

PREPARED FOR

KYOGLE COUNCIL

DECEMBER 2023

Item 13.5 (1)

Climate Change Adaptation Strategy and Action Plan for the Kyogle LGA

RESPONSE TO REQUEST FOR TENDER
2023/24-029



1 Overview

Supporting climate adaptation across Kyogle LGA

Meridian Urban, in association with Risk Frontiers, is pleased to provide this tender response to Kyogle Council to support the preparation of a Climate Change Adaptation Strategy and Action Plan for Kyogle local government area (LGA).

We understand Council seeks support to develop a Strategy and Action Plan that focuses specifically on the emergent risks and impacts of climate change on the Kyogle LGA and community – particularly with regard to land systems, land use, economy, environment, lifestyle, and wellbeing.

As we are already presently supporting Council with the preparation of its Growth Management Strategy, we see our ability to deliver both projects concurrently as an important alignment of approach and process of foundational strategy development that can set a clear, climate adapted growth direction for Council into the future.

Like our growth management team, we offer a Gold Coast and Brisbane-based team led by Stephen Dredge, one of Australia's leading resilience and adaptation experts who has been supporting the Northern Rivers Reconstruction Corporation with the development of its Resilient Lands Strategy.

Consistent with our work on the GMS, we intend to take a highly futuristic and out-of-the-box approach to supporting Council to advance its climate change adaptation and broader community development goals. Importantly, we offer a **two-step approach** – both a strategic LGA-scale assessment, and optionally, an **address-level assessment** (if budget permits) that provides an incredibly granular understanding of potential climate related losses at the property level across the LGA.

Our collaboration with Risk Frontiers offers:

- Tried and tested practical experience in the design and delivery of climate change and resilience assessments through a community-led and place-based delivery model that has been used across multiple Australian states and contexts
- A mature, engagement and collaboration-oriented locally led approach to adaptation planning and resilience building
- 28 years of research and development to deliver cutting edge data and insights to understand risk and resilience problems
- An integrated project team with experience delivering multiple successful projects in partnership across NSW.

Our response herein sets out our understanding of the local context for Council and its unique needs, our capabilities and innovations in delivering work of this type, and how we intend to deliver the project in accordance with the scope requirements.

Our Strengths



Climate adaptation planning design and delivery experts – from local plans to state-wide programs via innovative and bespoke processes of change



Experience in undertaking climate change risk and adaptation projects in rural Eastern Australia – including nearby Clarence Valley



Climate risk and risk assessment experts who are data driven and focused on using evidence to drive outcomes



Long track record of working in rural / regional communities on resilience and adaptation issues using methodical and structured approaches



Track record in developing workable and sustainable local government-specific operational frameworks



Ability to produce clear, highly engaging and stakeholder-friendly strategy material

About Us


Meridian Urban is a leading resilience, adaptation and planning advisory firm operating across Australia. We are known for our expertise in environmentally and socially sustainable adaptation planning and delivery. We provide highly innovative and 'game changing' risk leadership, engagement, risk reduction, strategic and statutory planning and funding advisory capability to local and state government clients to help them achieve their goals. We thrive on positioning Councils and government entities for implementation success.

Risk Frontiers specialises in catastrophe loss modelling, climate risk and resilience. They provide innovative science-driven research, analysis and solutions to build safe and resilient communities.

Their staff are not generalists - they are climate science experts. Risk Frontiers has been in operation for almost 30 years and is known worldwide for its excellence. They have expert knowledge and tools to deliver high quality climate risk analysis.

Our firms have a long history of collaboration on many risk and adaptation projects across Australia.

Highlights of our offer include:

- Collaboration through **co-design** as a hallmark of our project delivery practices
- Access to Risk Frontiers' climate models and datasets – arguably Australia's **leading authority** on climate science and risk implications – including at address level (optional)
- Ability to align both the **technical delivery and stakeholder engagement** between the Growth Strategy and the Climate Change Strategy – creating efficiency and reducing engagement fatigue with community
- Framework approach drawn from best practice climate change adaptation guidance, with a focus on **integrating / aligning with broader needs** across the built, economic, social, and natural environments
- Strong focus on building on Council's existing internal Working Group governance, including a **maturity model of practice** and capability building across divisions
- A **monitoring and evaluation framework** to support the subsequent evaluation of adaptation practice performance against indicators
- **Senior staff** deployed on the project to maximise efficiency and delivery quality

2 Understanding of Project Scope

Local Climate Context

Risk Frontiers maintains an extensive database of global and regional climate model simulations that provides more granular detail than the publicly-available AdaptNSW climate change projections mapping. Projections from climate models show with high confidence that temperatures will increase globally throughout the 21st century and beyond due to increasing concentrations of greenhouse gasses, primarily carbon dioxide. Changing temperatures will also affect rainfall patterns and extreme weather events.

The Kyogle local government area will almost certainly see an increase in the frequency of hot days and heatwave events. Rainfall patterns are expected to become more extreme, with dry years being dryer and wet years being wetter. Bushfire weather is affected by both temperature and rainfall patterns, so the frequency of dangerous bushfire weather days (FFDI > 25) will increase. There is more uncertainty around projections for storms such as east coast lows, however, increasing air temperatures mean that storms will contain more moisture, so rainfall totals will be higher. The magnitude and impacts of changes will increase in-line with increasing global mean temperature.

Figure 1 shows an example of Frequency of Hot Days across the Kyogle local government area.

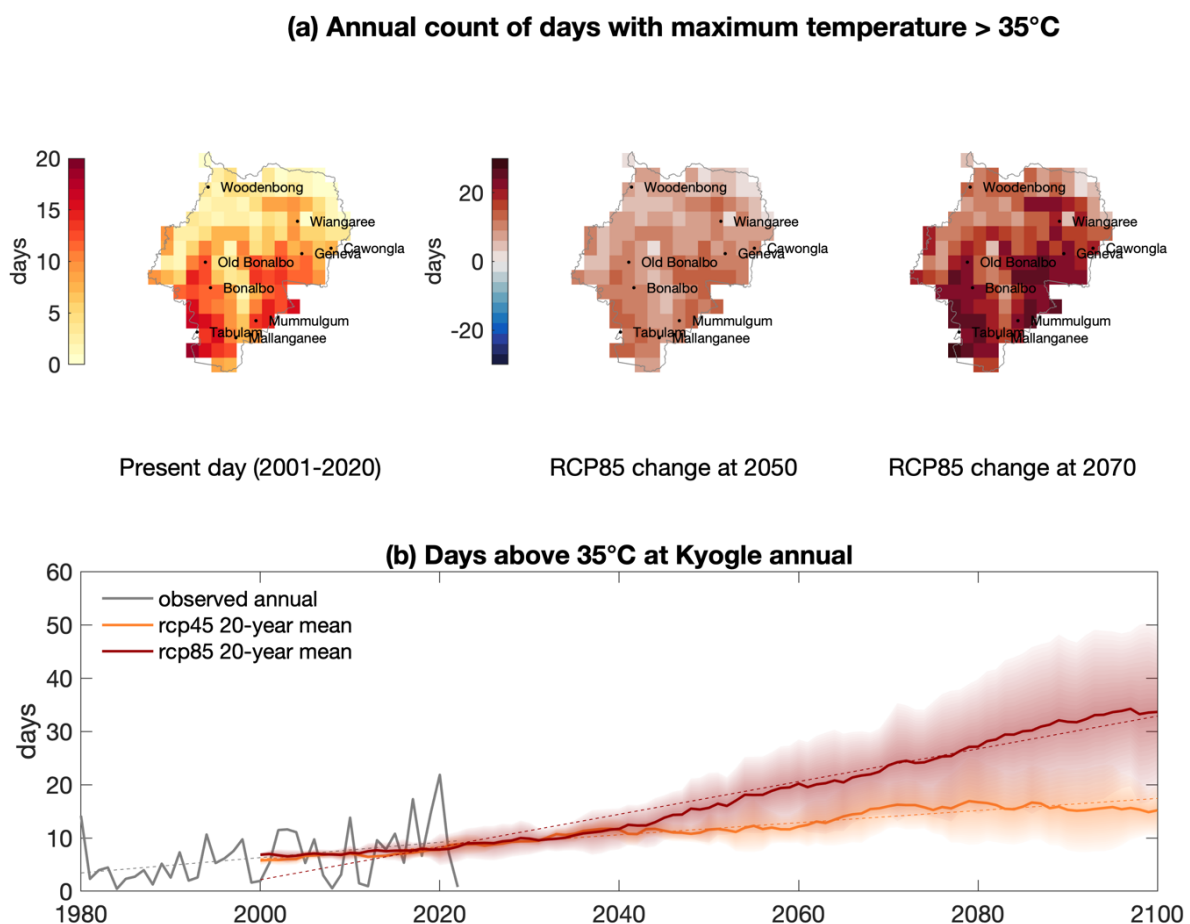


Figure 1: Climate change projections for Kyogle LGA - drawn from Risk Frontier's ClimateGLOBE data analytics framework

Council is in a period of significant strategic planning across multiple facets of development and management of its region. The role climate change will play in shaping the region in the future is clearly well understood by Council for some years given its previous work in this area, such as the *Review of Climate Change Assessment and Adaptation Initiatives* and *Kyogle Council Action Plan*.

The disaster events of the 2017 floods, 2019/2020 bushfires, and the 2022 floods have provided episodic event-driven examples of how anthropogenic climate change influences natural hazards and their severity. These events in turn have disrupted the availability of housing, how population is and is likely to be distributed throughout the region, and challenged the traditional dominance of certain population centres in the region like Lismore to accommodate growth.

According to the AdaptNSW Enabling Regional Adaptation – North Coast body of work from 2019, in the North Coast region, climate change is projected to result in:

- Increased heat
- Increased hillslope erosion
- Changing soil properties
- Increased rainfall extremes and erosivity
- Changing surface flows, runoff and recharge
- Increased drought
- Fire weather increases
- Changing east coast lows

Council's Key Needs – advancing beyond emissions targets and Council operations

The RfQ is very clear that this body of work needs to examine the emergent risk and impacts of climate change on the Kyogle LGA and community rather than Council operations that was covered by the *Review of Climate Change Assessment and Adaptation Initiatives* and *Kyogle Council Action Plan*.

We will utilise that work as a base, but in line with the RfQ our core focus of this work will be to move beyond the Council's operations and emissions setting / climate mitigation focus of the previous work to look more broadly and strategically at the **environmental domains** (refer to Figure 3 below) that exist within the LGA, namely the Economic, Human and Social, Natural, and Built environments – so that a holistic picture of climate change risk, impact, and opportunity can be better understood, anticipated and actively planned for as part of this Strategy and Action Plan.

Building on a review of Council's latest strategic documents and the broad suite of available climate science / regionally-specific literature, we will ensure our work articulates the latest climate change projections (downscaled to Kyogle LGA), the resultant physical trends, chronic stresses and episodic shocks those climate changes could create, and also highlight the locally-relevant transition risks¹ that need to be considered in the local strategy.

¹ Transition risks or opportunities may result from the move to a lower-carbon economy and can include market and technology shifts, policy and legal changes, or reputational damage.

We will also ensure there are clear pathways for implementation through Council's Climate Change Working Group so there can be a sustained delivery approach through this existing governance mechanism.

