those risks, then they are unlikely to implement adaptation actions.

### *Staff survey results*

In the online survey, 20 staff members (27%) believe that misunderstood risks are barriers to Council's ability to plan for climate change. Nevertheless, 29% of respondents (21 staff members) recognised that effective risk management practices would better enable the City of Unley to plan for climate change.

### *Quantitative assessment results*

The Project Team reviewed the Risk Management Policy 2020 for this indicator, however, there was no mention of climate change found in the policy. For this reason, the City of Unley scored 'None' for the Risk Management indicator (see Table 14).



Table 14: The City of Unley's indicator score for Risk Management

Level (Score)	Indicator Description
<b>No data</b>	No publicly available risk management documents <sup>1</sup> were found.
<b>None (0)</b>	No consideration of climate change (or associated keywords) in the risk management documents.
<b>Basic (1)</b>	General statements about climate change (e.g. in the introduction) OR includes other keywords associated with managing climate change in a general context (e.g. greenhouse gas emissions).
<b>Intermediate (2)</b>	Prescribed responses <sup>1</sup> / guidance for one climate change issue <sup>1</sup> (e.g. bushfire) AND/OR one climate change risk <sup>1</sup> (e.g. infrastructure risk) only.
<b>High (3)</b>	Detailed inclusion of climate change (more than one climate change issue AND/OR climate change risk), but is limited to responses to direct impacts <sup>1</sup> of climate change.
<b>Advanced (4)</b>	Climate change issues AND/OR climate change risks should be considered in all risk decision-making. Must include responses to indirect impacts <sup>1</sup> of climate change.

<sup>1</sup> See Appendix D for definitions of documents, prescribed responses, climate change issues, climate change risks, and direct and indirect impacts

### *Specific recommendations for quantitative assessment*

The Project Team recommend the following as a first step for the City of Unley to transition from 'None' to 'Basic' in the Risk Management indicator:

To increase the score for this indicator (to 'Basic') requires minimal time and resourcing. Review the risk management policy as soon as possible and include climate change to achieve a 'Basic' score for this indicator. Examples of wording for the policy include: "Council recognises that climate change may exacerbate some risks and/or present new risks". Treatment options include undertaking scoping risk studies and improving Council's consideration of climate change in its core governance documents.

## 4.2.10 Indicator 9: Adaptation Planning

### *Justification for this indicator*

A Climate Change Adaptation Plan helps councils implement a staged process for adapting to climate change. Good practice adaptation plans also identify the actions required for specific risks and has mechanisms in place to respond to direct and indirect climate change risks. In particular, good practice adaptation planning helps to:

- clarify roles and responsibilities,
- identify prioritised activities and focus areas,
- allocate resourcing,
- identify triggers for action or change/review,
- establish monitoring and evaluation mechanisms, and
- effectively manage any maladaptation risks.

South Australia's Strategic Plan (recently repealed) specified "the development of regional climate change adaptation plans in all State Government regions by 2016" (Government of South Australia, 2012). This was supported by South Australia's adaptation framework, 'Prospering in Changing Climate: A Climate Change Adaptation Framework for South Australia' which:

*recognises that climate change and its economic, social and environmental impacts will vary across South Australia and therefore provides for the development of locally relevant adaptation responses across the 12 existing State Government regions. (Government of South Australia, 2012)*

### *Staff survey results*

In the online survey, 11 staff members acknowledged having trained for climate change adaptation (15% of respondents surveyed). There was some diversity in where staff members received their adaptation training, with it being from other training (5), a university or TAFE subject (4), a university degree in climate change adaptation (2), a consultant (2), and peak body training package (2). Interestingly, 78% of respondents (54 staff members) believe that case studies in effective adaptation planning, strategies and implementation would be very helpful in adapting to climate change impacts.

### *Quantitative assessment results*

The Project Team identified two corporate documents which align with the Adaptation Planning indicator. These are the Resilient East Regional Climate Change Adaptation Plan 2016 and the Environmental Sustainability Strategy 2016-2020.

In the Environmental Sustainability Strategy, Council outlines five key themes for achieving their goal of creating a green and sustainable City. Climate change is recognised in two of these themes, 'Resilient Unley' and 'Energywise Unley'. This strategy provides both Council and communities targets for sustainability which seek to improve resilience to climate change and improve energy efficiency (thus reducing greenhouse gas emissions). This sees Council's tentative score increase to an 'Intermediate' for this indicator.

The Resilient East Regional Climate Change Adaptation Plan is Council's regional climate change adaptation plan which aims to provide a coordinated and collaborative response to climate change across the Eastern Region. The plan achieves these goals by identifying priority adaptation actions that will respond to the challenges and opportunities presented by a changing climate (Resilient East, 2016). As a result, the City of Unley achieved a 'High' for the Adaptation Planning indicator (see Table 15).

Table 15: The City of Unley's indicator score for Adaptation Planning

Level (Score)	Indicator Description
<b>No data</b>	No publicly available climate change adaptation strategy and/or action plan (or similar council-wide strategy/ action plan that drives adaptation planning) were found.
<b>None (0)</b>	No consideration of climate change (or associated keywords) in the climate change adaptation strategy and/or action plan.
<b>Basic (1)</b>	Focussed on one specific climate change issue AND/OR one council function with only summary statements for adaptation provided (not whole of Council).
<b>Intermediate (2)</b>	Summary statements for more than one climate change issue AND/OR council function provided but only for Council activities (not community). Time frames for adaptation actions also allocated.
<b>High (3)</b>	Detailed responses for adaptation actions for both the Council and community. Does not have all the attributes listed in the 'Advanced' score level.
<b>Advanced (4)</b>	A council adaptation strategy and/or action plan exists. It must include ALL of the following: key performance indicators, identified roles and responsibilities, the timing for delivery, linked to governance (mainstreaming), includes information from the community, and other key stakeholders.

<sup>1</sup> See Appendix D for definitions of climate change issues and council functions

\* If a regional document is searched then a localised adjustment is applied for coastal hazards. This may mean that a coastal council may score differently to an inland council for the same regional plan.

### *Specific recommendations for quantitative assessment*

The Project Team recommend the following as a first step for the City of Unley to transition from 'High' to 'Advanced' in the Adaptation Planning indicator:

This recommendation focusses on the need for a Council climate change adaptation strategy (or similar) as a local instrument (not just regional). A detailed local plan ensures ownership and can better align with internal governance and reporting. Ensure that a comprehensive Council adaptation strategy and/or action plan exists (for Council and the community). As a minimum include all of the following: key performance indicators, identified roles and responsibilities, the timing for delivery, linked to governance (mainstreaming), includes information from the community, and other key stakeholders. There will be an initial outlay of resources required to achieve this level of adaptation planning (e.g. undertake climate change risk assessments, quantify the number of Council assets exposed to risk, cost and prioritise adaptation actions, and assign roles and responsibilities).

### *Findings from the face-to-face meetings*

Many of the staff interviewed discussed the range of adaptation actions that they had carried out. Numerous references were made to Resilient East and associated projects.

## **4.2.11 Indicator 10: Climate Change Policy**

### *Justification for this indicator*

An internal climate change policy (or corporate standard) allows the organisation to place a climate change lens over all of a council's activities and use the existing system to drive adaptation. It can

allow for the consistent application of standards, agreed use of information sources and specific triggers for change. Staff members in local government have a range of viewpoints regarding the existence of climate change. Adopting a formal policy places limitations on the extent that personal viewpoints affect the professional judgments of people who may be sceptical or deny the existence of climate change.

