

Adapting to a carbon-constrained world

Climate change scenario modelling tool

CLIMATE CHANGE IS THE MOST SIGNIFICANT CHALLENGE OF OUR TIME – CREATING BOTH RISK AND OPPORTUNITY

By understanding the potential impacts and vulnerabilities created by climate change, local governments, planning authorities and developers are well placed to take advantage of these opportunities and reduce risks to infrastructure and economic, community and natural resources.

Embedded in Arup's sustainability team is a group of GIS and climate change specialists providing spatial analysis, modelling techniques and systems delivery. With the ability to tailor solutions to client priorities and regions, Arup utilises an in-house climate change scenario modelling tool specifically used for spatial climate change impact analysis.

Arup have a licence for the SimCLIM climate simulation software to create scenarios of possible futures. Our team is experienced in generating possible futures to provide a spatial impact analysis in order to recommend adaptation strategies and minimise risks to client priorities.

The software package requires a range of spatial and climate data to project climatic changes on a regional and local scale. The custom-built geographic information system (GIS) supports both spatial and statistical analysis methods for exploring extreme events and estimating return periods. Built into the system are climate and sea level scenario generators.

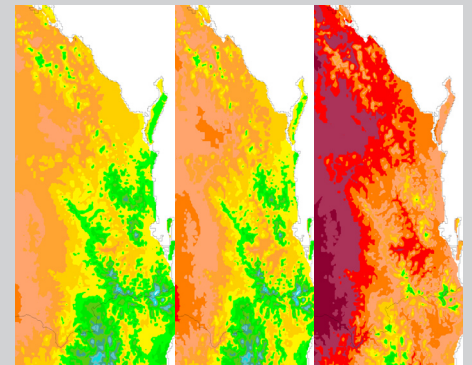
Our team of specialists provides climate change adaptation and risk assessments, incorporating stakeholder workshops as a key part of the engagement process.

The climate change scenario modelling tool has been successfully applied to a range of local and State Government projects including environmental impact assessments, regional planning schemes and the Queensland Government-mandated climate change impact statements.

In our approach, we provide our clients with:

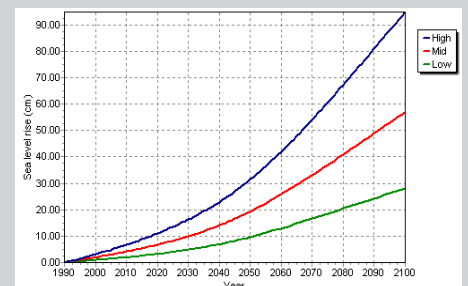
- a better understanding of the severity and risk of climate change impacts
[and assessment of the potential impacts for infrastructure and community project planning;
- planning to service the projected population growth and development demands without creating stress on existing infrastructure – therefore minimising future risks of social, economic and environmental loss and damage; and
- adaptive strategies to embed resilience to climate change into project planning and to strengthen current infrastructure and environmental and social conditions to the impacts of climate change.

Our modelling capability enhances our efforts to provide rigorous quantitative analysis and communicate with clients and the community about project outcomes.

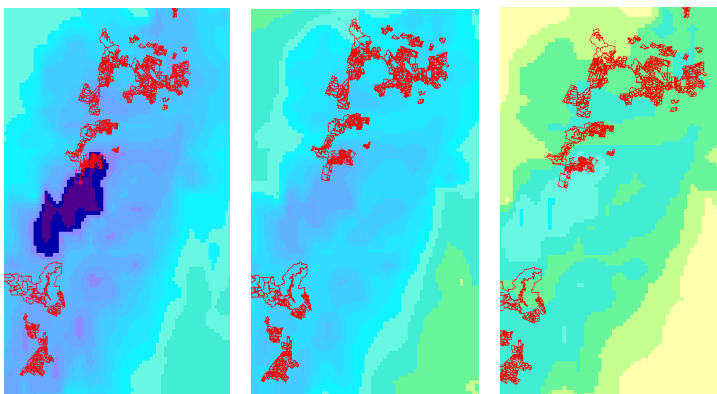


Mapping of Baseline Climate, Possible Future Scenario 2030 and 2070

Area: South East Queensland
Maximum Summer Temperature



Change in sea level rise under high greenhouse gas emission scenario



Mapping of Baseline Climate, Possible Future Scenario 2030 and 2070

A spatial analysis of changes in annual precipitation across an area of forest reserves (GIS overlay denoted in red)

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