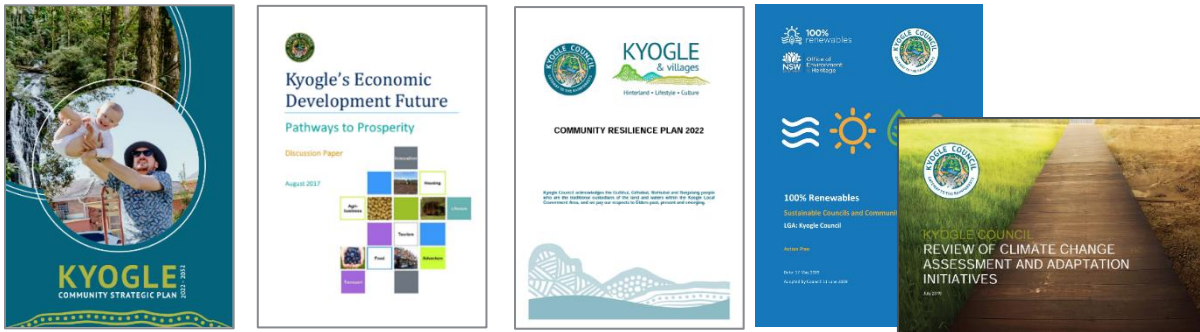
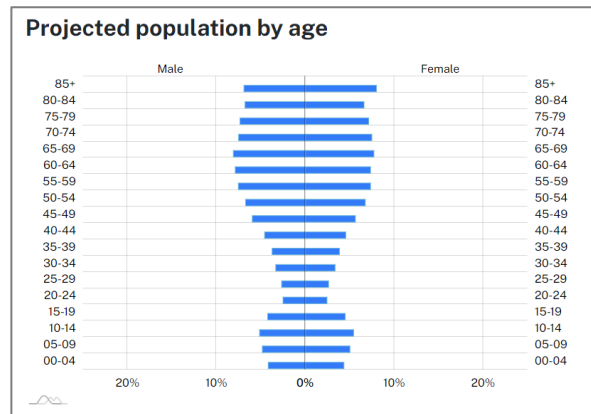


Figure 2: Council's latest suite of related strategic planning documents will inform and support the climate assessment

At the outset, we can see two key areas of focus relevant to the local context of Kyogle include its projected **aging population**, and the primacy of the **agriculture sector** to its economy. There will be other areas of focus identified through our work as we progress with the project.

Demographic projections by the Department of Planning and Environment (DPE) indicate a **significant aging** of the population within the near term (i.e by 2041) – well before the harshest of climate impacts are expected to manifest regularly.



Heat hazard is Australia's deadliest natural hazard, and it disproportionately affects older persons and infants. With the increasing number of hot days over 35C for the Kyogle area, heat stress in its projected aging population could emerge as a significant public health challenge over time.

Therefore, there is an increased role for community groups, health (including allied health) and not-for-profit service providers to better understand how climate change may increase heat stress for older individuals, and therefore alter methods of support or provide subsidies for air conditioning, etc for older persons.

Kyogle has a strongly-agricultural driven economy, with Agriculture, Forestry and Fishing generating \$199 million in 2021/22 – which equates to 31.6% of total economic output within the region. It is also growing proportionally as a sector in terms of output – up around 70% since the 2000/1 financial year.

Increased droughts, potential for increased bush fire and changing soil characteristics are hallmarks of the projected impacts on this sector. Rainfall patterns are also likely to change over the available data period. All of these elements are likely to alter erosion patterns and crop yields, but potentially also the type of cropping or grazing undertaken.



The biggest packer of "rain fed" or "dry land" rice is the Natural Rice Company. (ABC Landline: Pip Courtney)

The agriculturally-driven economy is and will be sensitive to the impacts of climate change into the future, however the sector by its nature is inherently adaptable due to its need to respond to changing market forces, commodity price fluctuation, input costs, etc. This adaptability plays heavily into the LGA's recent focus on approaches such as **regenerative agriculture** and **dryland rice production**² - which could be potentially more productive under the increased rainfall projections in the Kyogle area than is currently the case.

Liveability and **economic adaptability** could therefore be two key themes or principles to drive adaptation action within the LGA.

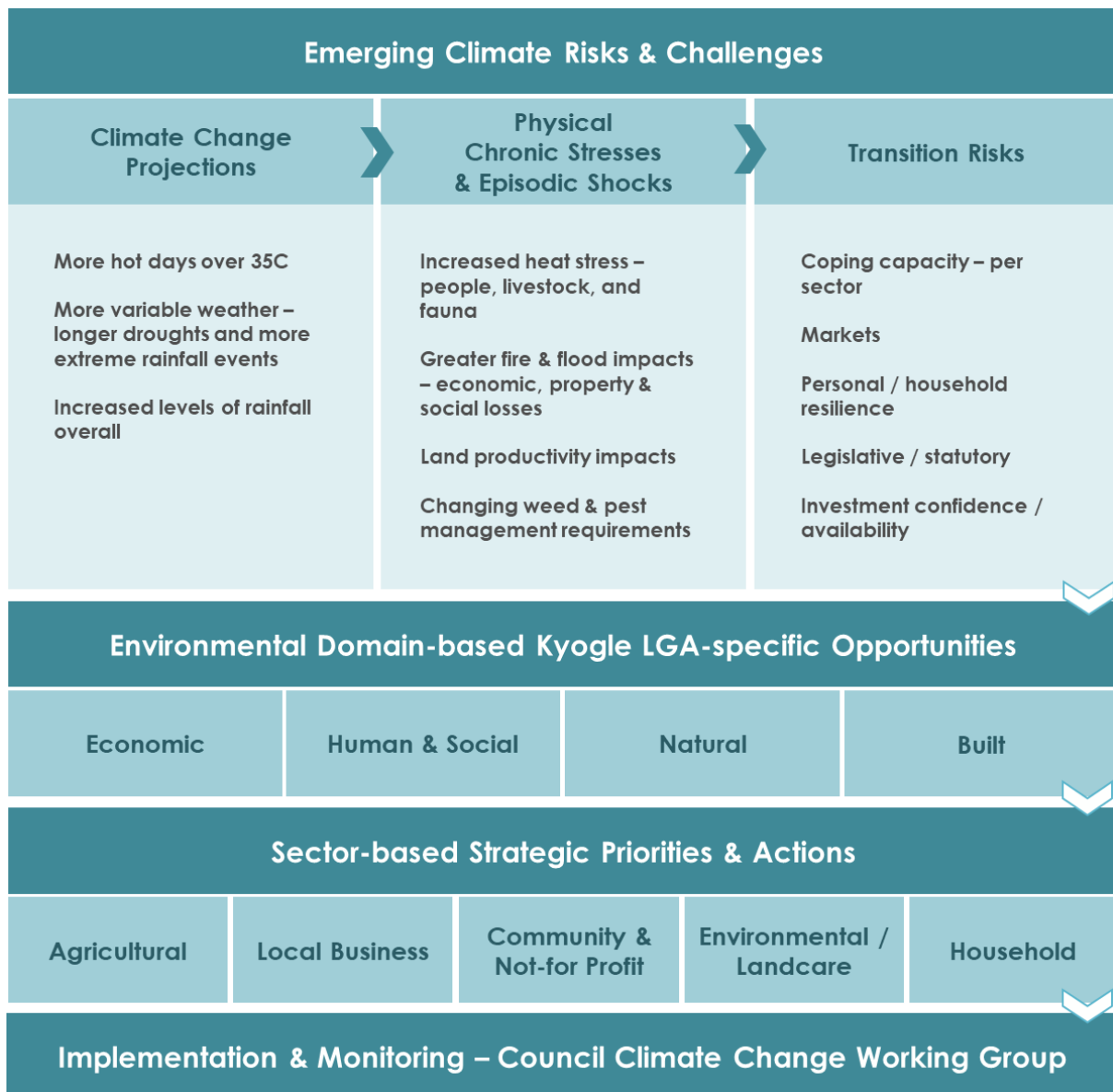


Figure 3: A 'roadmap' approach for addressing Council's key needs for the project - with a selection of climate impacts and risks

² <https://www.abc.net.au/news/2023-09-24/rice-grown-in-paddy-fields-climate-smart-crop/102861768>

Our Innovative Project Approach

Our approach with this work will be to utilise the technical, data-driven evidence that Risk Frontiers can provide through its natural hazard risk assessment and couple this with a contextual and place-based review of the drivers of community need and systemic vulnerability within the Greater Sydney area.

Co-design and collaboration

We know that Council holds significant local knowledge and project history, and we will align to and leverage that to provide the best consolidated outcome for the LGA.

Meaningful and trust-based relational collaboration are at the heart of our project delivery approach. We will ensure that we listen first and act to provide the support and evidence required to direct the work in line with Council aspirations for its broader programs of growth and adaptation.

An integrated lens – climate risk and broader resilience/adaptation considerations

We see there are two clear elements to this work – ensuring there is a data-driven approach to climate risk and its assessment, coupled with a broader synthesis of this risk analysis into the broader dimensions of vulnerability, systemic risk, and climate-driven opportunity that Kyogle is and will experience into the future.

The complex and systemic interplay of risk and opportunity across sectors, landscape, networks and communities, including the temporal dimensions of this, is not presently well understood. However, it is important that through this work we shine a light on the systemic risks and opportunities that can manifest through climate change impact – not just the quantifiable direct or indirect impacts on people and place.

To support this, we propose to utilise the Climate Risk Ready NSW Guide to support the development of a bespoke approach for Council. As NSW does not presently provide an equivalent guide tailored for local government (the Climate Risk Ready NSW Guide is targeted at State government entities), we can use the prescribed process and approach to downscale to a local government area context.

Below is our proposed project approach that highlights both the data driven and synthesis components, coupled with stakeholder engagement as a core driver of ensuring the work is locally-relevant and locally-driven.

Table 1: Climate Risk Ready risk assessment and management process

Process step	Page	Indicative time frame	Outputs
1 Step 1. Establish the context Establish an authorising environment and resources for climate change risk assessment and management			
Understand your organisation's climate risk management maturity	25	2 weeks	Completed Climate Risk Maturity Health Check Tool
Establish the reason for a climate change risk assessment and secure approvals	28	3 weeks	Briefing paper to secure an executive sponsor.
Identify stakeholders and establish an assessment team	30	2 weeks	List of stakeholders and assessment team members.
Determine the scope of the climate risk assessment	33	2 weeks	An agreed climate risk assessment scope
2 Step 2. Identify, analyse and evaluate the risks Establish a plausible climate future and document priority climate change risks			
Understand past and recent climate hazards and trends	41	3 weeks	A list of climate variables relevant to your context
Consult relevant climate projections	43	2 weeks	An understanding of projected climate change impacts
Identify risks and opportunities	46	3 weeks	A list of climate change risk statements
Analyse and evaluate risks	49	3 weeks	Priority climate risks with agreed risk ratings
3 Step 3. Treat the risks Develop an adaptation plan to treat priority climate change risks and increase climate risk maturity			
Identify and prioritise adaptation actions	53	3 weeks	A resourced adaptation plan including actions to improve climate change risk maturity
Develop and implement an adaptation plan	56	4 weeks	
4 Step 4. Monitor and review Monitor implementation of adaptation plans, climate change impacts and embed reviews in existing procedures and systems			
Develop a monitoring and evaluation plan	64	2 weeks	A plan to track adaptation implementation, and monitor climate risks
Integrate monitoring, review and learning into existing systems	68	4 weeks	An updated risk register

