

WESTERN AUSTRALIA CLIMATE CHANGE ADAPTATION GOVERNANCE ASSESSMENT

*Summary Results for Climate Change Governance
Assessment of Local Governments*



INFORMED.CITY™
Framework



Prepared for:

Western Australian Local Government Association

Date/ Version:

26 February 2020/ Version 2

Council documents downloaded on 25 October 2019

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Citation:

Climate Planning 2020. Western Australia Climate Change Adaptation Governance Assessment: Summary Results for Climate Change Governance Assessment of Local Governments, February 2020

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Executive Summary

The Western Australian Local Government Association (WALGA) with support from the State Government and Local Government Insurance Scheme (LGIS) applied and was successful in gaining funding through the Natural Disaster Resilience Program (NDRP). The 'Climate Resilient Councils - preparing for impacts of climate change' project aims to support Western Australian local governments to prepare for the increased incidence and severity of natural disasters as a result of climate change. There will be a range of benefits to local governments from participating in this project, including:

- a better understanding of the impacts and risks associated with climate change and natural disasters for local governments and their communities;
- a greater awareness of the degree to which climate change adaptation and disaster management is incorporated into current governance processes and operations;
- improved adaptation and resilience planning which will enable local governments to embed climate change and disaster management into future governance arrangements; and
- better preparedness to deal with climate change impacts such as natural disasters, which are likely to be more frequent and extreme as a result of a changing climate.

Methodology

The project consisted of a climate change adaptation governance assessment of all 139 local governments in Western Australia. Assessments were conducted using Climate Planning's Informed.City™ framework. The quantitative assessment identified the extent to which climate change and disaster management are embedded in the decision making and governance documents of all Western Australia local governments. These corporate documents were assessed against ten core indicators for climate change adaptation governance. These indicators include Strategic Planning, Financial Management, Public Risk Disclosure, Asset Management, Land Use Planning, Emergency Management, Greenhouse Gas Emissions Reduction, Climate Risk Management, Adaptation Planning, and Climate Change Policy.

This project also included a survey of local governments to identify gaps, barriers and opportunities to incorporating climate change into Western Australian local government decision making.

Building upon the quantitative assessments, Stage 2 will involve a). workshops, which will be held where results, analysis of data and recommendations are presented to local governments; and b). engagement of subject matter experts to develop targeted guidance materials. These materials aim to help build the capacity of local governments to better embed climate change adaptation considerations into their governance arrangements.

Results

Overall, the study has shown that there is a mixed consideration of climate change in core government documents at the local government level. Of the ten quantitative governance indicators assessed, Adaptation Planning was the indicator that performed the best with two councils obtaining an 'Advanced' score. The results reveal a geographical trend with coastal councils

performing considerably better than inland councils for Land Use Planning, Adaptation Planning, Climate Change Policy indicators. Furthermore, the Perth Metro region was the highest performing region for the Strategic Planning and Greenhouse Gas Emissions Reduction indicators. Individual councils who scored well in several indicators include Subiaco City Council, Bunbury City Council, and Augusta-Margaret River Shire Council.

The insights from the governance assessment direct attention for the need for a greater focus in how local governments consider (and publicly disclose) climate change management in their formal governance arrangements. Transparency helps remove uncertainty in the market (e.g. enables more accurate mortgage and insurance pricing), can foster innovation and support peer-to-peer learning. The call for better organisational disclosure of financial risks associated with climate change is becoming more prominent in Australian and overseas markets (TCFD, 2018).

On a whole, there are a few climate change governance gaps within Western Australian local governments that will require a concerted effort to improve. However, for most councils and indicators, the improvement in mainstreaming climate change in government operations and procedures can be achieved with minimal financial outlay (at least to a 'Basic' level).

Overwhelmingly the staff governance survey and governance assessment results indicate that staff members (across all departments) believe that one of the biggest barriers to considering climate change is the lack of assigned funding. Other key barriers included issues associated with lack of capacity, a limited understanding of the specific risks, and changing policy at different levels of government.

Summary of Recommendations

The following recommendations presented below are directed towards WALGA, who were the initiators of this review. However, some of these recommendations could also be led or supported by some organisations (e.g. DWER, DFES, LGIS, DLGSC) or a collection of proactive councils. The recommendations below are presented in no particular order:

- **Peer-to-peer learning:** Facilitate a community of practice process to enable councils to undertake peer-to-peer learning. This would require participating councils agreeing to share their climate change governance scores with each other.
- **Expert Sessions:** Consider facilitating specific summits or expert sessions for each of the ten indicators. Invite industry, universities and consultants to present on issues that may affect local government.
- **Guidelines and Templates:** Create specific guidelines and templates that will support councils to improve their climate change governance.
- **State Agency Review:** Consider exploring the utility of undertaking a review of State Agency climate change governance.
- **Detailed Governance Assessments:** Encourage the Western Australian councils to participate in detailed climate change governance assessments or implement a state-wide or regional rollout of a program similar to the Queensland Climate Resilient Councils Initiative (Q CRC).
- **Regulatory and Legal Review:** Consider undertaking a regulatory review to identify opportunities to amend policies and/ or legislation to act as a lever for change.
- **Local Climate Change Projections:** Support the delivery of downscaled climate change information packages for each local government area.
- **Training:** Review the staff governance survey visualisation results to identify training needs for local governments.

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List of Abbreviations

CSIRO	Commonwealth Scientific and Industrial Research Organisation
DFES	Department of Fire and Emergency Services
DLGSC	Department of Local Government, Sport and Cultural Industries
DWER	Department of Water and Environmental Regulation
IPCC	Intergovernmental Panel on Climate Change
LEMA	Local Emergency Management Arrangements
LGIS	Local Government Insurance Scheme
NCCARF	National Climate Change Adaptation Research Facility
NDRP	Natural Disaster Resilience Program
Q CRC	Queensland Climate Resilient Councils
QLD	Queensland
TAS	Tasmania
TCFD	Task Force on Climate-related Financial Disclosures
WALGA	Western Australian Local Government Association

1 Introduction

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 to global environmental change and adaptation responds to the impacts that will already be locked into the 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 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 council's adaptation governance. Unless it can be ensured that a council's internal adaptive capacity is robust 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 1).



Figure 1: Core Elements of Recommended Climate-Related Financial Disclosures (TCFD, 2016)

2 Overview

2.1 About this Report

The Summary Results for Climate Change Governance Assessment of Local Governments (this report) is the primary document produced for the Western Australia Informed.City™ project. This report presents the methodology and results of a comprehensive analysis of the extent of climate change adaptation governance for Western Australia's local governments. It also provides recommendations to WALGA and other key stakeholders to help them implement support for councils to mainstream climate change into their decision making. Also, a suite of visualisations (i.e. interactive graphs, maps, tables) has been created to support the interpretation of these results. This project generated a wealth of information and as such this report cannot capture all of the data contained in the Informed.City™ visualisations presented to the WALGA. The reader is encouraged to review the data in the visualisations as the primary means of information analysis generated from this project.

2.2 Approach

Climate Planning's climate change governance assessment framework was used to understand how effectively considerations of climate change and emergency management are integrated into the corporate operations and governance of Western Australian local governments. Climate Planning performed a typology-based review of local government inclusion and influence of climate change

in publicly available corporate documents. The project 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 improve consideration of climate change in Council decision-making.

Building upon the quantitative assessments, Stage 2 will involve a). workshops, which will be held where results, analysis of data and recommendations are presented to local governments; and b). engagement of subject matter experts to develop targeted guidance materials. These materials aim to help build the capacity of local governments to better embed climate change adaptation considerations into their governance arrangements.