A formal policy can also drive concerted action for staff members who are complacent regarding the effects of climate change. There is evidence to suggest that the creation of a policy has helped other local governments to affect change. This has been an effective trigger for change in other local government' such as Kingborough Council (TAS), Mackay Regional Council (QLD) and Whitsunday Regional Council (QLD).

### *Staff survey results*

The survey shows that 49 staff members (72%) believe that internal policies which direct action on climate change (e.g. a climate change policy) are very helpful in adapting to climate change impacts.

### *Quantitative assessment results*

The Project Team reviewed the Environmental Policy 2019 for this indicator. The policy aims to strengthen the City of Unley's resilience to climate change by providing leadership to their community. It includes two objectives that consider climate change, these are:

- "Council will continue to endeavour to encourage alternative and renewable energy use to reduce its carbon footprint.
- Council will continue to deliver on the Resilient East adaptation plan building resilience to the challenges of climate change" (City of Unley, 2019)

Since Council are yet to develop a dedicated climate change policy, this sees the City of Unley score 'Intermediate' for the Climate Change Policy indicator (see Table 16).

Table 16: The City of Unley's indicator score for Climate Change Policy

Level (Score)	Indicator Description
<b>No data</b>	No publicly available (council endorsed) climate change policy was found. This includes an environment/ sustainability policy.
<b>None (0)</b>	No consideration of climate change (or associated keywords) in the climate change policy OR environment/ sustainability policy.
<b>Basic (1)</b>	Climate change is considered in either a climate change policy OR environment/ sustainability policy. There are prescribed responses/ guidance for one climate change issue <sup>1</sup> (e.g. sea level rise) AND/OR one council function <sup>1</sup> (e.g. land use planning) only.
<b>Intermediate (2)</b>	Climate change is considered in either a climate change policy OR environment/ sustainability policy. Detailed inclusion of climate change, but is limited to two climate change issues (e.g. bushfire) AND/OR two council functions (e.g. land use planning).
<b>High (3)</b>	A specific climate change policy exists and considers numerous climate change issues. Must also reflect the latest science - most recent IPCC assessment report from the date of publication. Does not have all the attributes listed in the 'Advanced' score level.
<b>Advanced (4)</b>	A comprehensive climate change policy exists. It must include ALL of the following: key performance indicators, identified roles and responsibilities, the timing for delivery, linked to governance (mainstreaming), community and/or stakeholder engagement.

<sup>1</sup> See Appendix D for definitions of prescribed responses, climate change issues and council functions

### *Specific recommendations for quantitative assessment*

The Project Team recommend the following as a first step for the City of Unley to transition from 'Intermediate' to 'High' in the Climate Change Policy indicator:

A climate change policy will help ensure Council's method for adapting to climate change is consistent and robust. If Council is to implement a climate change policy, then it should include all of the following: specific IPCC climate change scenarios it is aligning to (preferably RCP 8.5 as a minimum), identified roles and responsibilities, timing for delivery, triggers for review (e.g. within 6 months of each IPCC assessment report), activities for improving governance scores, (mainstreaming), and commitment to community and/or stakeholder engagement. The most cost-effective approach to this would be to glean information from other councils in South Australia or Australia who have participated in an Informed.City™ climate change adaptation governance assessment and have an advanced climate change policy.

### *Findings from the face-to-face meetings*

Some participants at the meetings stated that they believed a specific climate change policy would help 'join the dots' and ensure that climate change was being considered in a consistent way.

## 4.3 Results and Recommendations for Qualitative Assessment

The results for the qualitative assessment focus on the seven indicators that are identified as key drivers for implementing climate change adaptation governance. The analysis of each indicator will discuss the importance of the indicator, staff survey results, qualitative assessment results, and specific recommendations.

### 4.3.1 Indicator 11: Climate Risk Assessments

#### *Justification for this indicator*

Climate change risk assessments provide organisations with the critical information they need to understand the impacts that climate change may present. Risk assessments take many forms, although in Australia most of them tend to follow the ISO Risk Assessment Framework AS31000.

Understanding specific risks is a complex task, and undertaking detailed risk assessments can be expensive, time-consuming and involve numerous experts and stakeholders. Because of these limitations, many local governments have opted for scoping or high-level risk assessments. Scoping risk assessments involve a smaller number of climate change scenarios and local governments are usually focussed on Council's corporate risks (as opposed to also understanding environmental, social and economic risks).

Although scoping assessments are always useful for quickly identifying general risks and areas that require further investigation, their ability to accurately reflect the level of risk is limited by the investment in time and resources that go into them.

#### *Staff survey results*

In the online survey, respondents were asked if their department uses climate change risk assessments to inform decision making (see Figure 8). The results show that 50% of staff members do not use climate change risk assessments (39 staff members). However, 20 staff members (26%) identified using risk assessments only sometimes and another three staff members (4%) stated that their department uses climate change risk assessments regularly. The gap between good governance for climate change and staff inclusion in their decision making may reflect the need for improved guidance. This is supported by the survey results that show there are 40 staff members (61%) who believe that guidance on risk assessment and reducing risk exposure for councils would be very helpful in adapting to climate change impacts.

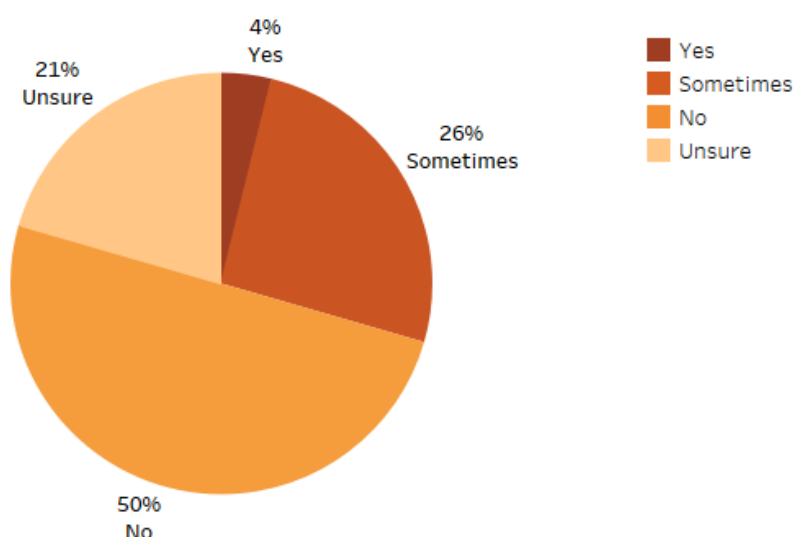


Figure 8: Use of climate change risk assessments in the City of Unley departments

### *Qualitative assessment results*

The participants at the interviews presented numerous examples of climate-related risks. Most of the risks discussed were associated with extreme rainfall (where 20mm an hour causes problems) and extreme heat. Cascading risks associated with climate change (e.g. workplace productivity or legal risk from branch falls) were also presented.

Council has carried out some specific assessments. For example, one of the projects explored how heatwaves into the future may affect workplace productivity.

### *Specific recommendations of the qualitative assessment*

- 11.1 Undertake a detailed climate change risk assessment that explores and quantifies climate-related physical and transition risk.
- 11.2 Identify the process by which climate risk assessment results can feed into the Strategic Risk Register.
- 11.3 Agree on a process by which high priority projects, especially new large-scale infrastructure projects or developments, are subject to climate risk assessments prior to approval.