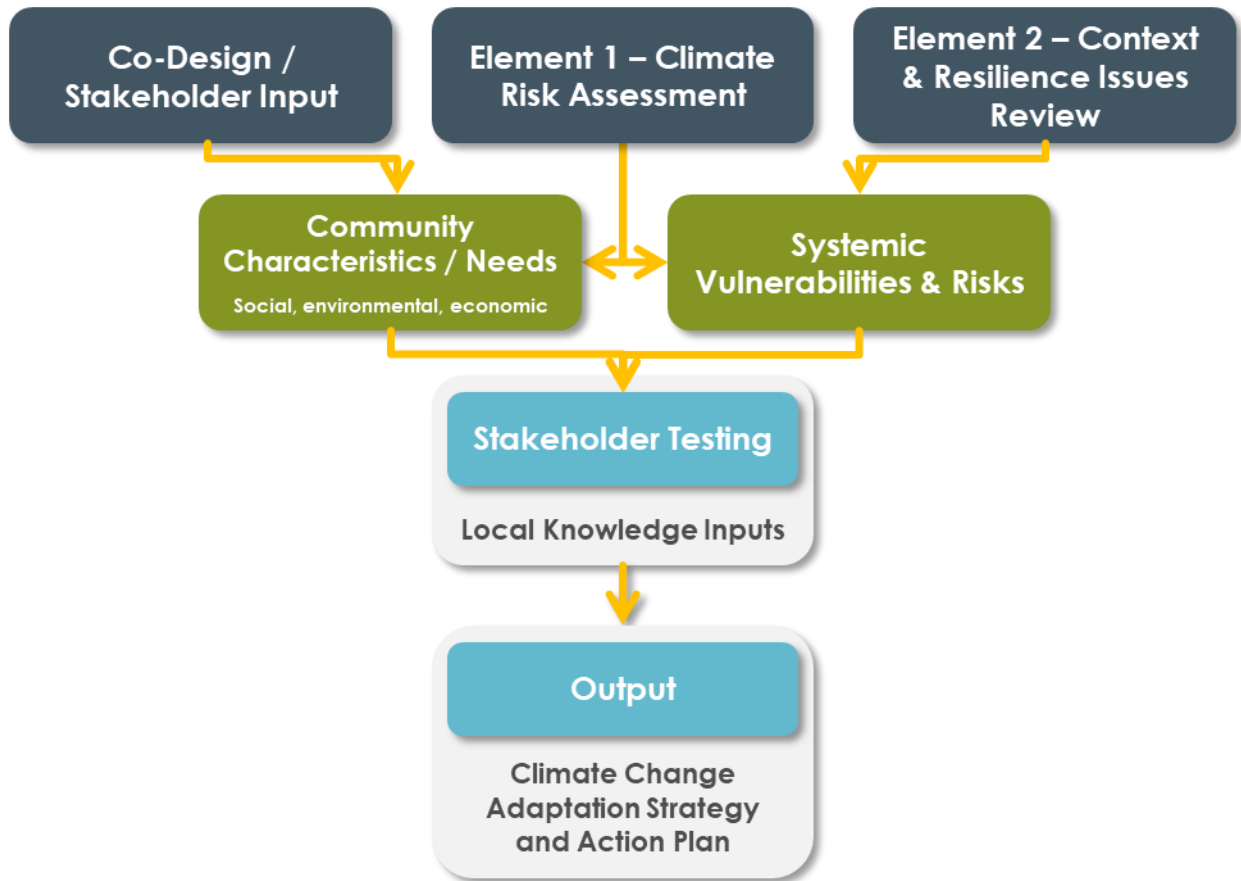


Figure 4: Our project approach – matching the data driven risk insights to a broader appreciation of the social, cultural, economic and environmental dimensions of communities at risk for testing and refinement through stakeholder engagement

3 Criterion 1 – Methodology and Approach

How we meet Criterion 1 – Methodology and Approach

- *We offer a logical and structured staged approach to the brief, ensuring that the key areas of climate data and risk, context review and assessment, and engagement are sufficiently integrated to deliver a clear and concise Adaptation Strategy and Action Plan*
- *A breadth of both climate science competency, and local knowledge from working both within Kyogle LGA and other LGAs across the region*
- *Our approach ensures a robust process by developing locally-relevant themes and priorities sourced from best practice climate risk and adaptation approaches combined with local engagement*

Our Climate Risk Credentials

Risk Frontiers provides access to regional climate model simulations including from the CSIRO, the Australian Bureau of Meteorology (BOM), and NARClIM 1.5 (NSW and Australian Regional Climate Modelling); these are the best available datasets for exploring Representative Concentration Pathway (RCP) scenarios: RCP4.5 and RCP8.5, as recommended in the recent Energy Sector Climate Information Project (ESCI). RCP2.6 regional climate model simulations, where required, are sourced from within the CORDEX program.

Although regional climate model simulations based on CMIP6 are not yet available, Risk Frontiers does have an ensemble of statistically downscaled CMIP6 global climate model simulations available for exploring all tier-1 Shared Socioeconomic Pathway (SSP) scenarios.

All climate model simulations are bias corrected using best-practice quantile mapping to ensure the modelled variable values are representative of observed climate.

For historical climate Risk Frontiers utilise data from the Australian Water Availability Project (AWAP) which spans >100 years, and supplement this with data from the European Centre for Medium Range Weather Forecasting (ECMWF) reanalysis. These gridded datasets allow seamless integration of spatially complete historical data with climate model projections.

Projections from Risk Frontier's climate models show with high confidence that temperatures will increase throughout the 21st century and beyond due to increasing concentrations of greenhouse gasses, primarily carbon dioxide. Changing temperatures will also affect rainfall patterns and other extreme weather events leading to changing natural hazards for many locations.

Risk Frontiers strives to be at the forefront of industry best-practice in developing hazard projections from global and regional climate model simulations. In 2020 we contributed to the Climate Measurement Standards Initiative ([CMSI](#)) and can provide expert advice on the optimum selection of datasets, scenarios, and time periods.

Risk Frontiers climate data analytic framework, ClimateGLOBE, provides modelled parameters and indices representing historical observations and possible future climate scenarios. Parameters are calculated from the best available gridded weather and climate data (See Appendix 1 for detailed information on climate models and scenarios) and are used to describe phenomenon of interest such as the occurrence of hot days, cool nights, heavy

rainfall days etc. Calculation of parameters is based on guidelines published by the World Meteorological Organisation ([WMO](#)) and Australian Bureau Of Meteorology ([BOM](#)).

For this project, selection of datasets, scenarios, and time periods will be determined in collaborative consultation with Kyogle local government.

Our Risk-based Adaptation Planning Framework

We have developed a common, place-based framework for understanding and implementing natural hazard risk reduction and climate adaptation considerations into local practice. This bespoke framework is drawn from our experience in undertaking work of this type previously, and our experience in developing various policy requirements for state governments.

Striving for sustainable development and community wellbeing even when stresses and shocks under a changing climate might occur is a core focus of the framework. This requires a multi-faceted view of the dimensions of risk, to ensure that future socioeconomic development occurs in a way that is both anticipative of the risks and tolerant or accepting of the residual risk.

Our risk-based adaptation planning methodology framework provides a 'first pass' or strategic assessment of context relative to risk and considers a wide range of place-based and contextual elements critical for the proper integration of risk into the future planning context.

This proposal, particularly our response to the Methodology criterion of the RFQ, is based upon deploying our adaptation framework for the specific needs of this project.



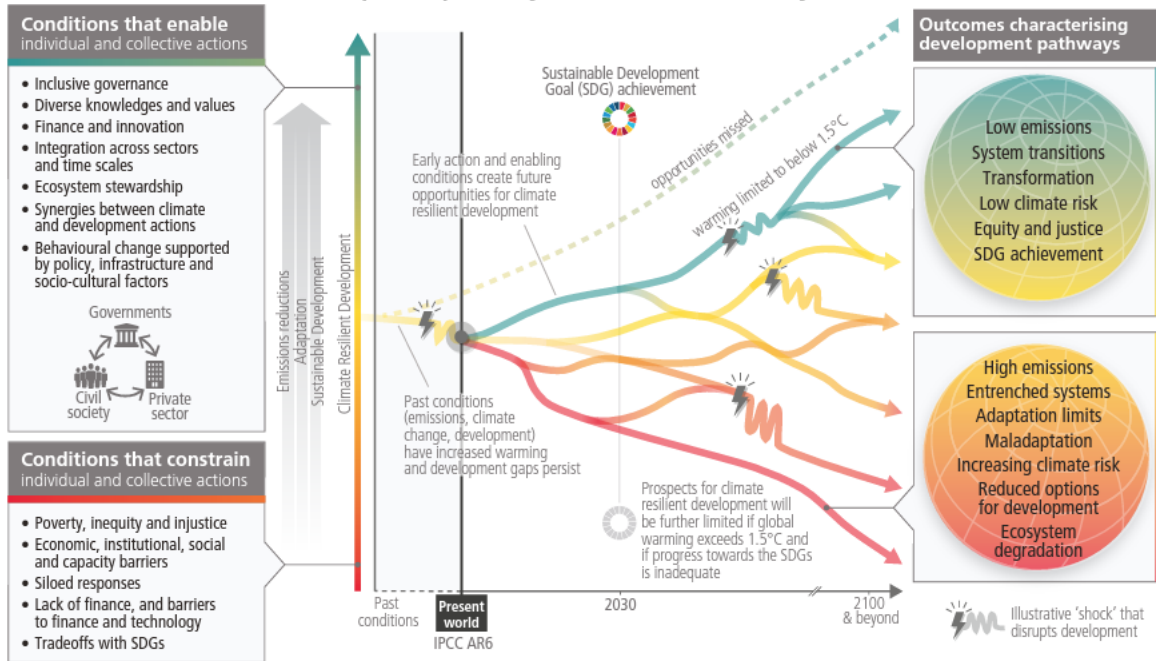
Figure 5: Our bespoke adaptation planning framework

This risk-based adaptation framework enables us to pursue climate resilient development as intended by the Intergovernmental Panel on Climate Change (IPCC). The recent IPCC Synthesis Report Summary for Policymakers advances the concept of Climate resilient development, which means reducing exposure and vulnerability to climate hazards, cutting greenhouse gas emissions, and effectively managing natural systems and the urban environment.

Elements of climate resilient development can be considered in all stages of adaptation planning and future socioeconomic development. Climate resilient development is enabled when governments, civil society and the private sector make inclusive choices that prioritise risk reduction, equity and justice, and when decision-making processes, finance and actions are integrated across governance levels, sectors and timeframes³.

There is a rapidly narrowing window of opportunity to enable climate resilient development

Multiple interacting choices and actions can shift development pathways towards sustainability



While an emerging approach, we find the concept of climate resilient development, and the various pathways available to advancing the concept, align very well with planning processes in other areas of Council responsibility – such as the Environmental Planning and Assessment Act, and the Integrated Planning & Reporting Framework.

Opportunities exist Kyogle to be cognisant of this emerging concept and put in place key concepts and approaches that begin to embed climate resilient development enablers into local scale planning for delivery and enhancement over time. We propose to advance our approach to this Strategy in this light, so it is as contemporary and up to date with emerging global practice as possible.

³ IPCC (2023), Climate Change 2023 Synthesis Report Summary for Policy Makers, available at https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf, accessed June 2023

Project Phasing

Based on our review of the RfQ, and our experience in undertaking projects of this type, we propose the following project phasing. This also aligns strongly with our concurrent delivery of the Growth Management Strategy – and so affords the opportunity to align common elements (such as engagement) as required.