2.3 Evolution of Assessment Framework

The methodology draws on an initial honours thesis and research by Donovan Burton, which explored and measured local and regional climate change mitigation governance (Burton, 2007). Over the past ten years, the methodology has been revised and extended to focus on climate change adaptation. The approach (for adaptation) received the National Climate Change Adaptation Research Facility's [Climate Adaptation Champion Award](#) on the 9th of May 2018 and has been used to explore the climate change adaptation governance of over 250 organisations (including State and local governments).

As presented earlier (Section 1.3), there is a strong push in the private sector to specifically disclose how organisations have included considerations of climate change in their governance arrangements. Although the public sector is not directly included in the Task Force on Climate-related Financial Disclosures (TCFD) framework or recommendations, there are likely to be similar questions asked of national and sub-governments in future by the private sector organisations who work closely with the public sector (e.g. credit rating agencies, reinsurance organisations, institutional investors).

ADAPTATION GOVERNANCE IN PRACTICE

Climate Change Adaptation Governance in Practice

The Local Government Association of Queensland and the Department of Environment and Science have recently established a partnership to support local governments in Queensland to plan for and respond to climate change. Queensland Climate Resilient Councils (Q CRC) is a three-year program working with Queensland local governments to strengthen internal council decision-making processes to respond to climate change.











The program came about after a scoping study of local government adaptation governance for all 77 Queensland councils, which showed a range of deficiencies in how councils were mainstreaming climate change adaptation. There was also increasing interest from the re-insurance industry about how climate change was being collectively managed by local governments.

The Q CRC Program will also offer facilitated peer-to-peer learning. These actions are helping Queensland local governments to improve their mainstreaming of adaptation. They also send a signal to the re-insurance industry that climate change is recognised by local government and adaptation governance gaps are being identified and managed.

3 Methodology for Quantitative Assessment

The quantitative assessment analyses the level of consideration of climate change adaptation governance in Western Australian council corporate documents. In the assessment, Climate Planning identified publicly available corporate documents for each local government and undertook a deeper exploration into how climate change is considered in those governance documents. These corporate documents were assessed against ten core indicators for climate change adaptation governance (see Table 1).

Table 1: Justification of climate change governance indicators for 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 result in a better likelihood for mainstreaming of climate change 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, which means public disclosure of these 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 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 disaster 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, climate change adaptation will likely 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) 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." Furthermore, 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 Project Outputs

The outputs delivered for the Informed.City™ project are different from traditional reporting methods. Climate Planning has used new technology approaches to develop interactive visualisations which provide users with direct access to the results of the climate change adaptation governance assessment. These 'visualisations' are essentially an electronic book which contains up to six pages of information about the most interesting findings in the analysis. The pages within a visualisation are called 'dashboards' and include graphs, maps and tables which the user can interact with and use to explore trends in the data.

In total over 3,500 charts have been generated as outputs from the analysis of Western Australian councils and will provide WALGA and other stakeholders a wealth of information to support informed decision-making.

The outputs produced for this project are listed below:

- **Summary Results Report (this Report)** – this report presents the methodology and results of a comprehensive analysis of the extent of climate change adaptation governance for Western Australia's local governments. It also provides recommendations to the project WALGA to assist in the interpretation of the results and support the mainstreaming of climate change adaptation.
- **Governance Assessment Reports** – 139 reports have been created to provide each local government with a summary of their results from the governance assessment and present some initial recommendations that may assist councils in improving their climate change adaptation governance.
- **Staff Governance Survey Visualisation** – these four visualisations show the results of an online survey aimed to identify each departments' understanding of climate change impacts and their capacity to adapt. There were 356 staff members from 75 local governments who participated in the survey. The following workbooks have been created:
 - **Department workbook** – filters the results of the staff governance survey by department.
 - **WA Region workbook** – filters the results of the staff governance survey by Western Australian region.
 - **WALGA Region workbook** – filters the results of the staff governance survey by WALGA region.
 - **Coastal region workbook** – filters the results of the staff governance survey by Western Australian region.
- **Staff Survey Raw Data** – a spreadsheet of raw survey data has been exported for each local government who participated in the Staff Governance Survey.

- **Governance Assessment Visualisation** – this visualisation shows the results of a climate change adaptation governance assessment for all 139 local governments in Western Australia. During the assessment, councils’ corporate documents were assessed against ten core indicators for climate change adaptation governance. The results can be filtered by regions and individual council.
- **Instruction Manual** – this guideline provides step-by-step instructions on how to use Informed.City™ interface and visualisations.

4 Results

These results are based on a governance assessment of Western Australian councils which was completed on the 25th of October 2019. The results include interesting findings obtained from analysing how well climate change was considered in the corporate documents of Western Australian local governments (specifically those which align with the governance indicators). A State-wide analysis of collective governance scores for the quantitative governance assessment is also presented. Finally, the general themes which emerged from the face-to-face meetings are discussed.

It is important to note that the results contained in this report only represent a small fraction of the information collected and analysed for this project. For this reason, a local government focussed Informed.City™ framework has been created for Western Australia and delivered to WALGA, who are encouraged to consult this specifically when engaging with councils for any information related to climate change adaptation governance.

4.1 Results for the Staff Governance Survey

There were 356 staff members from 75 councils from Western Australia who participated in the staff governance survey. This means that the collective survey results which follow reflect only those councils (54%) and not the entire 139 local governments in Western Australia.

The survey results show the department which staff members work in is quite dispersed. There are 64 staff members (18%) working in the Environment/ Sustainability department and another 48 staff members (13%) with a role in Corporate Governance / Office of the CEO. This is closely followed by the Planning and Development department who had 50 staff members (14%) participate in the online survey (see Table 2). Interestingly, a good spread was found in the results since there is at least one response from each department.

Table 2: Number of survey responses in each department for Western Australian local governments

Department	Number of responses	% of responses
Environment / Sustainability	64	18%
Corporate Governance / Office of the CEO	48	13%
Planning and Development	50	14%
Parks and Open Space	44	12%
Admin and Library Services	40	11%

Department	Number of responses	% of responses
Disaster / Emergency Management	37	10%
Community and Recreation	36	10%
Engineering / Infrastructure	35	10%
Customer Service	31	9%
Corporate and Business Services	29	8%
Asset Management and Property Services	20	6%
Finance	19	5%
Water and Waste	19	5%
Works	17	5%
Transport and Fleet	11	3%
Communications, Media and Marketing	10	3%
Procurement	9	3%
Human Resources	7	2%
Information Technology Services	7	2%
Arts and Heritage	6	2%
Geographic Information Systems	6	2%
Casual (no specific department)	5	1%
Economic Development	4	1%
Tourism and Visitor Serving	4	1%
Workplace Health and Safety	4	1%
Health and Safety	3	1%
Other Department	3	1%
Strategic Planning	3	1%
Total	356	100%

The staff survey found that 90% of respondents have some level of understanding of climate change impacts and adaptation. There were 129 staff members (51%) who stated that 'their understanding is limited', whilst another 100 staff members (39%) acknowledged that they 'could comfortably incorporate/ consider climate change adaptation' (see Figure 2). Also, 136 staff members (61%) identified 'a good understanding of climate change' as an enabler to Council's ability to plan for climate change.