## 4.3.2 Indicator 12: Climate Legal Risk

### *Justification for this indicator*

Climate change is emerging more and more as a climate legal risk problem that governments, organisations and the community are attempting to understand, avoid and manage. The nature of climate legal risk for local governments is a minefield that can manifest itself in many ways.

There has been a marked increase in legislation associated with managing climate change, - especially in coastal regions (e.g. sea-level rise and land use planning). How a council interprets new

regulations can become a point of conflict, especially if there is the potential for legislation to affect the value of property or the rights to development.

The climate legal risk facing local governments is not just limited to land use planning decisions. The ramifications of ignoring climate legal risk can include:

- Risk of increased planning challenges and negligence. (Baker-Jones, Burton, Bell, & Chang Seng, 2013)
- Risk of criminal negligence if a person is harmed due to a council's action (or inaction).
- Risk of unplanned financial expenditure defending legal challenges. There is anecdotal evidence of councils in Australia spending millions of dollars on single lawsuits.
- Risks associated with releasing or withholding information about projected climate change risks. (Productivity Commission, 2012)

All the above have the potential to have a considerable negative impact on a council's financial sustainability. There is the very real potential that just one lawsuit could erode a council's financial resilience.

### *Staff survey results*

In the online survey, seven staff members (10%) stated that they see apprehension about legal risk as a barrier to implementation of climate change adaptation actions (e.g. legal risk associated with undertaking climate change adaptation). On the other hand, staff members acknowledged that a better understanding of the legal risks would help to incorporate climate change in their work, with respondents identifying 'duty of care responsibilities' (23 staff members, 32%) and 'resolved liability concerns' (8 staff members, 11%) as enablers to climate change adaptation.

### *Qualitative assessment results*

Some of the participants noted that branch falling (as a result of heat stress and/or drought) have been considered by Council as a legal risk. Council staff also recognised the potential legal risk associated with outside events and workplace safety during extreme heat days. None of the participants interviewed were aware of any climate-related legal cases which involved Council.

### *Specific recommendations of the qualitative assessment*

- 12.1 Identify priority areas for climate legal risk advice, especially about the relative role of Council compared to residents, businesses, and the State Government.
- 12.2 Ensure that legal risks associated with climate change are included in the risk register, until well managed.

## **4.3.3 Indicator 13: Staff Capacity and Resource Allocation**

### *Justification for this indicator*

Monitoring Council's resource and staffing commitment to climate change is critical to supporting ongoing climate change adaptation. If a council only relies on external consultants for adaptation research and responses, then it is doing very little to support the improved internal adaptive



capacity of its organisation. Furthermore, without a permanent adequate annual budget, a council will only be able to undertake adaptation actions in an ad hoc manner. The overarching goal for adaptation should be to mainstream consideration of climate change across all council activities.

### *Staff survey results*

In the online survey, 29 staff members (40%) identified a lack of training and learning opportunities for staff as a barrier to the implementation of climate change adaptation actions. Other barriers identified include limited staff capacity - number of staff, and staff capability - skills (26 staff members each, 36%). On the other hand, assigned staff responsibilities were recognised as an enabler of climate change adaptation action by 33 staff members (46%). Respondents also identified other enablers including training opportunities (32 staff members, 44%), staff champions (31 staff members, 43%), and peer-to-peer learning (29 staff members, 40%). Also, 48% of respondents (32 staff members) believe that capacity building is very helpful in adapting to climate change impacts.

### *Qualitative assessment results*

Staff capacity was noted by some as an area for improvement. While participants stated that they had a basic understanding of the issues, it was noted that ongoing and further (targeted) staff training would be beneficial.

### *Specific recommendations of the qualitative assessment*

- 13.1 Review opportunities to embed capacity building into existing staff training, such as new employee inductions.
- 13.2 Develop a capacity-building program to continue to raise staff awareness about climate change impacts and how they can be managed within different Council functions. This should be an ongoing program similar to how workplace health and safety training is conducted across the organisation.

## **4.3.4 Indicator 14: Community/ Stakeholder Engagement**

### *Justification for this indicator*

Connecting to the community is a core component for developing a safer, more resilient community. It is the local community that will bear the brunt of climate change impacts as they directly or indirectly contribute towards adaptation efforts (e.g. through increased insurance costs, taxes, and voluntary community actions). Given the fact that climate change is a contentious issue and one that is open to misinterpretation and misinformation, there is a strong imperative for Council to ensure that the community is appropriately informed of the issue.

As well as being informed, it is also essential that the community become active participants in the climate change adaptation process. According to Gardner et al. (2009), there are several considerable benefits associated with actively engaging the wider community in the decision-making process. These include:

- Facilitating clear communication and exchange of information, with all parties involved developing a more thorough understanding of issues, potential solutions and alternative perspectives.
- Improving the effectiveness of decision-making processes, by gaining better insight into potential equitable outcomes, solutions to conflicts and effective planning.
- Strengthening the resources of involved groups, by increasing awareness, confidence, skills and co-operation.
- Improving the sustainability of any initiatives, by increasing the quality of decisions and their acceptance amongst stakeholders. (Gardner, Dowd, Mason, & Ashworth, 2009)

Councils need to commence a dialogue with the private sector and better understand how businesses and local governments can learn from each other's understanding of the risks and approaches to adaptation.

### *Staff survey results*

In the online survey, 16 staff members (22%) agreed that climate change not being seen as a priority for the community is a barrier to the implementation of climate change adaptation actions. The results also highlighted the importance of the local community – with 75% of respondents (54 staff members) stating that having an active and engaged community is a core enabler for improving Council's ability to plan for climate change. This enabler was the most popular, with participants ranking it first (see Figure 9). When asked about the helpfulness of adaptation tools, 46 staff members (69%) believe that education and community engagement tools and strategies would be very helpful in adapting to climate change impacts.