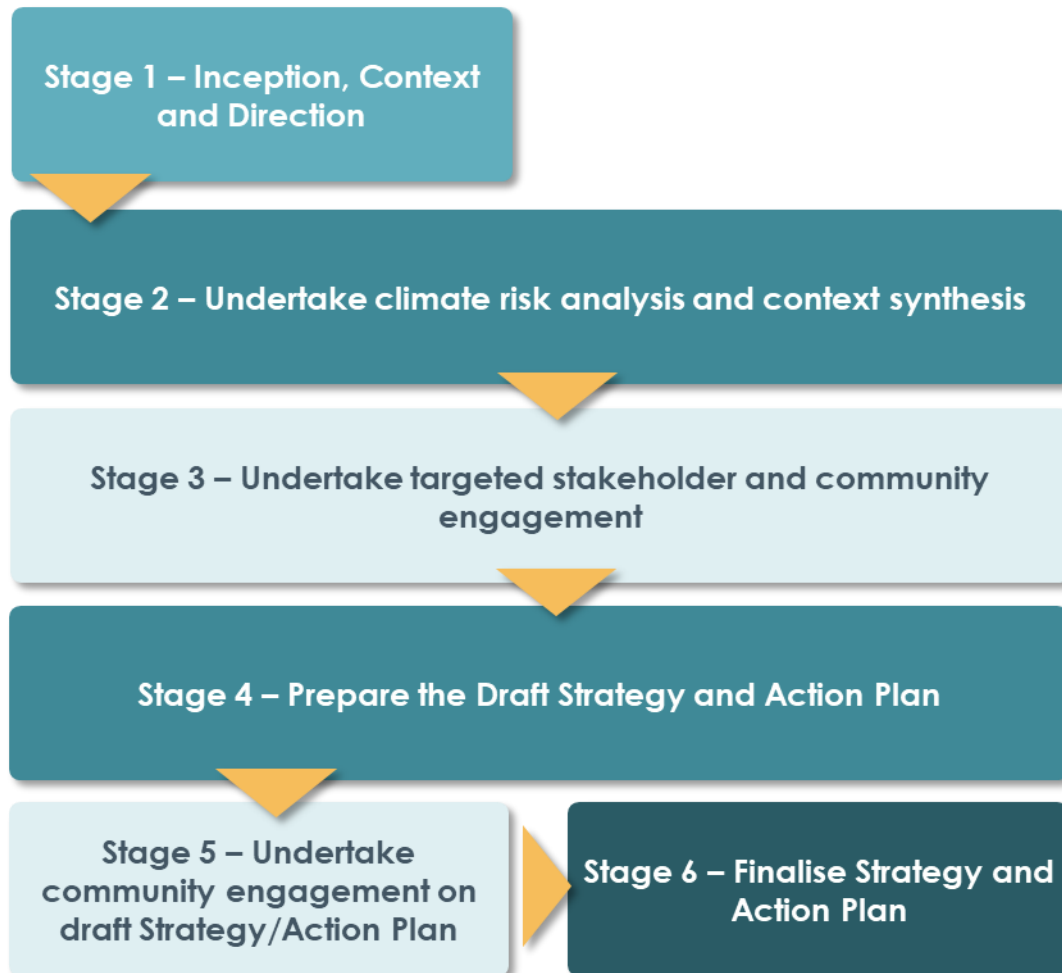


Figure 7: Proposed project phasing

Project delivery tasks

Table 1: Detailed summary of project phasing and tasking that meets the RfQ scope

Stages and Tasks	Key Deliverables	Target Date
Phase 1 – Inception, Context and Direction		
Task 1.1 – Inception meeting <ul style="list-style-type: none"> • 2- hour inception meeting (online via MS Teams) with Council, covering scope confirmation & timelines confirmation, data needs, stakeholder mapping, reporting & communications 	Inception meeting prep and attendance (online)	Week 1
Task 1.2 – Data collation and review <ul style="list-style-type: none"> • Develop list of desired data and existing Council documentation based on outcomes from inception meeting • Receive data from Council and other agencies/councils & review for completeness 	Data request memo	Week 2
Task 1.3 – Stakeholder engagement planning <ul style="list-style-type: none"> • Develop stakeholder engagement plan (consistent with Council's Community Participation Plan) focused on planning/timing for scheduling: <ul style="list-style-type: none"> ○ Face to face meetings with Council (including Councillors) ○ Internal Climate Change Working Group workshops ○ Targeted external engagement – Local growers / graziers, Chamber of Commerce, Environmental Groups, Social groups etc 	Stakeholder Engagement Plan (Community Participation Plan-compliant)	Week 3
Task 1.4 – Review and gap analysis of previous reporting <ul style="list-style-type: none"> • Undertake a detailed review of existing planning documents and technical reports to produce a brief Planning Context Paper, including summary of key issues/insights from: <ul style="list-style-type: none"> ○ 2019 Review of Climate Change Assessment and Adaptation Initiatives + Council Action Plan ○ North Coast Enabling Regional Adaptation Report (including background reporting) ○ Latest AdaptNSW guidelines and projections for Kyogle ○ North Coast Regional Plan 2041 ○ Council plans and studies, including (and as directed by Council): <ul style="list-style-type: none"> ○ 2022 – 2032 Community Strategic Plan ○ 2020 Local Strategic Planning Statement ○ 2017 Pathways to Prosperity Discussion Paper ○ 2022 Community Resilience Plan 	Gap analysis memo	Week 6

Stages and Tasks	Key Deliverables	Target Date
<ul style="list-style-type: none"> Define gaps and opportunities for this work to address / take forward and refine with Council 		
Task 1.5 – Direction setting paper <ul style="list-style-type: none"> Drawn from co-design workshop outcomes, results of data collation/review, and gap analysis of previous work Develop a brief directions setting paper that outlines proposed approach, adaptation roadmap, environmental domains, emerging priorities and themes, areas of further focus for delivery as part of subsequent phases of the project 	Direction setting paper	Week 8
Task 1.6 – Ongoing project management <ul style="list-style-type: none"> 30 minute fortnightly progress meetings (online) 	Ongoing	Throughout

Stages and Tasks	Key Deliverables	Target Date
Phase 2a – Climate risk analysis		
Task 2.1 – Risk assessment risk analysis and preparation <ul style="list-style-type: none"> Build risk database based on Risk Frontier's existing risk databases Prepare reporting in accordance with RfQ requirements Prepare initial risk assessment report 90 minute online briefing to Council to present initial findings 	Initial Draft Risk Analysis Online session with Council	Week 8
Task 2.2 – Risk data compilation <ul style="list-style-type: none"> Prepare Risk Data suite (mapping etc) at agreed scale with Council Finalise risk analysis 	Updated Risk Analysis	Week 10

Stages and Tasks	Key Deliverables	Target Date
Phase 2b – Context and Synthesis paper preparation		
Task 2.3 – Context Paper Structure Development <ul style="list-style-type: none"> Build upon gap analysis in Phase 1 and Risk Analysis in Phase 2a to develop a draft Context & Synthesis Paper structure suitable for the purpose 90 minute online briefing with Council to discuss and confirm structure 	Draft structure of Context Paper	Week 12

Stages and Tasks	Key Deliverables	Target Date
	Online session with Council	
Task 2.4 – Draft/initial Context Paper Research and Preparation <ul style="list-style-type: none"> • Undertake literature review component of the paper, including: <ul style="list-style-type: none"> ○ Build on gaps identified in Phase 1 gap analysis ○ Conduct broader research / literature review of national, state and local context documentation • Input social, economic, environmental projections and indicators synthesis 	Initial Draft Context Report	Week 16

Stages and Tasks	Key Deliverables	Target Date
Phase 3 – Targeted stakeholder and community engagement		
Task 3.1 – Workshop activities design & materials preparation <ul style="list-style-type: none"> • Develop initial engagement purpose, and possible activities/runsheet • Test approaches via half-day in person workshop with Council and refine • Finalise design and materials preparation 	Workshop design Runsheet and materials preparation	Week 16
Task 3.2 – Climate Change Working Group Workshop delivery <ul style="list-style-type: none"> • Deliver one half-day in-person workshop within the Council Climate Change Working Group to present on initial findings, direction / approach and confirm next steps to progress to preparing the Adaptation Strategy and Action Plan 	Workshop delivery	Prior to Week 18
Task 3.3 – Councillor Briefing <ul style="list-style-type: none"> • Deliver a 90-minute in-person Councillor briefing (preferably on same day as Climate Change Working Group) to: <ul style="list-style-type: none"> ○ Introduce the project and describe its purpose / background / outcomes ○ Present the work to date, including climate risk findings and issues ○ Seek commentary / advice on opportunities and priorities to advance as part of the Strategy/Action Plan ○ Seek support/confirmation of Strategy approach 	Councillor briefing workshop preparation and attendance	Prior to Week 18
Task 3.4 – External Stakeholders Workshop <ul style="list-style-type: none"> • Deliver a 2-hour in-person workshop and consultation session with external stakeholders (developed via the Engagement Strategy in Task 1.3 – and preferably the day after Tasks 3.1 & 3.2) to: <ul style="list-style-type: none"> ○ Introduce the project and describe its purpose / background / outcomes ○ Present the work to date, including climate risk findings and issues – including possible implications for each sector 	External stakeholders workshop preparation and attendance	Prior to Week 18

Stages and Tasks	Key Deliverables	Target Date
<ul style="list-style-type: none"> o Seek commentary / advice on opportunities and priorities to advance as part of the Strategy/Action Plan 		
Task 3.5 – Stakeholder feedback synthesis <ul style="list-style-type: none"> • Review feedback / comments from stakeholders and develop synthesis / comment integration tracking sheet 	Engagement synthesis (included in updated Context and Synthesis Paper)	Week 20

Stages and Tasks	Key Deliverables	Target Date
Phase 4 – Prepare the Draft Strategy and Action Plan		
Task 4.1 – Populate agreed document structure <ul style="list-style-type: none"> • Develop an initial document structure for confirmation with Council and draft components of the Strategy and Action Plan that are drawn directly from previous stages (such as background, context, drivers, issues, vision etc) 	Initial draft document	Week 26
Task 4.2 – Prepare full draft Strategy and Action Plan <ul style="list-style-type: none"> • Progress to preparing full draft Strategy and Action Plan based on confirmation of initial structure and approach 	Full draft document	Week 28
Task 4.3 – Refine to final draft based on Council feedback <ul style="list-style-type: none"> • Review feedback / comments from Council and develop a full final draft ready for external engagement 	Full final draft document	Week 32

Stages and Tasks	Key Deliverables	Target Date
Phase 5 – Undertake community engagement		
Task 5.1 – Provide targeted community engagement support to Council <ul style="list-style-type: none"> • Preparation of briefing materials for engagement, including: <ul style="list-style-type: none"> o 2-page brochure on the purpose, function, vision and impact of the GMS for public release o Introductory content for Council website o Preparation of online survey to capture community feedback (if Council does not already subscribe to an online engagement platform) 	Initial draft document	Week 34

Stages and Tasks	Key Deliverables	Target Date
Task 5.2 – Prepare submissions report <ul style="list-style-type: none"> Set up a submissions database (MS Excel database) and input submissions into database for reporting as part of submissions report Prepare brief submissions report, recording: <ul style="list-style-type: none"> Notification and engagement statistics Key issues and opportunities raised Next steps for finalisation of the Strategy and Action Plan 	Submissions report (draft and final)	Week 38
Task 5.3 – Undertake Councillor briefing <ul style="list-style-type: none"> Deliver a 90-minute in-person Councillor briefing to: <ul style="list-style-type: none"> Brief the results of the engagement Discuss policy issues and seek resolution on outstanding matters Seek support/confirmation of the Strategy approach to finalisation 	Councillor briefing workshop preparation and attendance	Week 38