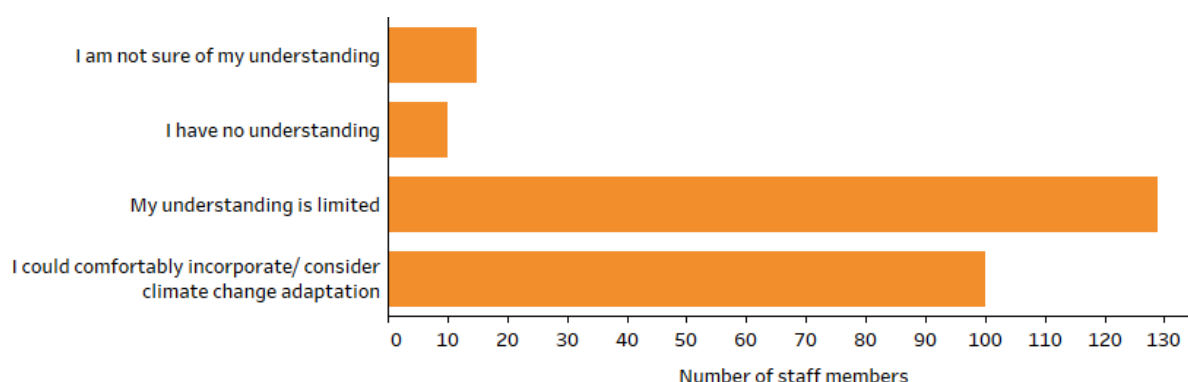


Figure 2: Level of understanding of climate change impacts and adaptation for Western Australian local government staff members

4.1.1 Barriers and Enablers to planning for climate change

The online survey revealed that 'limited assigned funding' was the most common barrier hindering Council's ability to plan for climate change, with it being identified by 144 staff members (61%). Another popular barrier was 'uncertainty of the role of Local Government' which was recognised by 51% of respondents (120 staff members) and ranked third. Interestingly, 'limited staff capacity (number of)' and 'risk are not well understood' also ranked in the top four barriers which hinder council's ability to plan for climate change (see Figure 3).

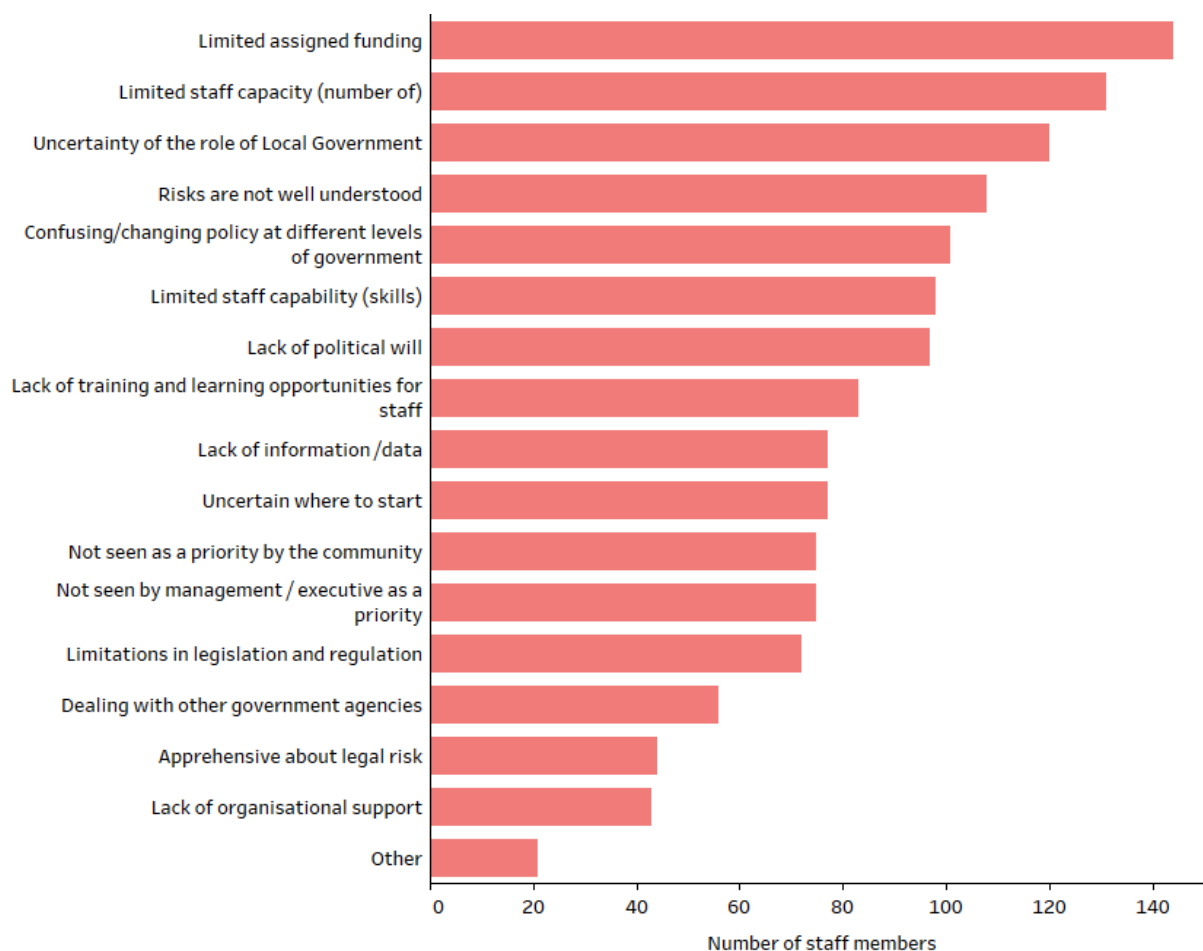


Figure 3: Staff members responses for 'barriers hindering councils' ability to plan for climate change' for Western Australian local governments

When local government staff members were asked about enablers which contribute to council's ability to plan for climate change, 'good understanding of climate change' was the most popular with it being recognised by 136 staff members (61%). This was closely followed by 'active and engaged communities; which ranked second (130 staff members, 59%) and 'senior management support' (127 staff members, 57%) which ranked third (see Figure 4).