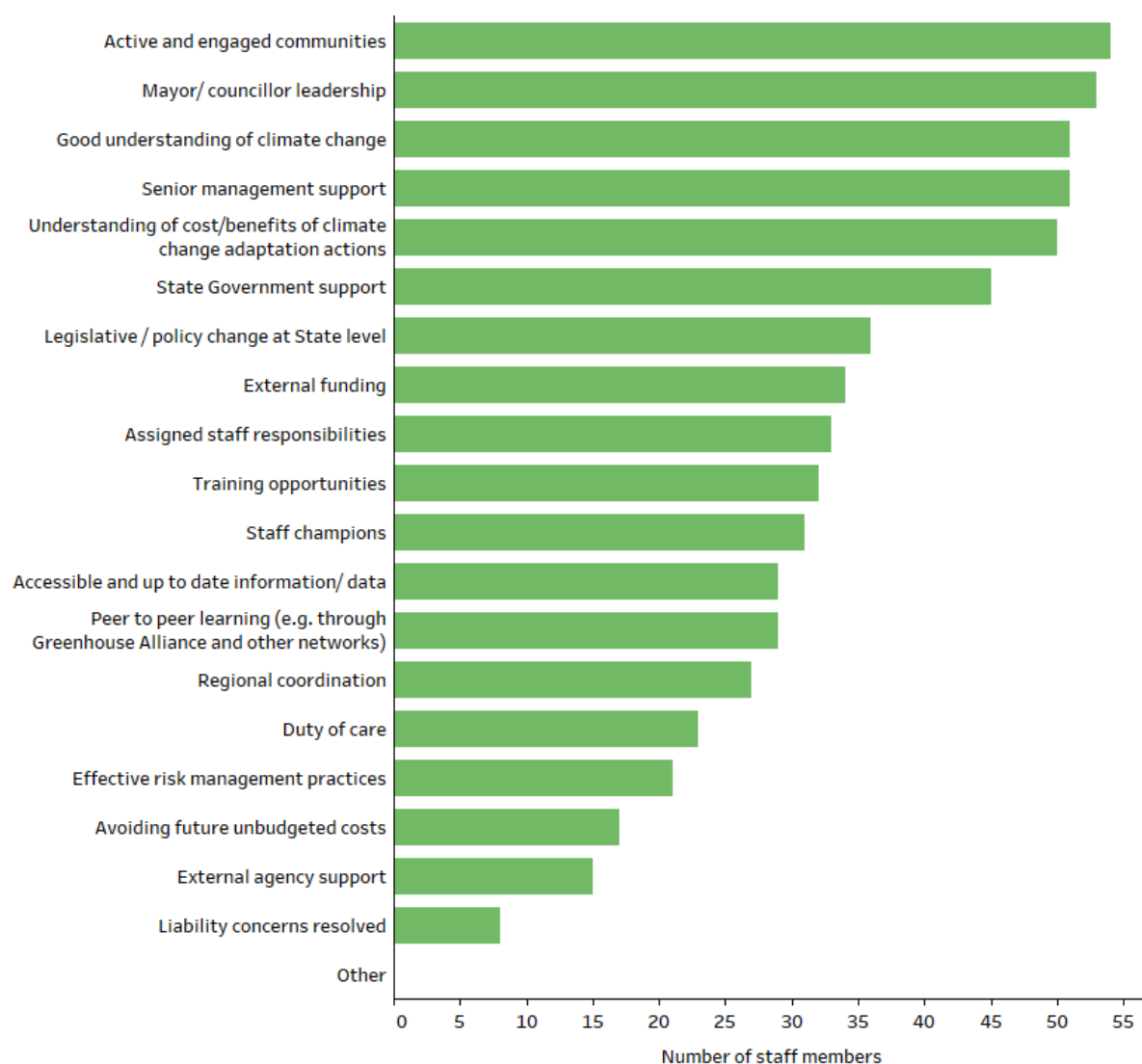


Figure 9: Enablers contributing to the City of Unley's ability to plan for climate change

## Qualitative assessment results

Some of the interview participants stated that there were a handful of community groups that focus on climate change. Council has not developed a community/ stakeholder engagement plan for climate-related risk. Council has delivered some community outreach for climate change (e.g. Keeping Cool, Who Gives a Root museum exhibition).

## Specific recommendations of the qualitative assessment

- 14.1 Develop a Climate Change Stakeholder Engagement Strategy, which identifies engagement objectives, target audiences, engagement channels, a schedule of activities, and KPIs. This should include issue-specific engagement (e.g. heatwave risks) as well as general awareness-raising.

### 4.3.5 Indicator 15: Institutional/ Intergovernmental Relationships

#### *Justification for this indicator*

Climate change is a trans-boundary issue. Adaptation action (or inaction) by one stakeholder can both improve and erode the resilience of another. Furthermore, economies of scale and collectively sharing knowledge can improve adaptation governance. The actions by a range of organisations have the potential to affect councils' resilience. An important part of the institutional arrangements and engagement with external stakeholders is the clarification of roles and responsibilities that are associated with climate change adaptation.

#### *Staff survey results*

In the online survey, 14 staff members (19%) recognised that dealing with other government agencies is a barrier hindering Council's ability to plan for climate change. Conversely, respondents also identified regional coordination (27 staff members, 38%) and external agency support (15 staff members, 21%) as enablers to the implementation of climate change adaptation actions. Interestingly, 53 staff members (74%) from the City of Unley identified Mayor/Councillor leadership as a core enabler contributing to Council's ability to plan for climate change.

#### *Qualitative assessment results*

Council is an active member of the Resilient East group, which is its main area for collaboration on the issue of climate change. Some of the participants expressed concern about how the State Government's shift into a single planning scheme may limited Council's ability to respond to locally-specific climate change issues.

#### *Specific recommendations of the qualitative assessment*

- 15.1 Seek to clarify the role of Council as compared with the State Government about managing climate risk.
- 15.2 Work with banks to better understand broader market risk and how they are considering the effects of climate change. It would be in the City's interest to identify how banks identify risk and what they see determines resilience at a City level. This may help City of Unley understand the risk to rateable income due to property value risk. Where possible the City of Unley should identify opportunities to incorporate risk definitions used by the banking sector into its risk management approach.

### 4.3.6 Indicator 16: Climate Change Information

#### *Justification for this indicator*

Understanding the impacts of climate change requires access to climate change information. While institutions such Commonwealth Scientific and Industrial Research Organisation (CSIRO) and universities freely provide valuable publications on climate change risk and adaptation, obtaining climate change projections (e.g. from climate change models) is often a time consuming and expensive task, or one that can misalign with Council's timing needs. Council can obtain relevant

climate change information from several sources including government databases, university/ institutional relationships, desktop research, consultants and software (SimCLIM).

Understanding the information that goes into climate change models greatly helps the user understand the uncertainty associated with the climate modelling process. The differing greenhouse gas emissions scenarios, models chosen, downscaling and climate sensitivity can all yield differing results. This has the potential to confuse end-users at best and at worst lead to poorly informed decision making.

### *Staff survey results*

The results also show that the City of Unley staff members recognise the role information can play as barriers and enablers to the implementation of climate change adaptation actions. There were 21 staff members (35%) who identified a lack of information/ data as a barrier to climate change adaptation actions and 24 staff members (42%) who considered access to accessible and up-to-date information/data as an enabler. This supports respondents' preference for support tools for adapting to climate change impacts since 64% of respondents (38 staff members) believe that the provision of consistent, high-quality information, knowledge and tools about climate change is very helpful in adapting to climate change impacts. Similarly, localised climate data and information was found to be very helpful for 30 staff members (56%).

Respondents of the online survey identified the internet, traditional media, and social media as being the top three information sources commonly used by staff members to understand climate change impacts (see Figure 10). There are also a range of other information sources which Council staff members use including State Government, someone in Council, and CSIRO. It should be noted that eight staff members (14%) acknowledged that they do not look for information about climate change.