Stages and Tasks	Key Deliverables	Target Date
Phase 6 – Finalise Strategy and Action Plan		
Task 6.1 – Post consultation refinements <ul style="list-style-type: none"> Perform updates to draft Strategy and Action Plan based on receipt of agreed engagement-led directions (assuming one round of consolidated & integrated/non-conflicting feedback) This will include preparation of a locally-refined AdaptNSW Climate Risk and Adaptation Monitoring Template to support the ongoing implementation by the Climate Change Working Group 	Final Strategy and Action Plan document	Week 42
Task 6.2 – Final briefing to Councillors <ul style="list-style-type: none"> Provide in-person support to Council officers to conduct a 90 minute briefing to Councillors (based on Council report to be prepared by Council officers) 	Councillor briefing workshop preparation and attendance	Week 43
Task 6.3 – Data handover and project closeout <ul style="list-style-type: none"> Handover of project data, files, mapping, etc 	Documentation suite	Week 44

4 Criterion 2 – Key Personnel, Past Experience & Resources

How we meet Criterion 2 – Key Personnel

- *Our project team is led by executive level personnel within our business, including the Company Director Stephen Dredge, and Associate Director Kim Kirstein, who offer nationally-recognised adaptation and resilience planning capabilities.*
- *Stuart Browning and Ryan Crompton from Risk Frontiers are internationally-renowned climate risk experts....*
- *We have compiled a supporting team with diverse expertise across key areas of focus for this Plan review such as land suitability analysis, economics and environment. We have specifically partnered with Risk Frontiers in this commission for their industry-defining climate risk science capabilities and risk analyses.*
- *Both our project team and firms have the requisite depth of capability and capacity to meet the timeframe and project delivery expectations of Council for this RFQ.*

Project team structure

Our team structure for this project is provided in Figure 10 below. We propose a small team with targeted expertise for this project given the uniqueness of the cultural, environmental and economic aspects of this regional / remote location.

Our project team brings together comprehensive multi-disciplinary skillsets with a focus on supporting Council with its adaptation planning journey. We will do this with a focus on evidence-driven solutions and identification of fit-for-purpose action planning that aligns with the region's economic, social welling and environmental needs and aspirations. CVs are provided in Appendix A.

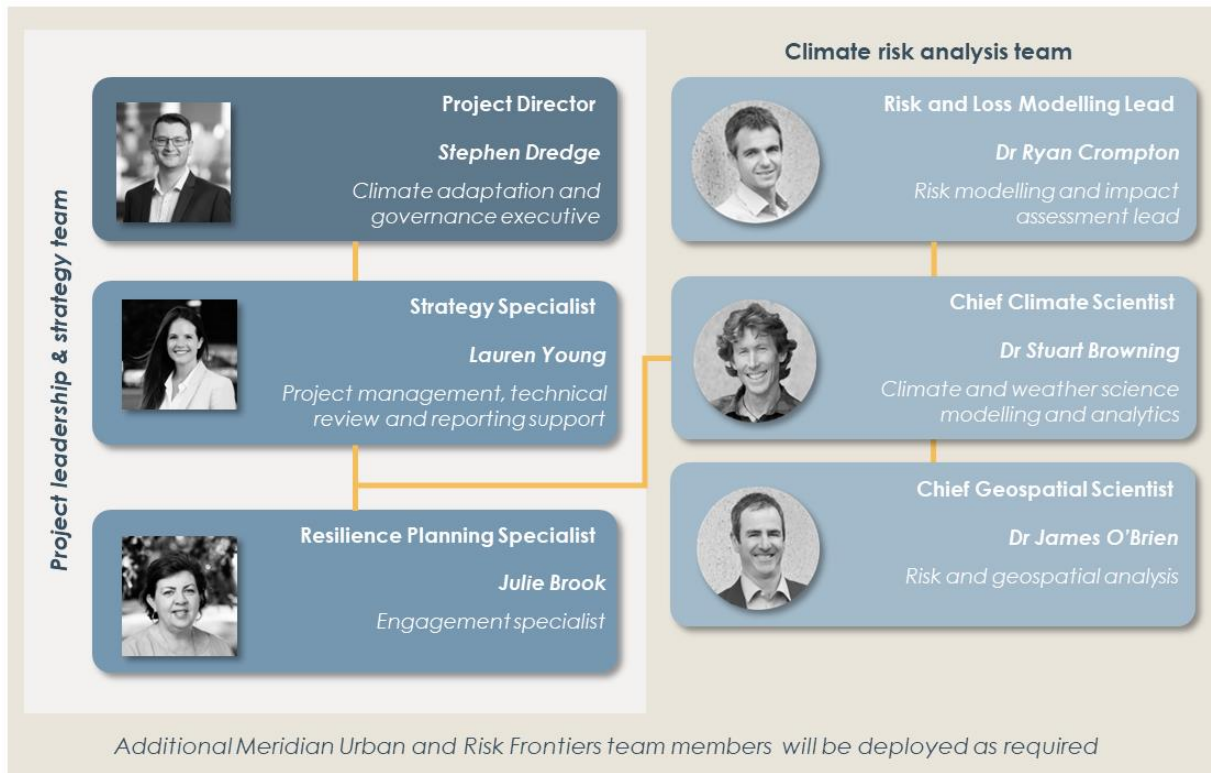


Figure 8: Our expert project team for this commission

Stephen Dredge is Meridian Urban's Director and is a trusted advisor to government and communities in resilient urban growth management, disaster risk reduction, and adaptation. He has designed and delivered multi-year and multi-million dollar resilience planning programs that have influenced for the better where and how our settlements grow and evolve. He has a passion for enabling local communities to realise their visions for sustainable and resilient settlements. He will lead the strategic direction and technical approach to the project.

Ryan Crompton leads Risk Frontiers and has expertise in the development of catastrophe loss models and physical climate risk solutions. He has extensive hands-on experience in assessing the impacts of natural hazards on Australian communities. He will provide technical leadership to the Risk Frontiers team.

Lauren Young has a wide range of research, resilience, and planning experience and will provide technical support to project team, particularly for the Context Report and other project reporting

Dr Stuart Browning is the Chief Climate Scientist at Risk Frontiers, and will act as the main project lead for the risk assessment team. He has extensive experience in the analysis of weather and climate in the Australian and Asia-Pacific. Stuart's work focuses on understanding the large-scale climatic drivers of extreme weather events to better quantify risk over seasonal to multi-decadal timescales.

Julie Brook is a resilience planning professional who has designed and delivered local and state resilience plans and programs across Australia. She is particularly well-versed in post disaster recovery processes that build community resilience. With her MBA and project management skills, Julie will act as the project manager for the project to ensure it keeps to the required timeframes.



Dr James O'Brien is Risk Fronter's Chief Geospatial Scientist, who will support Stuart with the risk assessment components of the project, while Steven George will also lend further support, particularly for resilience indicators and measurement.

Our key personnel

Table 2: Our key personnel and their expertise

	Key Skills	Biography
 <p>Stephen Dredge Project Director</p>	<ul style="list-style-type: none"> Sustainable & resilient growth management Strategic land use planning Governance & policy implementation Risk based decision making and regulatory responses Executive-level and community engagement <p>Role in Project</p> <p>Stephen will lead the strategic direction and perform engagement with Council and external stakeholders.</p>	<p>Stephen is a growth management, plan-making and governance executive with 20 years of management-level Australian and international experience in the public sector, development industry and in private practice. Stephen is a trusted advisor in sustainable and resilient urban growth management planning, urban policy development, and governance change management in uncertain decision contexts. His technical strengths lie in management consulting, strategic land use planning, and statutory planning. He has designed, led and delivered several multi-year and multi-million dollar planning programs that have influenced for the better where and how our settlements develop. Stephen also undertakes complex and challenging facilitation and engagement activities with government executives, elected officials, and the community.</p> <p>He holds particular interest and industry-defining expertise in sustainable development, disaster risk reduction and climate adaptation. He has developed and implemented such initiatives in the built and socio-economic environments at regional and local scales across Australia, securing millions of dollars in funding and built projects for local communities to realise their visions for sustainable and resilient settlements.</p>
	<ul style="list-style-type: none"> Strategic planning Resilience and adaptation planning Project reporting and delivery Project management <p>Role in Project</p>	<p>Lauren is an Associate-level urban planner with over 10 years of experience in strategic planning, policy development and master planning. She has worked in both the public and private sectors in Queensland and the Middle East. Lauren is also an admitted Australian Lawyer in the Supreme Court of Queensland.</p> <p>Lauren brings a depth of experience in polciy development and adaptation planning. She has developed a particular competency and interest in climate-adapted</p>

	Key Skills	Biography
 <p>Lauren Young <i>Planning Specialist</i></p>	<p>Lauren will project manage and lead the technical delivery of the project. She will be the primary point of contact for Council.</p>	<p>sustainable development, and the integration of natural hazard risk reduction into settlement planning and urban growth</p> <p>Lauren is highly analytical and seeks to employ her experience and creativity to determine the best approach for dealing with complex challenges relating to the built and natural environment. Her legal training also lends to her ability to understand and navigate regulatory systems and frameworks.</p>
 <p>Julie Brook <i>Adaptation Engagemnt Specialist</i></p>	<ul style="list-style-type: none"> • Adaptation and resilience planning • Engagement planning and delivery • Local government implementation • Policy development • Project management <p>Role in Project</p> <p>Julie will support Stephen and Lauren with the development and delivery of the engagement components of the project.</p>	<p>Julie is a resilience and adaptation planning professional who has designed and delivered local and state plans and programs across Australia. She is particularly well-versed in post disaster recovery processes and adaptation pathways planning that build community resilience.</p> <p>She is a government policy integration and implementation specialist with well over a decade of industry experience across the public and private sectors. Her business focus and Masters qualification promotes strong project management skills and a strong interest in governance, maintaining a holistic outlook on major projects.</p> <p>In recent years she has developed a strong capability community-led disaster resilience and climate adaptation projects, creating synergies with strategic land use planning and resilience or adaptation policy and implementation for built environment, advancing collective resilience outcomes.</p> <p>Julie was integral to the rollout of Queensland's first resilience planning program – the QRA's Resilient Queensland 2018-22 program of works.</p> <p>She has also expanded her governance and management expertise to Monitoring, Evaluation and Learning (MEL), with a qualification from the International Training Centre of the International Labour Organization of the UN, based in Turin, Italy.</p>

	Key Skills	Biography
 <p>Ryan Crompton <i>Risk Lead</i></p>	<ul style="list-style-type: none"> Strategic advisory Climate change thought leadership Measurement development Quality control and reporting 	<p>Ryan leads Risk Frontiers and has expertise in the development of catastrophe loss models and physical climate risk solutions. He has extensive hands-on experience in assessing the impacts of natural hazards on Australian communities.</p> <p>Ryan has undertaken a wide variety of projects for domestic and international (re)insurance companies and their brokers as well as government and non-government organisations. His research background is in natural disaster losses and climate change including the application of insurance modelling tools to climate change adaptation decision-making relating to the built environment.</p> <p>Ryan was a member of the Scientific Committee of the industry-led Climate Measurements Standards Initiative (CMSI) in Australia. He has appeared at Royal Commission and Senate Committee Inquiries and contributed to Risk Frontiers' submissions to several other Government Inquiries relating to natural disasters.</p> <p>Ryan is the author of numerous scientific and industry publications.</p>
 <p>Stuart Browning <i>Climate Lead</i></p>	<ul style="list-style-type: none"> Climate science Climate modelling Data modelling Risk analysis Reporting and presentations 	<p>Stuart is Climate Risk Scientist at Risk Frontiers, with extensive experience studying the weather and climate of coastal and alpine environments in the Australian and Asia-Pacific region.</p> <p>Stuart's work focuses on understanding the large-scale climatic drivers of extreme weather events to better quantify risk over seasonal to multi-decadal timescales. Stuart has produced a range of scientific publications, consultant and technical reports on extreme coastal weather, wave climate, East Coasts Lows, and extreme bushfire weather.</p> <p>Using a range of data and tools, including reanalysis data, model simulations, and paleoclimate records, Stuart's work spans multiple timescales, from the dynamical evolution of individual weather systems through to the multi-centennial scale evolution of the climate system.</p>

Similar projects with other Councils and Agencies

Our project team brings a depth of climate adaptation, resilience planning and strategic planning experience across NSW and other states that are all relevant to this commission. We have particular experience in climate adaptation in **rural eastern Australian settings** as required by the RfQ.