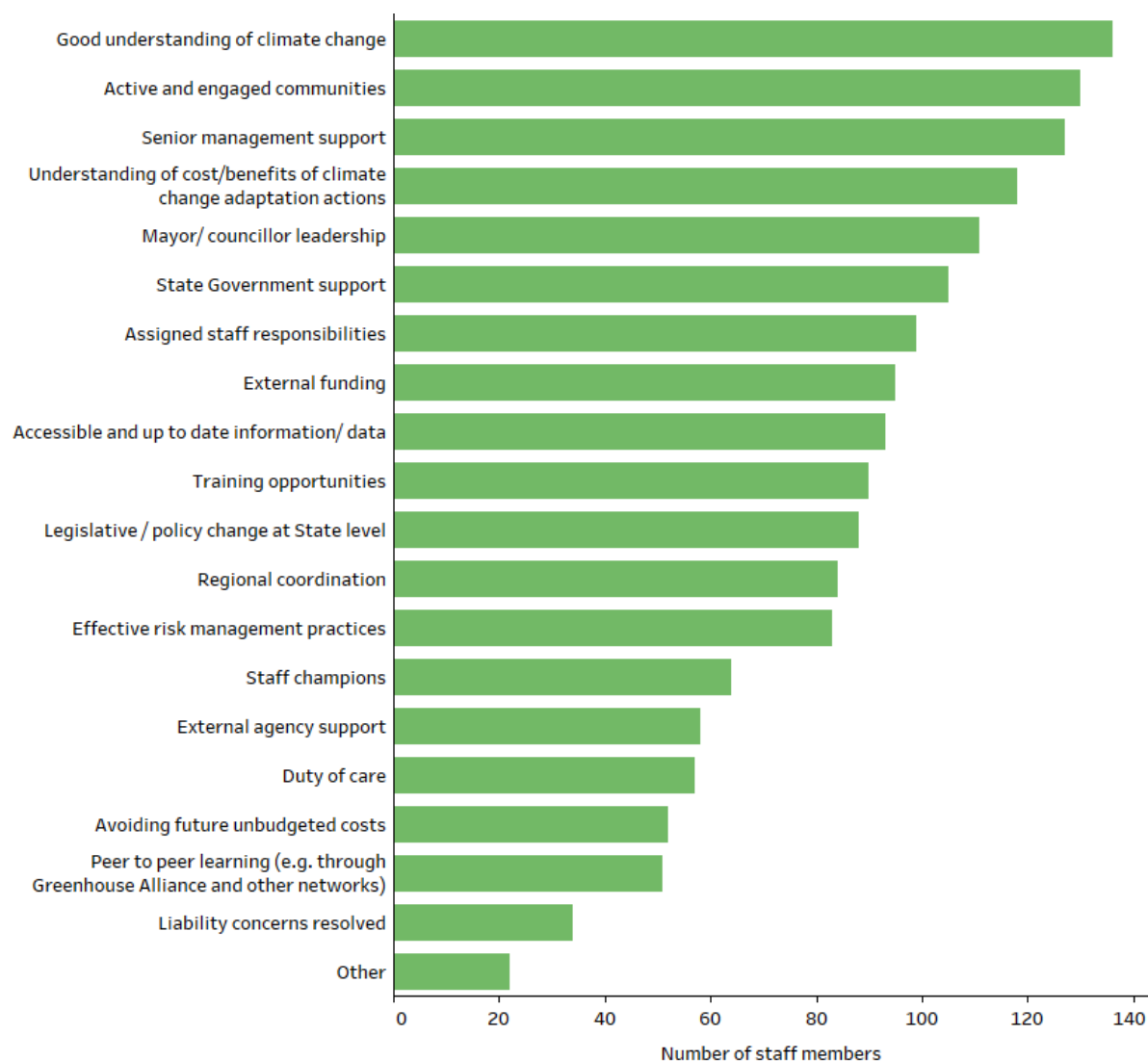


Figure 4: Staff members responses for 'enablers contributing to council's ability to plan for climate change' for Western Australian local governments

4.2 Results for the Quantitative Assessment

The results of the quantitative assessment have been divided into the ten core indicators of climate change adaptation governance. The complete set of data for this project is captured in the suite of Informed.City™ visualisations which has been created and delivered to WALGA, who are encouraged to consult this directly to explore additional trends.

Indicator 1: Strategic Planning

All of the 139 local governments had a Strategic Community Plan that was publicly available. Having this plan is a legal requirement and therefore particularly important that it is publicly available. A total of 19 councils (14%) scored 'High', 34 councils (24%) scored 'Intermediate', and 43 councils (31%) scored 'Basic' (see Figure 5). The Western Australian State average for this indicator

is 'Basic'. Augusta-Margaret River Council was the only local government who achieved an 'Advanced' score for the Strategic Planning indicator.

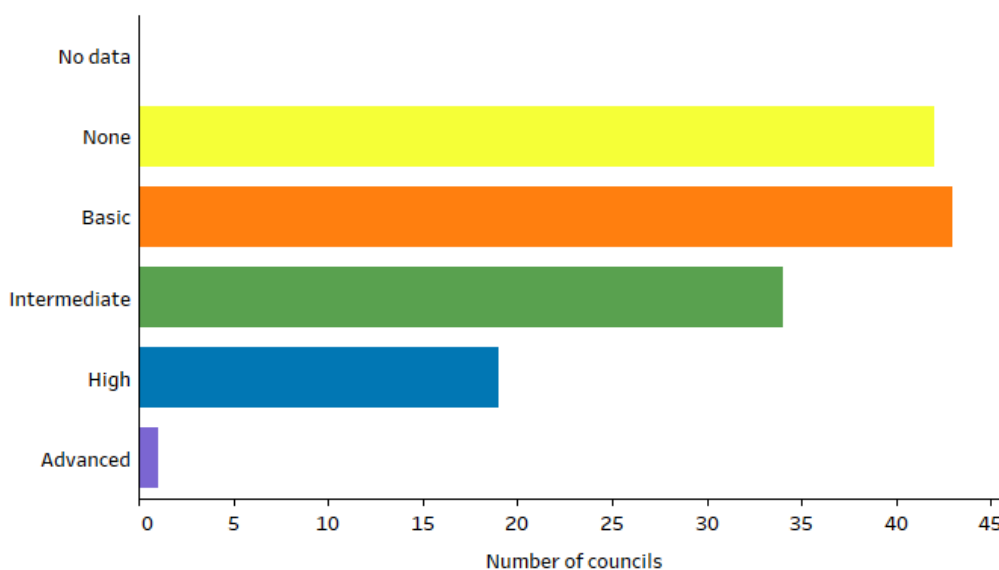


Figure 5: Distribution of Strategic Planning scores for all Western Australian local governments

The assessment found 42 councils (30%) have no consideration of climate change in their Strategic Plans and were scored 'None'. Of the Western Australian regions, the South West region the most positive results with five out of the twelve councils scoring 'High', and another council achieving an 'Advanced' score. The Perth Metro region saw nine councils score 'High' and nearly half of the councils (14) receiving an 'Intermediate' score. The extent of climate change considered in strategic planning documents was found to be less prominent among the Gascoyne, Kimberly, Mid West and Pilbara regions.

Indicator 2: Financial Management

There were 123 councils (88%) with publicly accessible financial management documents that were assessed. However, a large percentage of these documents reviewed do not mention climate change, with 85 councils scoring 'None' (see Figure 6). There were 24 councils (17%) with an 'Intermediate' consideration of climate change which means they provided prescribed responses for climate change issues or council functions. This is a positive note with very few councils in other Australian jurisdictions having considered climate change in financial management. Another five councils achieve a 'High' score of the Financial Management Indicator. More importantly, there is at least one leading council (e.g. those who score 'High' and 'Advanced' for specific indicators) within four of the Western Australian regions. This presents Mid West, Perth Metro, South West, Wheatbelt regions with an opportunity to improve their scores through peer-to-peer learning.

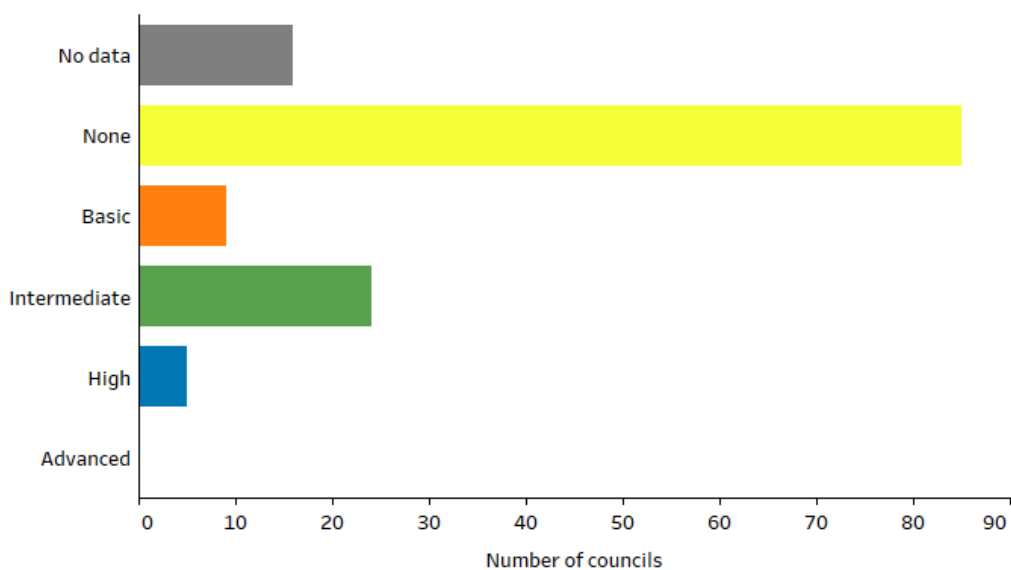


Figure 6: Distribution of Financial Management scores for all Western Australian local governments

Indicator 3: Public Risk Register

A large percentage of councils (64%) do not have a publicly available risk register (see Figure 7). This is an unsurprising finding considering the traditional aversion by local government to publish their risk registers (an Australia-wide trend which is only recently beginning to shift). Of the councils who have disclosed their risks, 31 councils (22%) presented risk registers (or similar) with no mention of climate change. The assessment also identified two councils with a 'Basic' consideration of climate change, such as general statements or related keywords. More importantly, 17 councils achieved an 'Intermediate' score for the Public Risk Disclosure indicator, which show some local governments are disclosing climate-related risk.