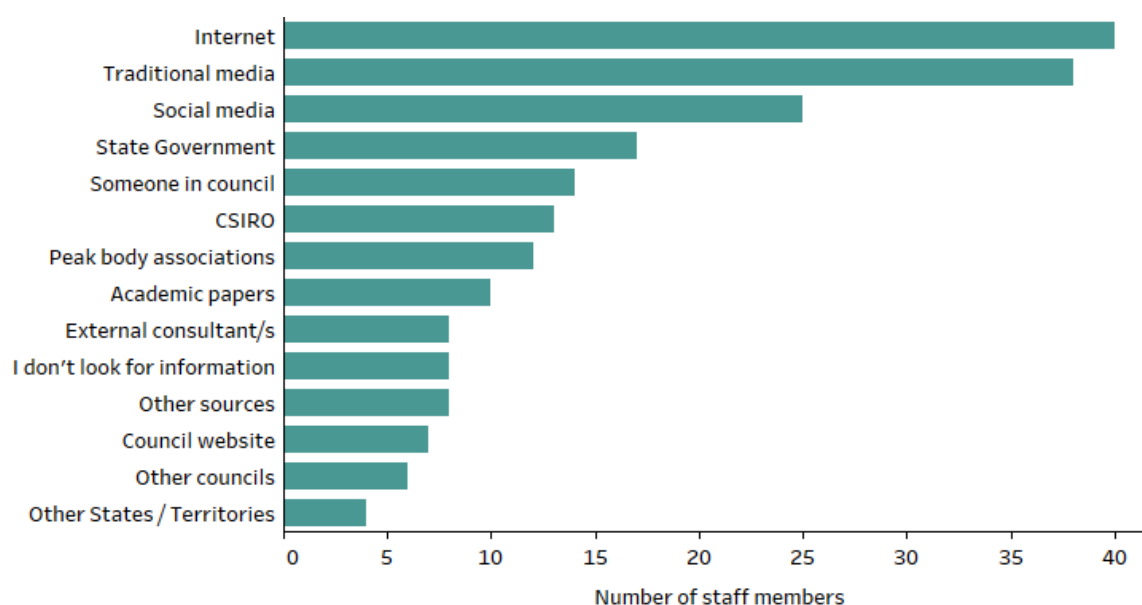


Figure 10: Information sources commonly used by the City of Unley staff members to understand climate change impacts

Staff members were also asked what types of information would help them to better incorporate climate change into their job. The two most popular responses were knowing the 'anticipated

impacts for my department' (34 staff members, 59%) and 'knowing what to actually do' (31 staff members, 53%). There were also 29 staff members (50%) who agreed that local climate projections/forecasts would help in the implementation of climate change actions (see Table 17).

Table 17: Types of information that would help the City of Unley staff members incorporate climate change into their job

	Number of staff members	% of staff members
The anticipated impacts for my department	34	59%
Knowing what to actually do	31	53%
Local climate projections / forecasts	29	50%
Knowing who should be managing the issue in Council	28	48%
Understanding what other councils are doing	25	43%
Knowing who to turn to for help	19	33%
Understanding the regulatory requirements	19	33%
Knowing which level of government should be responsible for action	18	31%
Regional climate projections / forecasts	18	31%
Knowing when we should start implementing adaptation actions	17	29%
Understanding legal implications	15	26%
Understanding potential trade-offs	11	19%
Not sure	7	12%
None	2	3%
Other	1	2%

### *Qualitative assessment results*

The interview participants stated that they obtained climate change information from a range of sources. Resilient East was noted numerous times as a source of information. For flood information, the relevant staff noted that they obtained climate change perturbation for rainfall from the Australian Rainfall and Runoff (AR&R). It was noted by some staff that they get information on road maintenance from the IPWEA climate change tool.

Council staff also stated that they are exploring the use of the Internet of Things (IoT) to collect data (e.g. Heywood Park). It was noted by some that they thought the application of IoT for climate change mitigation and adaptation information would be able to provide valuable intelligence.

### *Specific recommendations of the qualitative assessment*

- 16.1 Develop a register of information requirements needed to inform key decisions that will be impacted by climate change to identify where information gaps exist. This should be done as part of implementing a monitoring and evaluation plan and directed by a Climate Change Policy.

### 4.3.7 Indicator 17: Information Systems

#### *Justification for this indicator*

As the information technology age continues to shape our society it comes as no surprise to see that information services are playing an increasing role in supporting council operations and providing a new interface with the community it serves.

Information communication technology (ICT) networks such as social media platforms, websites and information portals have the potential to contribute significantly to Council's climate change adaptation ambitions. For example, ICT systems can be used for the monitoring and control of critical infrastructure and assets. According to a research report by Arup et al. (2013), 'improved monitoring and control capabilities for all infrastructure can enhance resilience by providing detailed and rapid information to utility managers and city leaders regarding operating conditions and performance'.

Furthermore, during extreme events, the ICT network are emerging as a natural agglomeration for concerned community members seeking information when disaster strikes. For example, Brisbane City Council maintains a social media hub (based on the social media aggregation site Stackla). This site became a main focal point for community engagement with Brisbane City Council and between residents who were able to upload information about the risks in real-time (Stackla, 2013).

Managing social media, however, requires constant attention as poor management of social media during extreme events can also cause confusion and do more harm than good.

#### *Qualitative assessment results*

Council's website was analysed for climate change and its integration with other information systems. The website includes working connections to four social media platforms including Facebook, Twitter, Instagram, LinkedIn and YouTube. The website explains that Council's response to climate change is through three key focus areas: energy, transport and waste management. The City of Unley has also established an online community hub called 'Your Say Unley'. This website is an online engagement hub in which the community can discuss Council projects, initiatives, and activities and actively contribute to Council's decision making.

The City of Unley has a Facebook account with 6,251 'likes' and 1.482 people following the page (as of May 2021). Council has also been a member of Twitter for 11 years and 4 months (joined in December 2010) and in that time have gained 3,774 followers. The City of Unley has been using social media to engage with the public on climate change for the last 10 years. In 2011, Council encouraged the community to attend climate change seminars. Since then, Council's climate change posts have focussed on Living Smart Unley, National Science Week and highlights from Council meetings. More recently, the City of Unley has engaged the community about their Draft Climate and Energy Plan and Draft Annual Plan and Budget. These results show that the City of Unley has been successfully communicating with the community about climate change issues for a number of years.

#### *Specific recommendations of the qualitative assessment*

- 17.1 Utilise Council's Smart City initiative to collate and analyse risk information and explore the potential role of GigCity as a platform for improved information systems.
- 17.2 Sponsor GovHacks and local hackathons with the focus being solely on climate change adaptation.

- 17.3 Provide an annual publication of data collected in Council's accounting system on post extreme event/ disaster clean-up costs/ resource use. This will assist with communicating impacts to the community over time.

## 5 Conclusions

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The City of Unley has a sophisticated understanding of climate change. As of May 2021, the City of Unley recorded a higher assessment score than 341 Australian councils to have been assessed through the Informed.City™ climate change governance assessment. Council achieved a top score of 'Advanced' in Strategic Planning, Public Risk Disclosure, Asset Management and Greenhouse Gas Emissions Reduction.

Council also scored 'High' in Financial Management and Adaptation Planning and achieved an 'Intermediate' score for three other indicators (Land Use Planning, Emergency Management and Climate Change Policy). It is worth highlighting that only one indicator (Risk Management) did not achieve a score.

The key climate-related risks identified during the interviews were predominantly physical. These include risks associated with heatwaves, water availability and stormwater flood risk. Council staff had a strong recognition that, if not managed effectively, climate change has the potential to pose a significant financial strain on the organisation.

There is no doubt that the City of Unley has a highly skilled staff base and are well-placed to maintain and improve on its national leadership regarding climate change adaptation governance. There is also a unique opportunity to use the Smart City initiative to help analyse, monitor, and report on climate-related risks.



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## 7 Appendices

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### Appendix A: Questionnaire from staff governance survey

#### *Introduction*

The City of Unley are participating in a climate change governance assessment. This will help Council determine how they best respond to, or adapt, to climate change and manage current and future climate risks.

As part of the project we have prepared a very short (7 minutes max) survey, open to all staff. By agreeing to participate in the survey we will be able to generate more results that are tailored specifically for your Council and your department. The survey is anonymous.