Examples of current and recently complete work with a direct relationship to the scope is provided in Table 3-1 below.

Table 4-3: Relevant recent project experience

Client	Project Description and Relevance to Council Need
	<p>Kyogle Growth Management Strategy – 2023</p> <p>Meridian Urban has recently commenced the preparation of Council's Growth Management Strategy. This body of work will build upon recently strategic planning work undertaken by Council (such as the Local Strategic Planning Statement and Community Strategic Plan) to develop a contemporary growth management direction for the LGA that is cognisant of the recent natural hazard events and underlying competitive advantages of the region to set an aspirational focus on sustainable development into the future.</p> <p>There are key areas of alignment between the Climate Change Adaptation Strategy and Action Plan and this Growth Management Strategy – both strategically (given the critical role climate adaptation should play in informing the Growth Management Strategy), and operationally given common project elements such as stakeholder engagement can be undertaken concurrently to create efficiencies and reduce/avoid engagement fatigue with community.</p>
	<p>Northern Rivers Resilient Lands Strategy – 2023</p> <p>Through its disaster resilience and climate adaptation services, Meridian Urban provides a critical service offer within the town planning sector by supporting its local and state government clients with post-disaster recovery initiatives such as urban reconstruction plans and urban development/land release strategies so that communities can move to safer places. This has been informed by the long track record Meridian Urban staff have had in this space, from the relocation of the town of Grantham, Queensland in 2011, to the recovery process from the Canterbury, NZ earthquake, to the 2022 Southern Queensland and Northern Rivers floods.</p> <p>The regional-scale, urban development oriented Resilient Lands Strategy identifies a sustainable supply of land and housing options for flood impacted residents in the Northern Rivers. The Strategy identifies sites that can relocate flood impacted residents to safer ground (even considering climate change) and in doing so help reduce the community's exposure to natural hazard risk and help create a more resilient Northern Rivers.</p> <p><i>Meridian Urban has developed an in-depth knowledge of local and regional issues such as the current housing crisis and needs, emerging economic drivers of growth, and community sentiment on development through this work.</i></p>

Client	Project Description and Relevance to Council Need
	<p>Clarence Valley Climate Change Impact Assessment – 2021</p> <p>Risk Frontiers was commissioned by Clarence Valley Council to undertake a climate change impact assessment to inform strategic planning activities. As part of this work, Risk Frontiers quantified the current natural hazard risk to local government infrastructure assets and projected changes for a range of future climate scenarios. Hazards included flood, bushfire, drought, heatwave, sea level rise, storms and tropical cyclones.</p>
	<p>Blueprint for a Resilient South East NSW – 2022</p> <p>Meridian Urban and Risk Frontiers worked as an integrated project team to support the CRJO to develop a climate and natural hazard risk-oriented regional resilience plan that could support the community's recovery to resilience journey following the 2019/20 Black Summer Bush Fires. This included consideration of climate change to ensure the recovery to resilience process also considered climate adaptation needs and approaches.</p> <p>This involved developing a bespoke climate change assessment methodology and undertaking a significant community engagement program with several thousand community interactions and hundreds of individual participants.</p>
	<p>Wentworth and Balranald Drought Resilience Plan – 2023</p> <p>Meridian Urban and Risk Frontiers have recently developed one of the first Regional Drought Resilience Plans under the NSW Drought Resilience Planning Program funded by the Commonwealth Department of Agriculture and Fisheries under the Future Drought Fund.</p> <p>This work involved both a historic and climate change assessment of drought exposure, risks and impacts, and developed pathways across the Prevent, Prepare, Respond, Recover cycle of risk management to develop place-based priorities and actions to better anticipate and manage the increasingly challenging affects of drought on these highly agricultural communities.</p>
	<p>Hilltops and Upper Lachlan Drought Resilience Plan – 2022</p> <p>Meridian Urban and Risk Frontiers developed one of the three pilots for the NSW RDRP program, for the LGAs of Hilltops and Upper Lachlan. Our integrated project team assisted the Canberra Region Joint Organisation to develop this plan for these agricultural communities in Central NSW.</p> <p>Like our approach to the Wentworth and Balranald RDRP, this plan was based on quantifying historical and projected climate impacts and ensuring the actions developed by the plan considered and addressed those impacts.</p>
	<p>Macquarie Bank Physical Climate Risk Assessment – 2020</p> <p>Risk Frontiers undertook a physical climate risk assessment on Macquarie Bank's Australian mortgage portfolio using our suite of catastrophe loss models for Flood, Hail, Tropical Cyclone and Bushfire. A range of climate scenarios and time frames were explored. This work formed part of Macquarie's 2019/2020 public Climate-related Financial Disclosure and can be found here.</p>

Client	Project Description and Relevance to Council Need
	<p>Climate Risk Assessment – Major Electricity Providers – 2022</p> <p>Risk Frontiers, with partners KPMG, undertook physical climate risk assessments for major electricity providers to identify impacts across their assets. The project involved the analysis of climate data to understand network vulnerability.</p>
	<p>Natural Hazards and Climate Change Risk Assessment</p> <p>Utilising Risk Frontiers' catastrophe loss modelling and PERIL AUS database Risk Frontiers undertook a national natural hazard and climate change risk assessment for the Bureau of Meteorology. The results have assisted to establish the research and climate hazard identification / modelling priorities of the new Australian Climate Service.</p>
	<p>Statewide Regional Resilience Strategy Program</p> <p>From 2017-22, Meridian Urban led the program design and technical delivery of all disaster resilience actions and activities under Resilient Queensland 2018 – 2021: the Engagement and Implementation Plan for the Queensland Strategy for Disaster Resilience – including the development of 16 first-of-their-kind regional resilience strategies across Queensland and local resilience action plans for all 77 of Queensland's local governments – a total of 77.</p> <p>Climate change projections and considerations were inherently integrated into this work, so that local disaster resilience needs, actions and projects identified as part of the program and the local action plans were climate-informed.</p> <p>This work (found here) was Australia's first Voluntary Commitment under the Sendai Framework for Disaster Risk Reduction, completed in 2022.</p>
	<p>Cairns Local Growth Management Strategy – Safe Growth</p> <p><i>Resilience and adaptation for 2050 and beyond</i></p> <p>Meridian Urban is presently supporting Cairns Regional Council in Queensland with its Cairns 2050 local growth management strategy.</p> <p>The settlement pattern of Cairns is subject to a range of environmental natural hazard constraints, including in key areas for capital investment and growth such as the CBD, coastal communities, and land release areas. This risk profile is increasing over time with sea level rise and the broader effects of climate change.</p> <p>Council is wishing to ensure that optimal use of the finite amount of unconstrained land is a core driver of the settlement pattern in the upcoming LGMS. This focus on risk avoidance and reduction in creating a resilient settlement pattern can provide the opportunity to advance the concept of climate resilient development encouraged by the Intergovernmental Panel on Climate Change (IPCC).</p> <p>Council has engaged Meridian Urban to support the growth management process by delivering a comprehensive integrated hazards assessment and a mitigation and adaptation options paper for integration into the broader LGMS workflow. This uses our Land Suitability Model, tests unmitigated and mitigated development scenarios, and sets preferred growth scenarios based on our resilient growth model concepts.</p>

5 Criterion 3 – Pricing

How we meet Criterion 3 – Price

- We offer a highly competitive, value for money fee proposal to meet the identified scope of works with rates that are generally lower than industry-standard – including a discounted rate for senior staff
- Our approach is to deploy senior staff to undertake the required reviews, which reduces total time and increases the opportunity to truly understand the issues in play
- Our costing is all-inclusive, and includes travel costs associated in-person workshops
- We offer a multi-disciplinary resourcing mix within our project team. We have the appropriate personnel to conduct all aspects of the required scope, and have further depth of capability to bring on additional resourcing as needed.

Pricing schedule

The following section outlines our proposed pricing arrangements for this commission. A **lump sum price of \$79,600 ex GST** is offered based on both a commitment to working with the Council, and additionally discounted hourly rates for senior staff, as per the fee schedule and rates in Tables 5-1 and 5-2 below.

Travel costs are inclusive in the rates below, providing substantial value for money for Council.

Table 5-1 - Pricing schedule

Positions	Director	Principal	Associate	Climate Lead	Climate Risk Data	BUDGET
Team Member	SD	JB	LY	SB	SG	
Hourly Rate	290	270	240	325	5,000	
PHASE 1 - Inception, Context and Direction						
Task 1.1 - Inception Meeting	2		2	2		\$ 1,710.00
Task 1.2 - Data Collation & Review						\$ -
Task 1.3 - Stakeholder engagement planning			4			\$ 960.00
Task 1.4 - Review & Gap Analysis of Previous Reports			16			\$ 3,840.00
Task 1.5 - Direction setting paper	4		16			\$ 5,000.00
Task 1.6 - Project Management (0,hr/fortnight)			12			\$ 2,880.00
Total Billable Hours Per Phase Per Person	6	0	50	2	0	\$ 14,390.00
Total Billable Cost Per Person Per Phase	\$1,740.00	\$0.00	\$12,000.00	\$650.00	\$0.00	\$ 14,390.00
PHASE 2 - Climate risk analysis and context synthesis						
Task 2.1 - Risk assessment preparation				16		\$ 5,200.00
Task 2.2 - Risk data compilation				8	1	\$ 7,600.00
Task 2.3 - Context Paper Structure Development	4		8			\$ 3,080.00
Task 2.4 - Context Paper Research & Preparation	8		32			\$ 10,000.00
Total Billable Hours Per Phase Per Person	12	0	40	24	1	\$ 25,880.00
Total Billable Costs Per Phase Per Person	\$3,480.00	\$0.00	\$9,600.00	\$7,800.00	\$5,000.00	\$ 25,880.00

PHASE 3 - Targeted stakeholder and community engagement						
Task 3.1 – Workshop activities design & materials preparation			8			\$ 2,160.00
Task 3.2 – Climate Change Working Group Workshop delivery	4	4	4			\$ 3,200.00
Task 3.3 – Councillor Briefing	2	2	2			\$ 1,600.00
Task 3.4 – External Stakeholders Workshop	4	4	4			\$ 3,200.00
Task 3.5 – Stakeholder feedback synthesis		4				\$ 1,080.00
Total Billable Hours Per Phase Per Person	10	22	10	0	0	\$ 11,240.00
Total Billable Costs Per Phase Per Person	\$2,900.00	\$5,940.00	\$2,400.00	\$0.00	\$0.00	\$ 11,240.00

PHASE 4 - Prepare draft strategy and action plan						
Task 4.1 Populate agreed document structure	2		8	6		\$ 4,450.00
Task 4.2 Prepare full draft Strategy and Action Plan			32			\$ 7,680.00
Task 4.3 Refine to final draft based on Council feedback	2		8			\$ 2,500.00
Total Billable Hours Per Phase Per Person	4	0	48	6	0	\$ 14,630.00
Total Billable Costs Per Phase Per Person	\$1,160.00	\$0.00	\$11,520.00	\$1,950.00	\$0.00	\$ 14,630.00