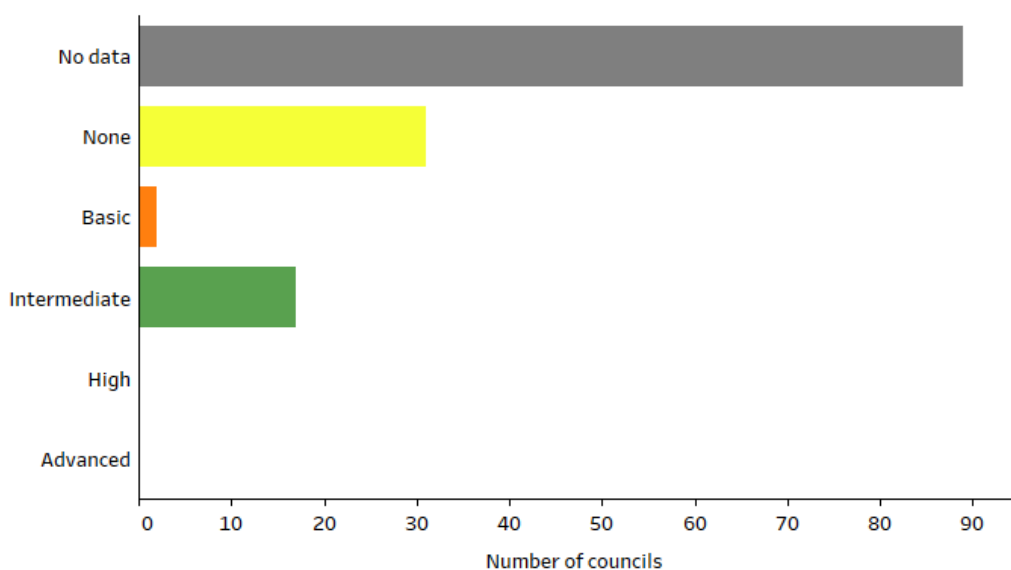


Figure 7: Distribution of Public Risk Disclosure scores for all Western Australian local governments

Indicator 4: Asset Management

A total of 109 councils (78%) had relevant asset management documents available to review. Of those councils that were assessed, the highest score was 'High', which was obtained by Melville City Council (see Figure 8). Also, there were 27 councils (19%) who achieved an 'Intermediate' score which is dispersed through most of the Western Australian regions (except Kimberley and Peel regions). It is important to note that 20 of the 27 councils scored 'Intermediate' are identified as 'shire' councils, and the other seven are 'city' councils. This suggests that more rural local governments (than urban councils) are providing guidance on climate change issues related to asset management.

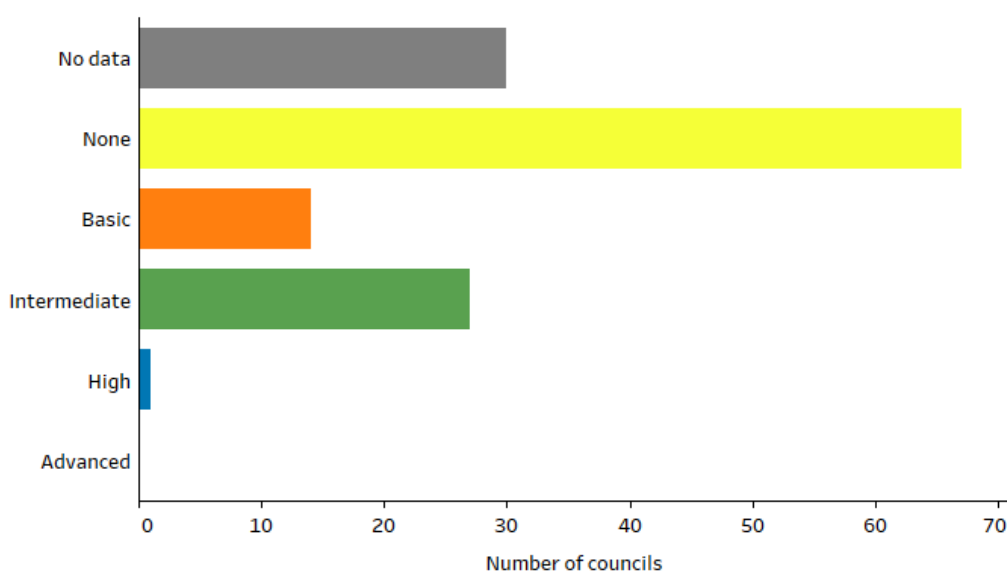


Figure 8: Distribution of Asset Management scores for all Western Australian local governments

Indicator 5: Land Use Planning

All of 139 councils had a land use planning document to review. A total of 11 councils (8%) scored 'High', 31 councils (22%) scored 'Intermediate', and 34 councils (24%) scored 'Basic' (see Figure 9). Only one council, Bunbury City Council achieved an 'Advanced' score for the Land Use Planning indicator. Interestingly, the distribution of scores change when comparing against coastal councils and inland councils. The results show that around 75% of coastal councils (46) have some consideration of climate change ('Basic' or higher) which is nearly double the proportion of inland councils, representing only 40%. Therefore, it seems that coastal councils are progressing in this indicator and therefore should be considered as leaders for Land Use Planning (likely to be due to the consideration of coastal hazards and sea level rise).

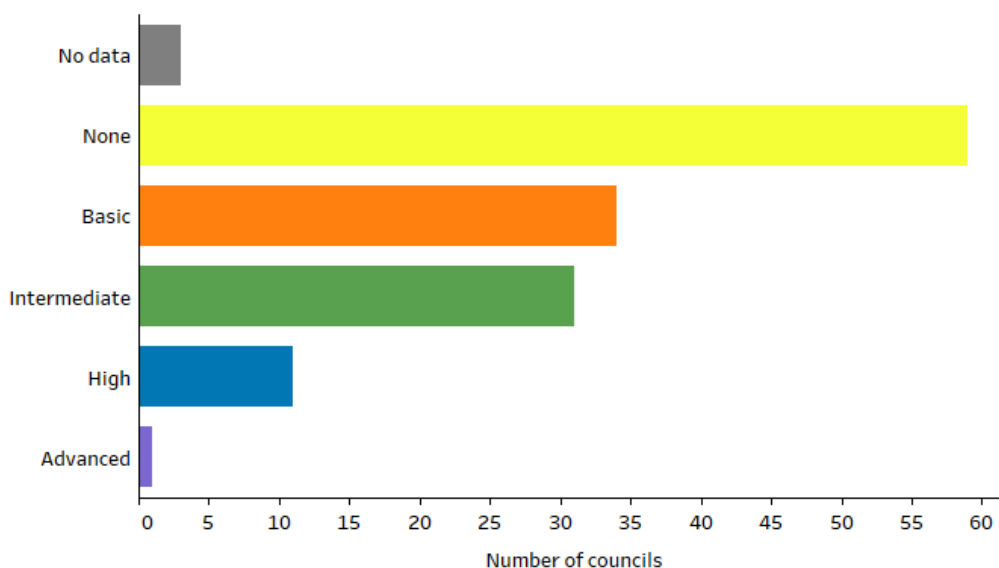


Figure 9: Distribution of Land Use Planning scores for all Western Australian local governments

Indicator 6: Emergency Management

A total of 24 councils (17%) do not have a publicly available Local Emergency Management Arrangements (LEMA) or Local Recovery Plan to assess. Considering that having this plan is a legislated requirement, it is surprising that some councils have not disclosed their LEMA. Of those councils that were assessed, 108 councils (78%) scored 'None' which means that their emergency management plan/s do not consider climate change (see Figure 10).