Thanks for your time and if you have any questions please contact me directly on the details below.

Kindest regards,

Donovan Burton

[donovan@climateplanning.com.au](mailto:donovan@climateplanning.com.au)

#### *Respondent Information*

**1. Which of the following best fits with YOUR department / job description? (multiple answers can be checked)**

- |   |  |
|---|--|
| <input type="checkbox"/> Corporate Governance / Office of the CEO | <input type="checkbox"/> Water and Waste                 |
| <input type="checkbox"/> Customer Service                         | <input type="checkbox"/> Works                           |
| <input type="checkbox"/> Workplace Health and Safety              | <input type="checkbox"/> Environment / Sustainability    |
| <input type="checkbox"/> Human Resources                          | <input type="checkbox"/> Disaster / Emergency Management |
| <input type="checkbox"/> Finance                                  | <input type="checkbox"/> Community and Recreation        |
| <input type="checkbox"/> Assets                                   | <input type="checkbox"/> Arts & Heritage                 |
| <input type="checkbox"/> Information Technology (IT) Services     | <input type="checkbox"/> Fleet                           |
| <input type="checkbox"/> Geographic Information Systems (GIS)     | <input type="checkbox"/> Procurement                     |
| <input type="checkbox"/> Communications, Media and Marketing      | <input type="checkbox"/> Casual (no specific department) |
| <input type="checkbox"/> Planning and Development                 | <input type="checkbox"/> Other (please specify)          |
| <input type="checkbox"/> Engineering / Infrastructure             |  |

**2. Please rate YOUR understanding of climate change impacts and adaptation for your department/ job description (only one answer can be checked)**

- ☐ I am not sure of my understanding
- ☐ I have no understanding
- ☐ My understanding is limited (I would need some support incorporating climate change adaptation into my tasks)
- ☐ I could comfortably incorporate/ consider climate change adaptation into any of my tasks

### *Climate Change Adaptation in your Department*

3. How serious an issue do YOU think climate change is for your department? (only one answer can be checked)

- ☐ Unsure
- ☐ No issue
- ☐ Minor issue
- ☐ Somewhat - but not urgent
- ☐ Important issue that needs attention now

4. Does YOUR department use climate change risk assessments to inform decision making? (only one answer can be checked)

- ☐ Yes
- ☐ Sometimes
- ☐ No
- ☐ Unsure

### *Climate Change Adaptation in your Council*

5. In YOUR opinion, what is your Council's level of preparedness for responding to climate change impacts? (only one answer can be checked)

- ☐ Not sure
- ☐ Not prepared at all
- ☐ Not very prepared
- ☐ Fairly prepared
- ☐ Very prepared

6. When do YOU think climate change will impact your Council's operations and procedures? (only one answer can be checked)

- ☐ Now - It has already had an impact
- ☐ Short term - In the next year
- ☐ Medium term - Within 15 years
- ☐ Long term - by 2050
- ☐ Very long term - by 2070 - 2100
- ☐ Never
- ☐ Not sure

## *Barriers to Council Adaptation*

**7. In your opinion, which of these BARRIERS currently hinder your Council's ability to plan for climate change? (multiple answers can be checked)**

- |  |  |
|--|--|
| <input type="checkbox"/> Limited assigned funding                                    | <input type="checkbox"/> Lack of information /data                             |
| <input type="checkbox"/> Limited staff capacity (number of)                          | <input type="checkbox"/> Uncertain where to start                              |
| <input type="checkbox"/> Limited staff capability (skills)                           | <input type="checkbox"/> Dealing with other government agencies                |
| <input type="checkbox"/> Confusing/changing policy at different levels of government | <input type="checkbox"/> Apprehensive about legal risk                         |
| <input type="checkbox"/> Lack of political will                                      | <input type="checkbox"/> Lack of training and learning opportunities for staff |
| <input type="checkbox"/> Not seen as a priority by the community                     | <input type="checkbox"/> Not seen by management / executive as a priority      |
| <input type="checkbox"/> Limitations in legislation and regulation                   | <input type="checkbox"/> Risks are not well understood                         |
| <input type="checkbox"/> Uncertainty of the role of Local Government                 | <input type="checkbox"/> Other (please specify)                                |
| <input type="checkbox"/> Lack of organisational support                              | _____  |

**8. In your opinion, which of these ENABLERS contribute to your Council's ability to plan for climate change? (multiple answers can be checked)**

- |  |  |
|--|--|
| <input type="checkbox"/> Senior management support   | <input type="checkbox"/> External agency support   |
| <input type="checkbox"/> Understanding of cost/benefits of climate change adaptation actions | <input type="checkbox"/> Peer to peer learning (e.g. through Greenhouse Alliance and other networks) |
| <input type="checkbox"/> Active and engaged communities                                      | <input type="checkbox"/> Training opportunities  |
| <input type="checkbox"/> Mayor/ Councillor leadership  | <input type="checkbox"/> Effective risk management practices   |
| <input type="checkbox"/> External funding  | <input type="checkbox"/> Good understanding of climate change  |
| <input type="checkbox"/> Assigned staff responsibilities                                     | <input type="checkbox"/> Accessible and up to date information/ data                                 |
| <input type="checkbox"/> Duty of care  | <input type="checkbox"/> Legislative / policy change at State level                                  |
| <input type="checkbox"/> Avoiding future unbudgeted costs                                    | <input type="checkbox"/> State Government support  |
| <input type="checkbox"/> Regional coordination   | <input type="checkbox"/> Other (please specify)  |
| <input type="checkbox"/> Liability concerns resolved   | _____  |
| <input type="checkbox"/> Staff champions   |  |

## Level of Climate Change Adaptation Support

### 9. How HELPFUL are the following types of support in adapting to climate change impacts?

	Not helpful	Fairly helpful	Very helpful	Not sure
Provision of consistent, high quality information, knowledge and tools about climate change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guidance on risk assessment and reducing risk exposure for councils	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Localised climate data and information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internal policies that direct action on climate change (e.g. a climate change policy)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Specific ongoing resource allocation for climate change projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
State government statutory planning support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Capacity building	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Case studies in effective adaptation planning, strategies and implementation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coordination with the South Australian Government effort to adapt to climate change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-statutory planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Education and community engagement tools and strategies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public statements of leadership and action from the State Government	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A climate change bridging organisation (e.g. A coordinating body for research, training, networking, guidelines etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Sourcing Climate Change Information

### 10. Where do YOU get your information about climate change impacts? (multiple answers can be checked)

- |  |   |
|--|---|
| <input type="checkbox"/> I don't look for information                    | <input type="checkbox"/> Other councils             |
| <input type="checkbox"/> Academic papers                                 | <input type="checkbox"/> External consultant/s      |
| <input type="checkbox"/> Traditional media (e.g. newspapers, news)       | <input type="checkbox"/> Peak body associations     |
| <input type="checkbox"/> Social media (e.g. Facebook, Twitter, LinkedIn) | <input type="checkbox"/> NCCARF                     |
| <input type="checkbox"/> Internet  | <input type="checkbox"/> CSIRO                      |
| <input type="checkbox"/> Council website                                 | <input type="checkbox"/> State Government           |
| <input type="checkbox"/> Someone in Council                              | <input type="checkbox"/> Other States / Territories |
|  | <input type="checkbox"/> Other (please specify)     |