PHASE 5 - Undertake community engagement						
Task 5.1 Targeted engagement support	2		8			\$ 2,500.00
Task 5.2 Submissions report			12			\$ 2,880.00
Task 5.3 Councillor briefing	2					\$ 580.00
Total Billable Hours Per Phase Per Person	4	0	20	0		\$ 5,960.00
Total Billable Costs Per Phase Per Person	\$1,160.00	\$0.00	\$4,800.00	\$0.00		\$ 5,960.00

PHASE 6 - Finalise Strategy and Action Plan						
Task 6.1 – Post-consultation refinements (incl. AdaptNSW Monitoring Template)	2		16			\$ 4,420.00
Task 6.2 – Final briefing to Councillors	4		4			\$ 2,120.00
Task 6.3 – Data handover and project closeout			4			\$ 960.00
Total Billable Hours Per Phase Per Person	6	0	24	0		\$ 7,500.00
Total Billable Costs Per Phase Per Person	\$1,740.00	\$0.00	\$5,760.00	\$0.00		\$ 7,500.00

Total Billable Hours Per Person for whole Proj	42.0	22.0	192.0	32.0	1.0	289.0
Total Billable Cost Per Person for whole Proj	\$ 12,180.00	\$ 5,940.00	\$ 46,080.00	\$ 10,400.00	\$ 5,000.00	\$ 79,600.00

	\$ 79,600.00
	\$ 7,960.00
	\$ 87,560.00

Optional Variation – Address-level catastrophe loss

For almost 30 years, Risk Frontiers has been leading the development of natural catastrophe (CAT) models for the Asia Pacific region. Our suite of models is designed quantify risk, primarily to the built environment, for the most important loss causing- natural hazards.

- CyclAUS: Australian tropical cyclone loss model
- FireAUS: Australian bushfire and grassfire loss model
- FloodAUS: Australian riverine flood loss model
- HailAUS: Australian hail loss model
- QuakeAUS: Australian earthquake loss model

CAT models will be used to estimate the extent of residential, commercial and industrial financial losses under current and future climate scenarios for flood, bushfire, hailstorms and earthquake.

Risk Frontiers CAT models can be used to estimate the extent of residential, commercial and industrial financial losses under current and future climate scenarios for flood, bushfire, hailstorms and earthquake. I've attached a slide from the SYD project that can be used if you want.

Analysis would be conducted at address-level for all properties in the Kyogle LGA.

The cost would be **\$60,600** (ex. GST) as an optional value add to the fixed price above, if this was considered to be an important addition to the granularity of risk data to Council. Please note this does not constitute raw data and would be specifically subject to the intellectual property and confidentiality protections proposed below.

Invoicing

Invoicing will be undertaken on a monthly basis in accordance with a percentage complete basis of the milestones set out in the project timeline.

Rates Structure

Our offer above is based on the schedule of personnel and costs included in Table 6-1. work outside the scope set out above can be accommodated with Client approval on an hourly rate basis in accordance with Table 6-2.

Table 5-2 – Schedule of personnel and rates

Personnel Name	Project Role	Hourly Rate excluding GST
Stephen Dredge	Director	\$290.00 (discounted rate from \$330 / hour)
Lauren Young	Associate	\$240
Stuart Browning	Climate Lead	\$325
Other personnel as required	Associate Director	\$290.00
	Principal	\$270.00
	Associate	\$240.00
	Planner	\$185.00

Limits of liability, Intellectual Property protections and Confidentiality provisions in contract

If Meridian Urban is the successful tenderer, prior to finalisation and acceptance of the contract we respectfully request the opportunity to include limitations on liability for the provision of the services, and to also insert preferred intellectual property protections and data release/confidentiality protections into the contract particulars. The climate and risk data provided by Risk Frontiers in particular is proprietary in nature and therefore must be provided in accordance with its desired licensing arrangements. These arrangements are not onerous but ensure that the intellectual property remains in their ownership and confidential in nature.

Variations

At this stage we understand the scope of the project to be that as set out above. Changes to the above scope can be accommodated upon written approval by the Client with work undertaken and invoicing to be updated accordingly.

General Assumptions and Limitations

Our fee is based on acceptance of the following assumptions and exclusions:

- At this stage we understand the scope to be that set out above. Changes to the above scope and proposed approach can be accommodated upon written approval by the client, with work (including timeframes and fees) undertaken and invoicing to be updated accordingly.
- Excludes supporting Council through any governmental endorsement process or any updates/finalisation required as a result of that endorsement process. This can be provided for a variation.
- The project is limited by the data that can be provided by Council or state agencies in an appropriate format for mapping and analysis.
- We assume Council shall furnish to Meridian Urban all applicable information and technical data in its possession or control reasonably required for the proper performance of the services. Meridian Urban shall be entitled to reasonably rely upon the information and data provided without independent verification, except to the extent such verification is expressly included in the services.
- We assume that a direct line of communication with relevant staff with the appropriate authority to provide clear direction and advice, if needed, will be provided.
- Significant changes in policy direction are unlikely to occur (via government, management or other parties to the project). However, in the event such a change occurs an assessment of the likely impact on the existing methodology and timeline will be conducted by us.
- Legal guidance or advice on the deliverables, will be the responsibility of Council.
- We note that raw climate or risk data cannot be provided to Council, rather only high level reporting of available climate data will be provided as part of the project.

Project Management and Delivery

The following section outlines our consolidated approach to high quality project management and project delivery.

Members of our project delivery team maintain tertiary level qualifications in project management with significant experience in successful program and project delivery which ensures timely, high quality and on-budget outcomes.

Insurances

Meridian Urban has current insurance for Professional Indemnity and Public Liability as outlined below. Copies of our Certificates of Currency are included at **Appendix A**.

Insurances	
Public Liability Insurance	
Insurer:	Berkley Insurance Company t/as Berkley Insurance Australia via Focus Underwriting
Policy No:	OPK-44864
Expiry Date:	1 September 2024
Limit:	\$20,000,000 in any one claim and in aggregate
Professional Indemnity Insurance	
Insurer:	Solution One Insurance
Policy No:	AF453310425PIND
Expiry Date:	1 September 2024
Limit:	\$10,000,000 in any one claim (\$20,000,000 in aggregate)
Worker's Compensation	
Insurer:	iCare NSW
Policy No:	173010101
Expiry Date:	31 October 2024

Environmental Management, Workplace Health and Safety

The project team and sub-contractors will operate in accordance with Meridian Urban's Policies and Procedures Manual was last updated in February 2023.

This manual documents our corporate quality assurance policy, environmental policy, climate policy, workplace health and safety policy, safe working practices (including travel), emergency management procedures and accident and incident reporting and investigation procedures.

Quality Management

Meridian Urban maintains rigorous project quality, reporting and risk management procedures in accordance with the seven quality management principles of ISO 9000 & 9001.

A dedicated project manager is assigned to each project to ensure that communication is maintained between the client and the project team, milestones are managed, and deliverables are of the highest quality.

Risk Management

Our team appreciates that delivery of the identified project is potentially high impact project. It is therefore essential that risk management be considered from the outset of the program of works as a priority and used as a key element of adaptive project management throughout the course of our team's delivery of the work.

Members of our team maintain tertiary level qualifications in Project Management as well as extensive experience in managing projects and in particular, project risk management. Identified risks include:

- Availability, access to and integrity of data to support the required deliverables
- Stakeholder engagement attendance and survey feedback
- Scheduling of stakeholder engagement to maintain project timeframes
- any disruption to Council staff and service delivery that impacts feedback timeframes
- Impact of illness, disease or pandemic on the project team or Council's internal project team
- Potential impact of other Council programs or project on project delivery or ability for alignment

These risks will be discussed at project inception.

Conflict of Interest

Meridian Urban wish to advise that there are no evident or perceived conflicts of interest should our proposal be successful.



APPENDICES



Appendix A - CVs



Stephen Dredge

Stephen is a risk, adaptation and urban planning executive with 20 years of management-level Australian and international experience in the public sector, development industry and in private practice. He is an industry leader in developing and implementing disaster risk reduction, resilience and climate adaptation policy in the built and socio-economic environments. He provides trusted advisory, thought leadership and technical support for specific settlements, broader governance reviews and strategic policy or regulatory system changes.

Stephen is a specialist in sustainable and resilient growth management planning.

His particular technical strengths lie in management consulting, strategic land use planning, and statutory planning. Stephen also undertakes complex and challenging facilitation and engagement activities with government executives, elected officials, and the community.

Relevant experience

- **2023 – Wentworth and Balranald Councils**
 - Wentworth and Balranald Regional Drought Resilience Plan
- **2023 – NSW Reconstruction Authority and Kyogle Council**
 - Local Growth Management Strategy
- **2022-2023 – Northern Rivers Reconstruction Corporation**
 - Resilient Lands Strategy
- **2022 – Department of Regional NSW**
 - Regional Drought Resilience Planning program development of state-wide roll out guidance instruments
- **2016-2022 – Department of Planning and Environment**
 - Position Paper – Defining risk tolerability for settlement interventions (relocations and resilient growth management)
 - Resilience Risk Assessment Pilot – Illawarra and Shoalhaven
 - Gap and opportunities analysis of the NSW planning system to embed resilience principles and preparation of a strategic pathways implementation plan
 - Hawkesbury-Nepean Flood Risk Management Strategy 2016 – 2036 – Land Use Planning Implementation
- **2023 – Department of State Development, Infrastructure, Local Government and Planning**
 - SEQ Regional Plan Disaster Resilience Policy Narratives and Implementation Maturity Framework
- **2018-2022 – Queensland Reconstruction Authority**
 - Resilient Queensland 2018 – 2022 Program Design and Delivery of Regional Resilience Strategies across Queensland
- **2022 – Canberra Region Joint Organisation**
 - A Blueprint for a resilient South East NSW
 - Hilltops and Upper Lachlan Regional Drought Resilience Plan
- **2019-2020 – NSW Office of Emergency Management**
 - State –Level Emergency Risk Assessment (SLERA) Land Use Planning Scoping Study

Qualifications and memberships

- Leadership through Energy and Environmental Design (LEED) Accredited Professional, 2009
- Bachelor of Regional and Town Planning (with 1st Class Honours), 2004
- Corporate Member Planning Institute of Australia



Julie Brook

Julie is a government policy integration and implementation specialist with well over a decade of industry experience across the public and private sectors. Her business focus and Masters qualification promotes strong project management skills and a strong interest in governance, maintaining a holistic outlook on major projects.

In recent years she has developed a strong capability community-led disaster resilience and climate adaptation projects, creating synergies with strategic land use planning and resilience or adaptation policy and implementation for built environment, advancing collective resilience outcomes.

Julie was integral to the rollout of Queensland's first resilience planning program – the QRA's Resilient Queensland 2018-22 program of works.

She has also expanded her governance and management expertise to Monitoring, Evaluation and Learning (MEL), with a qualification from the International Training Centre of the International Labour Organization of the UN, based in Turin, Italy.