While there are frequent typologies used, like 'mitigation', these are not directly linked to climate change issues and longer-term trends. The lack of 'Basic' inclusion in emergency management planning potentially reflects the predisposition for local governments to utilise templated emergency management plan/s, which have successfully passed through the auditing process.

The highest score achieved for this indicator was 'Intermediate', scored by two councils: Swan City Council and Bridgetown-Greenbushes Shire Council. The result for Swan City Council is consistent with its high scores in other indicators such as Strategic Planning and Land Use Planning. However, it is quite interesting that Bridgetown-Greenbushes Shire Council scored 'Intermediate' in this indicator as the Council scored below average in most of the other indicators.

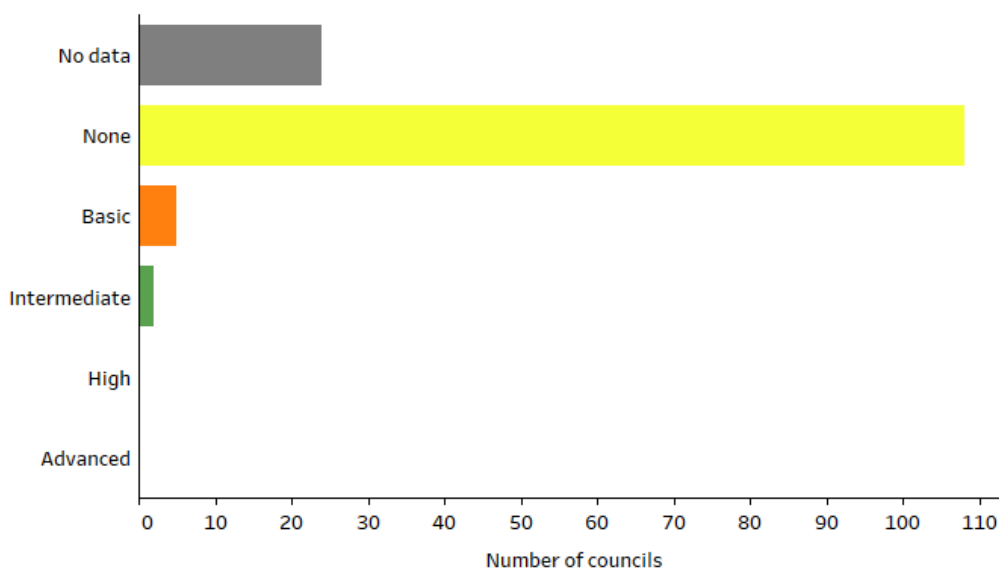


Figure 10: Distribution of Emergency Management scores for all Western Australian local governments

Indicator 7: Greenhouse Gas Emissions Reduction

The assessment found 53% of councils (74) scored 'None' and nearly half of Western Australian Councils (56) scored 'Basic' (see Figure 11). Interestingly, three of the councils that scored 'Intermediate' (Perth City Council, Melville City Council and Mundaring Shire Council) are in close distance to Cockburn City Council which scored 'High' and another four councils which scored 'Advanced'. This potentially indicates a geographic pattern and an improved consideration of climate change as a result of regional coordination or collaboration. These councils are part of the Perth Metro region which was the highest performing region for the Greenhouse Gas Emissions Reduction indicator.

It is also important to note that in seven of the Western Australian regions, councils only achieved a 'Basic' score. These regions include Gascoyne, Goldfields-Esperance, Great Southern, Kimberly, Mid West, Peel, Pilbara, and the Wheatbelt. This means that those councils have either a general (no target) commitment to reducing greenhouse gas emissions or a short-term target established only to 2020. In general, if a council can be encouraged to move beyond a 'Basic' commitment or consideration to reduce greenhouse gas emissions then they are likely to set a target for carbon neutrality at or before 2050.

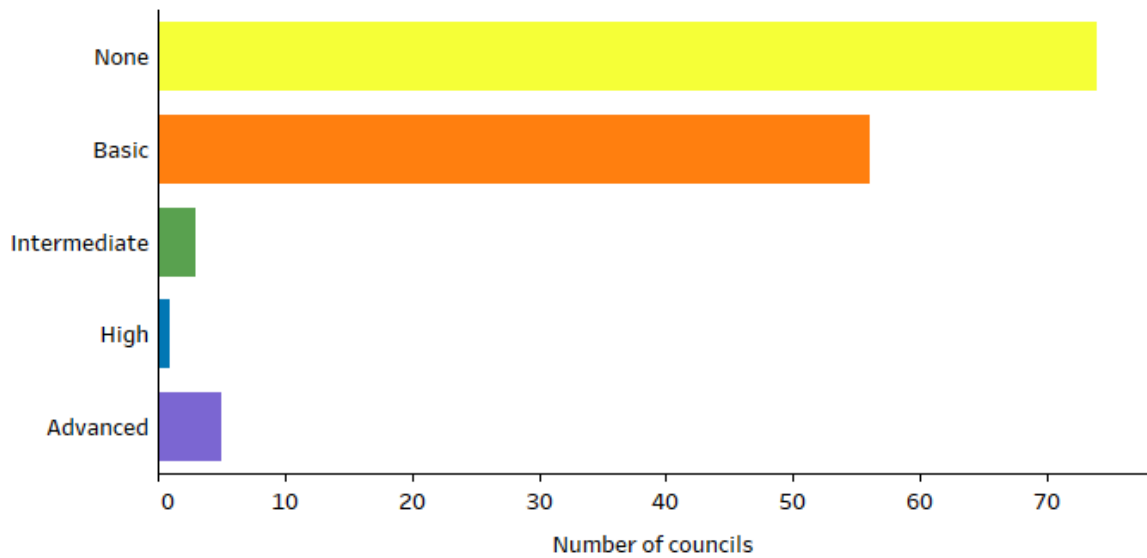


Figure 11: Distribution of Greenhouse Gas Emissions Reduction scores for all Western Australian local governments

Indicator 8: Climate Risk Management

There are 36 councils (26%) which do not have any risk management documents publicly available (see Figure 12). Over half of councils (66%) scored 'None' which means that there are risk management documents available, however, they do not have any consideration of climate change. There were nine councils which scored 'Basic', suggesting that a general statement about climate change risk has been identified. Also, two councils achieved an 'Intermediate' score (Jerramungup Shire Council and Mount Magnet Shire Council) for the Climate Risk Management indicator. However, the limited inclusion of climate change for this indicator supports the ordinary results for the Public Risk Disclosure (#3) indicator.