**11. What type of information about climate change impacts would help YOU incorporate climate change into your job? (multiple answers can be checked)**

- ☐ None
  - ☐ Not sure
  - ☐ Local climate projections / forecasts
  - ☐ Regional climate projections / forecasts
  - ☐ The anticipated impacts for my department
  - ☐ Knowing when we should start implementing adaptation actions
  - ☐ Knowing what to actually do
  - ☐ Knowing who should be managing the issue in Council
  - ☐ Understanding legal implications
  - ☐ Understanding the regulatory requirements
  - ☐ Knowing which level of government should be responsible for action
  - ☐ Understanding potential trade-offs
  - ☐ Knowing who to turn to for help
  - ☐ Understanding what other councils are doing
  - ☐ Other (please specify)
- 

### *Climate Change Adaptation Training*

**12. Have YOU had any training for climate change adaptation? (multiple answers can be checked)**

- ☐ None
  - ☐ Yes - a university or TAFE subject
  - ☐ Yes - a university Degree / Masters / PhD in climate adaptation
  - ☐ Yes - a university diploma / certificate in climate adaptation
  - ☐ Yes - from a peak body training package (e.g. Planning Institute of Australia or Engineers Australia)
  - ☐ Yes - from a consultant
  - ☐ Yes - from the Enhanced Local Government Service Delivery Course (Australian Centre for Excellence in Local Government)
  - ☐ Other (please specify)
-

## Questions

13. Are there any other comments you would like to make about adapting to climate change in your Council?

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14. Would you like to be kept informed about the progress and outcomes of this project?

- ☐ No
- ☐ Yes (please type your email address)

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## Appendix B: List of keywords used for quantitative assessment

Theme	Definition/ Keywords
<b>Climate change</b>	Council documents were searched for keywords associated with climate change. These keywords include 'climate change', 'global warming' and 'climate variability'.
<b>Sea level rise*</b>	Council documents were searched for keywords associated with sea level rise. These keywords include 'sea level rise' and 'sea level change'.
<b>Adaptation</b>	Council documents were searched for keywords associated with adaptation. These keywords include 'adapt', 'adaptation', 'adaptive' and 'adaptability'.
<b>Greenhouse gas emissions</b>	Council documents were searched for keywords associated with greenhouse gas emissions. These keywords include 'greenhouse gas', 'GHG', 'carbon emission', 'carbon footprint', 'carbon neutral', 'carbon neutrality', and 'net zero'.

\* only relevant for coastal councils

## Appendix C: Questions used in the qualitative governance assessment

Consultants asked representatives of the City of Unley the following questions during face-to-face meetings for the qualitative governance assessment.

### *Indicator 11: Climate Risk Assessments*

1. What do you perceive as Council's key climate change risks?
2. Is Council undertaking any other climate change risk assessments?
  - a. If yes, can you elaborate?
3. Does Council have a risk register, if so can you provide us a copy?
  - a. If no, can you please search the document to check if climate change is considered and copy the relevant sections?

### *Indicator 12: Climate Legal Risk*

4. Has Council sought independent legal advice regarding specific climate change issues?
  - a. If so, for which issues?
5. Have your insurers asked you to provide any specific information about how you manage climate change risks?
6. Has Council had any litigation based on climate-related hazards (either direct or indirect impacts)? For example, extreme weather causing damage and death or sea wall causing injury or death.
7. In regard to land use planning, has Council refused any developments because of climate change risks?

8. In regard to land use planning, has Council had to go to court or a tribunal for any climate change and planning issues (e.g. related to development applications)?

### *Indicator 13: Staff Capacity and Resource Allocation*

9. Does Council have somebody specifically responsible for climate change adaptation (e.g. climate change adaptation officer)?
  - a. If so, what is their full-time equivalent (FTE)?
10. Does Council have any programs/ policies that mandate climate change training for staff?
11. Have staff have had any training in climate change adaptation?
12. Are there any instances where your staff have applied their skills to climate change adaptation activities or projects?
13. Is there a budget allocated for up-skilling staff in climate change adaptation?

### *Indicator 14: Community/ Stakeholder Engagement*

1. Does Council have a climate change communication strategy (both internally and externally)?
2. Does Council have Community Plan or Strategy?
  - a. If so, is climate change considered?
3. Has Council engaged the community on climate change issues?
  - a. If so, what methods of communication do you use to engage the community (e.g. project specific meetings, face-to-face, social media)?
  - b. Were the community receptive?
4. Does Council have any active community or business working groups for climate change that Council facilitates?

### *Indicator 15: Institutional/ Intergovernmental Relationships*

5. Is Council involved in any **local, regional and State working groups** for climate change (e.g. C-CAT, LGAQ project, Regional Organisation of Councils, local working group, utilities working group)?
  - a. How often do you meet?
  - b. What is the purpose of the working group (e.g. information sharing, political lobbying)?
  - c. Do you collaborate on projects?
  - d. Do you have MOUs and/or formal agreements?
6. Is Council involved in any **federal working groups** for climate change (e.g. NCCARF)?
  - a. How often do you meet?
  - b. What is the purpose of the working group (e.g. information sharing, political lobbying)?
  - c. Do you collaborate on projects?
  - d. Do you have MOUs and/or formal agreements?

### *Indicator 16: Climate Change Information*

7. What sources of climate change information does Council use to guide decision making on climate change?
8. What climate data do you base Council decisions on (e.g. IPCC fifth assessment report, BOM)?
9. What systems do you have in place to ensure the data is up-to-date?
10. Do you have an Open Data Strategy?
  - a. If so, is climate data considered?

### *Indicator 17: Information Systems*

11. Does Council have an active social media presence (e.g. Facebook, Twitter)?
12. Do Council's social media posts communicate or discuss climate change issues?
13. Does Council share its data with external online databases (e.g. data.gov.au)?
  - a. If so, how many datasets are available?
14. Does Council have a formal performance management system?
15. Does Council have any key performance indicators for managing climate change?
16. Does Council measure the number of properties exposed to certain risks?
17. Does Council measure how much each disaster costs for clean up?
18. Are there any other climate-related factors which Council measure in their performance management?
19. Do Council undertake any big data analytics for climate change issues (e.g. number of people tweeting about heatwaves, paying third party to analyse accommodation during heatwaves, analysing Facebook likes for climate-related postings)?
20. Has the management of climate change been included in any community projects (e.g. hack-a-thons)?
  - a. Please explain the projects and what the outcomes were?