Relevant experience

- **2022 Ongoing – Douglas Shire Council – Douglas Resilience Strategy**
 - Local resilience strategy and 'resilience scorecard' development through seven small communities, including Indigenous communities
- **2022 – Establishment of the Regional Drought Resilience Program - Department of Regional NSW**
 - Program design to establish the NSW component of the \$40m Regional Drought Resilience Program under the Future Drought Fund
- **2023 – Sunshine Coast Council**
 - Special Area Adaptation Precinct Framework Project (Community Engagement Components for Pilot Projects)
 - 2021-2023 Coastal hazards to new Planning Scheme Coastal Hazard Risk Integration project
- **2023 – Moreton Bay Regional Council**
 - Local Community Resilience Plan Design
 - Landslide hazard risk assessment
- **2018-2022 – Queensland Reconstruction Authority**
 - Resilient Queensland 2018 – 2022 Program Design and Delivery (including extensive community engagement) of Regional Resilience Strategies across Queensland
- **2021-2023 – Lockyer Valley Regional Council**
 - Flood risk integration into new planning scheme , planning scheme policy and feasible Alternatives Assessment Report
 - Urban Footprint analysis for natural hazard constraints

Qualifications & Membership

- Bachelor of Urban and Regional and Town Planning (Hons) University of New England
- Master of Business Administration, University of New England
- Planning Institute of Australia (Registered Planner)
- Planning Institute of Australia, Queensland Division , Policy and Advocacy Convenor (2020-Current)
- Queensland Environmental Law Association member
- Queensland Building Tribunal referee 2021-Current



Laura Gannon

Laura is a nationally-recognised and resilience specialist with 18 years of experience across Australia and both the public and private sectors. Laura has extensive experience in developing governance policy for regional and statutory land use planning, risk reduction and resilience planning, and assisting both government and private stakeholders engage and translate these policies into their portfolios.

Laura has practical experience in resilience communications, engagement design and delivery.

Laura led the Regional Drought Resilience Planning establishment project with Regional NSW, and the Canberra Joint Regional Organisation's Hilltops and Upper Lachlan RDRP and Blueprint for a Resilient South East NSW. This required a collaborative and co-design approach across 11 LGAs and an extensive consultation program with community members and service agencies.

Laura co-led the rollout of Queensland's first resilience planning program – the QRA's Resilient Queensland 2018-22 program of works.

Relevant experience

- **2022 – Department of Regional NSW**
 - Regional Drought Resilience Planning program development of state-wide roll out guidance instruments
- **2022 – Queensland Fire and Emergency Services**
 - Review of State Planning Policy implementation for the bushfire hazard, risk and resilience state interest across Queensland
 - Review of and enhancements to the Bushfire Resilient Communities technical reference guide
 - QFES Infrastructure Resilience Plan
- **2022 – Department of Planning and Environment NSW Rural Fire Service**
 - Formulation of a new Bush Fire Risk Framework for Land Use Planning in NSW in satisfactory of Recommendation 27 of the 2020 NSW Bush Fire Inquiry
- **2018-2022 – Queensland Reconstruction Authority**
 - Resilient Queensland 2018 – 2022 Program Design and Delivery of Regional Resilience Strategies across Queensland
- **2022 – Canberra Region Joint Organisation**
 - A Blueprint for a resilient South East NSW
 - Hilltops and Upper Lachlan Regional Drought Resilience Plan
- **2021 – NSW Rural Fire Service and Department of Planning and Environment**
 - Position Paper and implementation roadmap for Recommendation 27 of the 2020 NSW Bush Fire Inquiry to enhance strategic planning approaches for bush fire in the NSW planning system
 - Roadmap and project management planning for the 5 year revision of the 'Planning for Bush Fire Protection' Guideline

Qualifications and memberships

- Graduate Diploma in Bushfire Protection (with Distinction)
- Bachelor of Regional and Town Planning (with Honours)
- Graduate Certificate in Project Management
- Corporate Member Planning Institute of Australia
- Member Fire Protection Association of Australia (BPAD Accredited)
- Member Association for Fire Ecology
- Member International Association of Wildland Fire
- Member Natural Hazard Mitigation Association (USA)

Managing Director

RYAN CROMPTON



Skills & Expertise

Skill Set

Ryan leads Risk Frontiers and has expertise in the development of catastrophe loss models and physical climate risk solutions. He has extensive hands-on experience in assessing the impacts of natural hazards on Australian communities.

Ryan has undertaken a wide variety of projects for domestic and international (re)insurance companies and their brokers as well as government and non-government organisations. His research background is in natural disaster losses and climate change including the application of insurance modelling tools to climate change adaptation decision-making relating to the built environment.

Ryan was a member of the Scientific Committee of the industry-led Climate Measurements Standards Initiative (CMSI) in Australia. He has appeared at Royal Commission and Senate Committee Inquiries and contributed to Risk Frontiers' submissions to several other Government Inquiries relating to natural disasters.

Ryan is the author of numerous scientific and industry publications.

Reference Projects

- Overseeing and providing strategic advice in the development of Risk Frontiers' suite of loss models covering Australian bushfire, flood, tropical cyclone, hail and earthquake.
- Leading the development of Risk Frontiers' Physical Climate Risk Assessment Framework 'ClimateGLOBE'. This includes a data analytics component and employing catastrophe loss models to provide climate change risk analyses to insurance companies, financial institutions and other organisations.
- Leading Risk Frontiers' tropical cyclone loss modelling analysis for the 2015 Northern Australia Insurance Premiums Taskforce.
- Normalising the Insurance Council of Australia's Natural Disaster Event List – an industry database of significant insured losses

Qualifications

PhD (Natural Hazards), Macquarie University	Location	Sydney
Postgraduate Diploma in Accounting, Macquarie University	Location	Sydney
Bachelor of Science (Advanced Mathematics), Macquarie University	Location	Sydney

Publications

[Ryan Crompton Publication List](#)



Chief Climate Scientist

STUART BROWNING



Skills & Expertise

Skill Set

Stuart is Climate Risk Scientist at Risk Frontiers, with extensive experience studying the weather and climate of coastal and alpine environments in the Australian and Asia-Pacific region.

Stuart's work focuses on understanding the large-scale climatic drivers of extreme weather events to better quantify risk over seasonal to multi-decadal timescales. Stuart has produced a range of scientific publications, consultant and technical reports on extreme coastal weather, wave climate, East Coasts Lows, and extreme bushfire weather.

Using a range of data and tools, including reanalysis data, model simulations, and paleoclimate records, Stuart's work spans multiple timescales, from the dynamical evolution of individual weather systems through to the multi-centennial scale evolution of the climate system.

Stuart has 10 years of experience.

Reference Projects

- Leadership of Climate Change Impacts Assessment, Clarence Valley Council.
- Development of the weather and climate data analytics to support Risk Frontiers' Physical Climate Risk Assessment Framework 'ClimateGLOBE'.
- Physical climate change risk assessments in line with the recommendations of the Task Force on Climate Related Financial Disclosure (TCFD) for some of Australia's largest companies using the latest generation of reanalyses and global climate model projections.
- Objective identification and tracking of severe weather phenomenon including Tropical Cyclones, East Coast Lows and Fronts for a range of government and private sector clients.
- Pioneering the development of machine learning based data assimilation for paleoclimate research applications
- Projections of bushfire service expenditure and property damage to inform the Victorian Inspector-General for Emergency Management (IGEM) Inquiry into the 2019-20 Victorian Fire Season.
- Seasonal drivers of high bushfire weather risk in Southeast Australia over the past 160 years from observational based reanalyses, and over the past 1000 years from paleoclimate reanalysis.
- Identification and classification of loss causing extreme weather systems impacting New Zealand over the past 50 years.
- Calculation of heatwave risk indices for analysis of heat related fatalities in Australia.

Qualifications

PhD Climate Science,
Macquarie University

Location Sydney

Bachelor of Science (Hons),
Climate Science, Newcastle University

Location Newcastle

Publications

[Stuart Browning Publication List](#)



Chief Geospatial Scientist

JAMES O'BRIEN



Project role

Will jointly lead the development and implementation of the framework

Skills & Expertise

Skill Set

James has over 20 years of experience applying GIS and spatial analysis to solving geographical problems in the US, UK, Europe, Asia and Australia.

James' research interests include large-scale hazard modelling, hydrological modelling, physical and social vulnerability indices, spatial analysis and mapping human and infrastructure exposure to natural hazards, developing web mapping platforms, data analysis and software development.

Reference Projects

- Development of complex decision support platforms such as the Australian Reinsurance Pool Corporation (ARPC) 2D Blast Model
- Development and maintenance of the National Flood Information Database
- User needs elicitation exercises and analysis such as the Victorian Department of Environment, Land, Water and Planning Predictive Services project
- Develop of resilience modelling framework for Home Affairs
- Running catastrophe loss models for various client portfolios
- Post-event analysis of floods, bushfire, hailstorms & heatwaves in Australia
- Modelling & analysis of the workers compensation costs associated with natural hazards in Australia
- Estimating losses due to various hazards for a variety of insurance companies and government departments.
- Modelling exposure of infrastructure such as roads and railway lines to flooding.
- Spatial analysis for the production of a statewide risk register examining the exposure of infrastructure and social vulnerability to flooding, cyclone and storm surge.

Qualifications

PhD Geography
The Pennsylvania State University

BSC in Geographic Information Science
The Pennsylvania State University



Appendix B - Insurances

Office Pack Policy Certificate of Currency

The policy details referred to below are current as at Friday, 25 August 2023. Whilst a period of insurance is indicated below, it should be noted that the policy may be cancelled prior to the expiry date. This certificate summarises the public and products liability section of the policy only. This document does not form part of the policy documentation.

Insured:	Meridian Urban Pty Ltd
Addresses:	93 White Street WAVELL HEIGHTS QLD 4012 Clarence Professional Offices Pty Ltd, Level 8, 95 North Quay BRISBANE QLD
Policy Number:	OPK-44864
Brokerage:	IBL Limited t/as Planned Cover
Business:	Town Planner
Period of Insurance:	1/09/2023 at 4pm to 1/09/2024 at 4pm LST
Insurer:	Berkley Insurance Company t/as Berkley Insurance Australia via Focus Underwriting
Policy Wording:	Office Pack Policy OPP2021.04.06

Public & Products Liability

\$20,000,000 any one claim for **general liability** and in the aggregate for **products liability**

This certificate of currency has been authorised in Melbourne, Victoria on Friday, 25 August 2023 .



Solution *ONE* Insurance
Certificate of Currency

Policy Number: AD453310425PIND
Insured: Meridian Urban Pty Ltd
Address/Premises: 93 WHITE STREET, WAVELL HEIGHTS QLD 4012
Business: Town planners, environmental consultancy, provision of bushfire assessment, planning, design and advice services as prescribed in FPA Australia's Bushfire Planning and Design Accreditation Scheme for a BPAD - Level 3 practitioner, Expert Witness
Period of Insurance: From: 4pm on 01/09/2023
To: 4pm on 01/09/2024

Part A: - Professional Indemnity

Limit of Indemnity: \$10,000,000 any one Claim and \$20,000,000 in the aggregate
Excess: \$10,000 each and every Claim inclusive of Defence Costs
Retroactive Date: Unlimited excluding all known claims and circumstances

Part B: - General Liability

Not Taken

Part C: - Management Liability

Not Taken

Policy Wording: Solution Underwriting Solution ONE Insurance Policy - SU CL 0721
Security: Chubb Insurance Australia Limited
Territorial Limits: Anywhere in the world other than the United States of America or Canada or their territories, protectorates or dependencies
Jurisdiction: Anywhere in the world other than the United States of America or Canada or their territories, protectorates or dependencies
Endorsements: See policy schedule

Date and Place of Issue: Melbourne on 25 August 2023

Signed for and on behalf of Solution Underwriting Agency Pty Ltd

A handwritten signature in black ink, appearing to be 'Rhys Mills', written over a faint horizontal line.

Rhys Mills – Managing Director