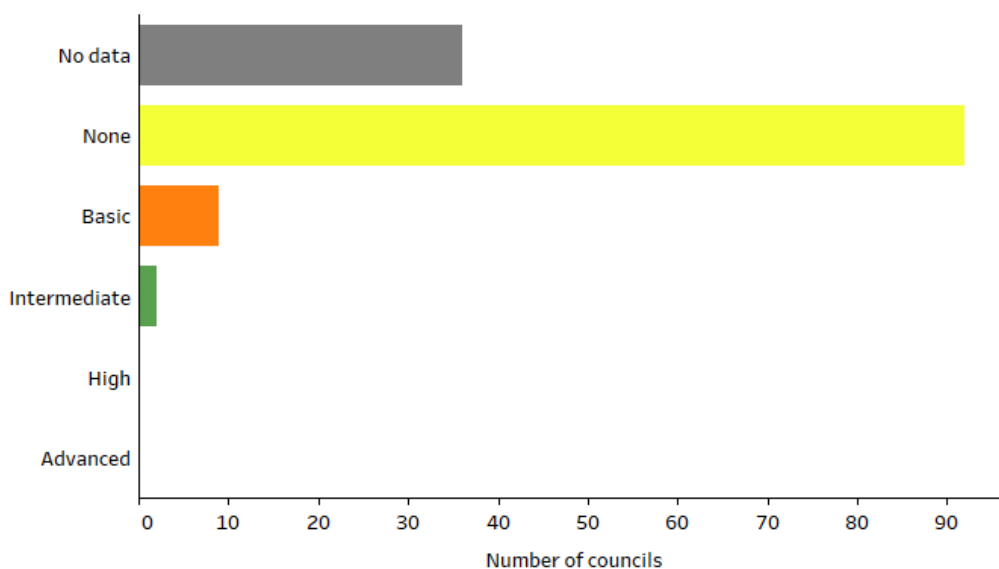


Figure 12: Distribution of Climate Risk Management scores for all Western Australian local governments

Indicator 9: Adaptation Planning

The review shows that 93 councils scored 'None' (67%), 25 councils received an 'Intermediate' score (18%), and another 19 were awarded 'High' scores (14%). Also, there were two councils which achieved an 'Advanced' score, they are Joondalup City Council and Kwinana City Council (see Figure 13). No councils scored 'Basic' for the Adaptation Planning indicator.

With 25 councils scoring 'Intermediate' the geographic distribution of these scores presents some interesting findings. Nearly every Western Australian region (except for Gascoyne) has at least one council with an 'Intermediate' score or higher. These results show that Western Australian local governments are in an ideal position to facilitate peer-to-peer learning for climate change adaptation planning.

Another important point to note is that coastal councils performed considerably better in adaptation planning than inland councils. The results show that 70% of coastal councils (43) scored 'Intermediate' or higher which is significantly more than the 4% of inland councils (4). This finding is likely due to conditions in the State Coastal Planning Policy which require councils to develop Coastal Hazard Risk Management and Adaptation Plans to address coastal hazards.

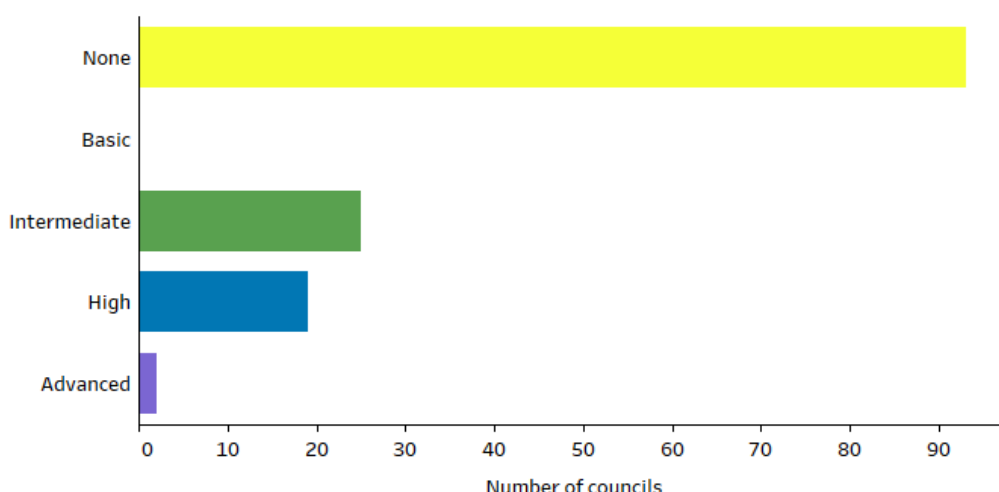


Figure 13: Distribution of Adaptation Planning scores for all Western Australian local governments

Indicator 10: Climate Change Policy

All councils were assessed to see whether a climate policy existed and if so, the extent to which climate change is considered. Around 67% of councils (93) have no formal (council endorsed) climate change policy or environment/ sustainability policy available publicly on their website (see Figure 14). There were four councils which have a relevant climate change policy and they performed very well, all achieving 'High' scores. These include Capel Shire Council, Cottesloe Town Council, Greater Geraldton City Council, Kwinana City Council and Mosman Park Town Council. This suggests that if a council can be encouraged to develop a Climate Change Policy then they are likely to include most, if not all, of the attributes which are required to achieve a 'High' or 'Advanced' score. Furthermore, the trend with high performing coastal councils has also been identified for this indicator with fewer inland councils (13%) providing policy guidance for climate change than coastal councils (59%).

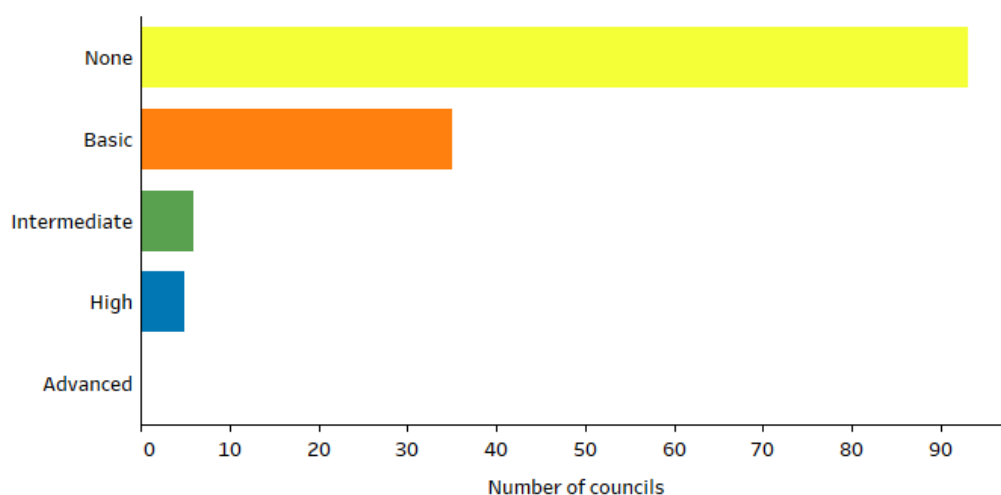


Figure 14: Distribution of Climate Change Policy scores for all Western Australian local governments

5 Recommendations

The following recommended actions presented below are directed towards WALGA, who were the initiators of this review. However, some of these recommendations could also be led or supported by some organisations (e.g. DWER, DFES, LGIS, DLGSC) or a collection of proactive councils. The recommendations below are presented in no particular order.

5.1 Peer-to-Peer Learning

Facilitate a community of practice process to enable councils to undertake peer-to-peer learning. The visualisations allow users to identify leading councils (e.g. those who score 'High' and 'Advanced' for specific indicators). The results can be generated regionally or State-wide. This approach can only be done for indicators where numerous councils have achieved a relatively high score as this enables the sharing of information from a broad range of council typologies. Based on the results of this assessment the indicators most suited to peer-to-peer learning are presented below, with relevant leading councils listed (see Table 3).