## Appendix D: Key terminology used in the quantitative assessment

Terminology	Definition
<b>Climate change adaptation issues</b>	Issues related to climate change adaptation. They include the following: natural disasters, extreme weather, rainfall, heatwaves, sea level rise, bush fire, flooding, cyclones, storms, storm tide, erosion, drought, earthquake and landslide. These are only issues if they are specifically in the context of climate change (e.g. increased extreme rainfall intensity). This list only represents some of the climate change adaptation issues that can arise and are for indicative purposes only.
<b>Climate change mitigation issues</b>	Issues related to climate change mitigation. Examples of these may include emissions reduction, greenhouse gas emissions, carbon footprint, carbon emissions, carbon neutral, carbon neutrality, carbon sequestration, carbon dioxide (CO <sub>2</sub> ), carbon dioxide equivalent (CDE), CO <sub>2</sub> e, CO <sub>2</sub> eq, carbon capture and storage (CCS), energy efficiency, net zero, carbon credits, carbon price, carbon tax, Emissions Trading Scheme (ETS), Carbon Pollution Reduction Scheme (CPRS), Renewable Energy Target (RET), Representative Concentration Pathways (RCP), Emissions Reduction Unit (ERU). This list only represents some of the climate change mitigation issues that can arise and is for indicative purposes only.
<b>Climate change risks</b>	Types of risks associated with climate change. Examples of these may include infrastructure risk, policy risk, market and competitiveness risk, climate legal risk, environmental risk, community risk, political risk, economic risk, financial risk, insurance risk. This list only represents some of the climate change risks that can arise and is for indicative purposes only.
<b>Direct impacts (From acute and chronic physical impacts)</b>	Direct impacts are impacts that are directly associated with any of the climate change issues. Examples of direct climate change impacts include damage to assets from storm surge, loss of life as a result of increased heatwaves etc. This list only represents some of the direct impacts that can arise and is for indicative purposes only.
<b>Indirect impacts (From acute and chronic physical impacts)</b>	Indirect impacts are impacts that are an indirect result of a climate change issue. Examples of indirect climate change adaptation impacts include: changes to insurance availability and affordability, increased mortgage risk, supply chain impacts, disease and disease vector changes, food insecurity, market shift, decreased rateable value, regulatory change, decreased credit ratings. This list only represents some of the indirect impacts that can arise and is for indicative purposes only.
<b>Documents</b>	<p>Documents is a collective term used to identify a group of different document types reviewed in the assessment. These documents types include but are not limited to: policies, strategies, plans, frameworks, guidelines, and procedures.</p> <p>For example, the term ‘financial management documents’ was used to refer to the following documents which were assessed for the Financial Management indicator:</p> <ul style="list-style-type: none"> <li>• Financial management policy</li> <li>• Financial management strategy</li> <li>• Financial management plan</li> </ul>
<b>Council function</b>	A council function is a key function which Council provides. Examples of specific council functions include: land use planning, emergency management, natural environment, biodiversity, health and wellbeing, asset management, compliance, works, waste management, sewerage, potable water, community engagement. Please note that some councils do not undertake all of these functions.

Terminology	Definition
<b>Planning theme</b>	A planning theme is a topic that represents the policy intent of a Council's regulatory planning document (i.e. Planning Scheme, Development Plan). Examples of planning themes include: sustainability and resilience, natural environment and landscape, strong communities, settlement patterns, natural resources, integrated transport, infrastructure, water management, coastal areas, hazards etc.
<b>Prescribed response</b>	A prescribed response is an authoritative guide, direction or action on a specific issue or topic. For example, a prescribed response may include a template or guideline of how climate change adaptation should be actioned (i.e. analyse, plan, allocate resources, implement and monitor, evaluate and report).

## Appendix E: Influence of demand management plan decisions on a range of Council's asset

Extracted from Council's asset management plans.

DEMAND IMPACT	INFLUENCE ON ASSETS
Buildings	
Council is committed to using fewer precious resources, reducing its carbon footprint and looking for smarter ways to achieve this objective.	<ul style="list-style-type: none"><li>▪ Renewal programs for facility lighting before end of useful life through an organisational LED upgrade program.</li><li>▪ Introduction of solar assets in the new capital program.</li></ul>
Increased operating (electricity) costs to the Council buildings.	
Open Space	
Council is committed to using fewer precious resources, reducing its carbon footprint and looking for smarter ways to achieve this objective.	<p>The Environmental Sustainability Strategy provides principals for the delivery of new and renewal of assets, these have included:</p> <ul style="list-style-type: none"><li>▪ Energy efficient devices in Council’s open spaces such as LED lighting.</li><li>▪ Natural and renewable materials to be used in manufacturing our open space assets (furniture, structures, playgrounds)</li><li>▪ Implementation of electric car charging station at Hayward Park to promote energy efficient lifestyles in the community.</li><li>▪ Looking for opportunities to use renewable energy such as solar in our open spaces.</li><li>▪ Increasing tree population to absorb carbon dioxide from the air and cool/shade our streets.</li></ul>
Council is committed to have Water Sensitive Urban Design (WSUD) as a feature and reducing its dependency on River Murray water, while also maintaining its parks, reserves and street trees.	<p>The Environmental Sustainability Strategy is delivered through our open spaces and natural assets. Asset initiatives include:</p> <ul style="list-style-type: none"><li>▪ WSUD in open space (for example diversions for watering street trees, bio swales, rain gardens).</li><li>▪ Continue to expand our MAR (Managed Aquifer Recharge) schemes, which collect and use recycled water to green our reserves.</li><li>▪ Identifying suitable trees and flora that will flourish in the changing conditions and require minimal watering.</li><li>▪ Improved irrigation systems to efficiently and effectively water our reserves.</li></ul>
High importance will be placed on Council to find methods to cool and combat the city’s urban heat.	<p>Through the delivery and management of assets, Council looks to mitigate the increasing effects of temperature rises within our open spaces through:</p> <ul style="list-style-type: none"><li>▪ Increase in shading within Councils open space through natural shading (trees) or shade structures.</li><li>▪ Introduction of drinking fountains and access to water for people and dogs.</li><li>▪ Increase in trees within our open space in line with the Tree Strategy.</li></ul>

DEMAND IMPACT	INFLUENCE ON ASSETS
<b>Stormwater</b>	
Council is committed to using fewer precious resources, reducing its carbon footprint and looking for smarter ways to achieve this objective.	<p>The Environmental Sustainability Strategy provides principals for the delivery of new and renewal of assets, these include:</p> <ul style="list-style-type: none"> <li>▪ Natural and renewable materials used in the construction and manufacture of stormwater assets.</li> <li>▪ WSUD principals to be implemented (for example, stormwater diversions for watering street trees, bio swales, rain gardens).</li> <li>▪ Continue the expansion of our recycled water (MAR) networks and the use of recycled water.</li> </ul>
More intense rainfall events are likely to place increased pressure on the drainage network to carry larger volumes of stormwater runoff.	In future, as definitions change, larger pipes may be required to meet the same design standard. Upgrading current capacity of current systems may also be required.
<b>Transport</b>	
<p>Council is committed to using fewer of precious resources, reducing its carbon footprint and looking for smarter ways to achieve this objective.</p> <p>Greater environmental sustainability requirements placed on the construction industry.</p>	<p>Council's Environmental Sustainability Strategy provides principals for the delivery of new and renewal of assets, these include:</p> <ul style="list-style-type: none"> <li>▪ LED lighting introduced to local and collector streets.</li> <li>▪ Natural and renewable materials to be used in the construction of transport assets (recycled roads, composite materials for boardwalks and bridges, permeable surfaces)</li> <li>▪ Electric car changing station at Hayward Park promoting energy efficient lifestyles in the community.</li> </ul> <p>Integration of transport assets with natural and stormwater assets to deliver:</p> <ul style="list-style-type: none"> <li>▪ An increase tree population in the streets to absorb carbon dioxide from the air.</li> <li>▪ WSUD within Council streets. See Stormwater Asset Management Plan.</li> </ul> <p>Higher costs are associated with environmentally sustainable construction methods.</p>
<p>Assets not reaching their stated useful lives due to lack of consideration of climate change.</p> <p>Increasing management and maintenance demand associated with climate change adaptation.</p>	Condition is to be monitored for changes in asset performance within extreme climate conditions.