Table 3: Leading councils for each indicator suited for peer-to-peer learning

Indicator	Leading Councils	Indicator Level
Strategic Planning (#1)	Augusta-Margaret River Shire Council	Advanced
Asset Management (#4)	Melville City Council	High
Emergency Management (#6)	Bridgetown-Greenbushes Shire Council Swan City Council	Intermediate
Greenhouse Gas Emissions Reduction (#7)	Augusta-Margaret River Shire Council Cottesloe Town Council Fremantle City Council Subiaco City Council Vincent City Council	Advanced

Indicator	Leading Councils	Indicator Level
Adaptation Planning (#9)	Joondalup City Council Kwinana City Council	Advanced
Climate Change Policy (#10)	Capel Shire Council Cottesloe Town Council Greater Geraldton City Council Kwinana City Council Mosman Park Town Council	High

The resources required to implement this would be minimal (e.g. venue hire, travel costs, workshop preparation). Given the low cost for this recommendation, it should be seen as a priority.

If there are no leading councils (or few that represent the scope of council typologies) for some indicators, then consider inviting councils from other States who have participated in the study and have achieved 'High' or 'Advanced' scores. To date, the scoping study has been undertaken for all local governments in Queensland, Victoria and Tasmania.

5.2 Expert Sessions

For some of the indicators, there are not enough councils who have scored well enough to support peer-to-peer learning. In this instance, it is recommended that WALGA should consider facilitating specific summits or expert sessions for each of those indicators. The sessions should include presentations from industry, universities and consultancies to present on issues that may affect local government, making sure that the focus of any presentation is based on solutions.

As an initial priority, focus on the development of local government climate change policies, the integration of climate change considerations into Emergency Management, and Climate Risk Management. Likely, this will also have positive subsidiary impacts for the publishing of climate information and disclosure of climate risks (i.e. Public Risk Disclosure). These three indicators currently have a relatively low score across the State.

5.3 Guidelines and Templates

Guidelines and templates are a valuable resource for local governments and could be used as a mechanism to improve some, if not all, of the indicators. The indicators that are most suited for the application of templates include Climate Change Policy, Public Risk Disclosure, Risk Management and Emergency Management. Supporting guidelines would be relevant for all of the indicators. For example, the Tasmanian Government has developed a document titled '[Mitigating Natural Hazards through Land Use Planning and Building Control - Coastal Hazards Technical Report](#)' which has helped improve local government responses to coastal hazards.

5.4 State Agency Review

The Government of Western Australia should consider exploring the utility of undertaking a review of State Agencies. Many of the governance gaps identified in the local government assessment will require State support and/ or guidance. As such, an argument for a review can be made to focus on

understanding the State Agency capacity to support local governments. It is interesting to note that a small number of participants did state that they thought the State should also review their governance and/ or outward-facing policies. Any review undertaken should include an exploration of how each of the State agencies could support local governments to improve indicators scores relevant to their portfolio.

5.5 Detailed Governance Assessments and Working Groups

Encourage Western Australian councils to participate in detailed climate change governance assessments. Conducting internal detailed focus group assessments with senior local council staff can be useful especially for better understanding:

- Climate legal risk
- Staff allocation
- Institutional arrangements
- Community/ business engagement
- Climate change information and systems
- Performance management
- Data management

Understanding these trends can significantly assist the development of council and regional strategies to improve the consideration of climate change across all indicators. It is recommended that a scoping climate change adaptation governance review be undertaken every year. That way the effectiveness of various mechanisms and interventions can be tested over time. For example, if 'soft measures' such as training and guidelines for improving specific indicators are rolled out and result in no net improvement in governance scores over time, then other 'harder' mechanisms (e.g. regulation) may be deemed relevant or justified.

5.6 Regulatory and Legal Review

It is prudent that a regulatory review is undertaken to identify opportunities to amend policies and/ or legislation to act as a lever for change. While most of the indicators can be improved through softer measures (e.g. training and guidelines) legal intervention may be required for others. For example, measures to mandate the inclusion of climate change management in Strategic Community Plan, LEMA and compulsory publishing of a Climate Change Risk Register would see a rapid improvement of climate change mainstreaming at the local level.

5.7 Local Climate Change Projections

Almost all local government departments represented in the staff governance survey identified local climate change projections as a barrier to adaptation planning. Local (downscaled) climate change projections enable councils to better understand locally specific risks and adaptation options. 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. As such it is recommended that local governments are provided with downscaled climate change information packages. This will help councils to identify their main (or single) source for climate change data. There are a range of downscaling techniques and providers of downscaled climate change information.

The State should ensure that any downscaled projections are available at local and regional levels and also have information that can be fed into other models (e.g. extreme event analysis for flood modelling and risk-based land use planning).

5.8 Training

The online survey identified that there are a considerable number of capacity gaps for many issues related to climate change adaptation. When WALGA is planning for training sessions it is recommended that they review the Staff Governance Survey visualisation to identify training needs by local government department. This visualisation can also assist with the identification of a range of other needs that have been stated by respondents (Figure 15 below as an example of support sought by Planning and Development staff).

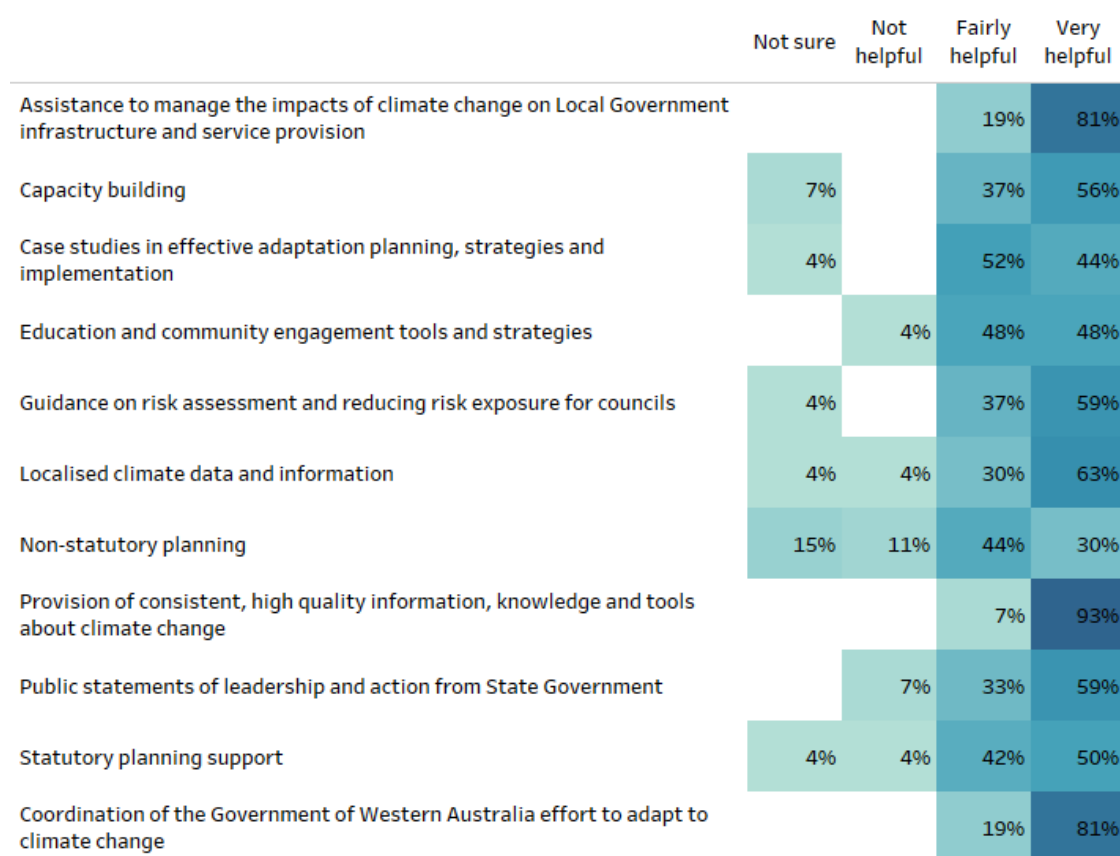


Figure 15: Preferred support for adapting to climate change impacts sought by Planning and Development staff

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