



CLIMATE CHANGE RISK MANAGEMENT

ASSESSING THE RISKS OF CLIMATE CHANGE

Climate change is real and the impacts on infrastructure, economies, businesses and people will be far-reaching. Changing climatic conditions can reduce the lifespan of infrastructure and may result in economic loss, disruption to communities, and increased public health and safety concerns. Enterprises operating in sectors such as water, environment, transportation, energy, resources, property and buildings must take climate change effects into account in their strategies and business plans.

ARE YOU READY?

Many organisations are uncertain as to how to translate climate change information into tangible actions and strategies. Business managers need to consider, for example:

- ▮ Increases in the frequency of 'hot' days resulting in increased power consumption and fire risks, restricted water supplies, and failures in power and transport infrastructure
- ▮ More severe weather events that impact on infrastructure and building design, flood planning and emergency response
- ▮ Reduced average rainfall leading to quantity, quality and distribution stresses on water supplies
- ▮ Rising average sea levels affecting coastal infrastructure, ecology and amenity, and forcing changes in allowable land uses and building codes
- ▮ Legal duty to consider impacts on investments
- ▮ New regulatory regimes such as emissions cap reporting and emerging standards and practices.

GHD TAKES THE GUESSWORK OUT OF RISK

GHD operates one of the leading practices in this field drawing on skills and experience in risk management, climate change and sustainability. GHD offers integrated service delivery drawing on our global network of 100-plus offices. Working with organisations, together we can review operations, develop actions to minimise climate change risks, and assist in managing future planning requirements.

GHD offers significant experience in risk assessment, facilitation and management. Our climate change and sustainability professionals can provide comprehensive strategies for adaptation. This allows organisations to assess the impacts of climate change and to develop action plans to minimise the risks. We can provide qualitative and quantitative processes across your organisation. Coupling risk assessment with adaptation tools such as multi-criteria decision-making analysis, this produces powerful and insightful results.

GHD has also adapted its own industry-proven Semi-Quantitative Risk Assessment (SQRA™) technique that draws on an organisation's own business expertise to develop pragmatic and prioritised actions to manage the potential impacts of climate change. This process delivers:

- ▮ Identification of key environmental, legislative, technical or social exposures that need to be managed in current or future design cycles
- ▮ Valuable organisational resource savings because initiatives are undertaken early in a project life cycle
- ▮ Outcomes that are triple bottom line focused.

OUR EXPERIENCE

GHD works across many sectors.

- ▶ Coastal developments
- ▶ Energy
- ▶ Government and planning
- ▶ Infrastructure
- ▶ Mining and resources
- ▶ Port and foreshore authorities
- ▶ Roads
- ▶ Transport
- ▶ Water

OUR PROJECTS

GHD has worked on many projects.

- ▶ Port development (AUD\$1.6 billion) – development of a major marine port facility with an estimated project life of 100-150 years. GHD undertook a qualitative review and examined sea level and weather statistical information. It was determined the design specification for the wharf height may need to be increased by two metres depending on risk level (probability of sea level rise).
- ▶ Regional council – due to low lying land and threat of inundation if sea levels rise, the council needed information on what areas of development may not be suitable.
- ▶ Large capital city coastal development (AUD\$300-500 million) – GHD peer reviewed a climate change risk assessment report and identified recommendations to enhance the quality and rigour of the analysis.
- ▶ Highway design – GHD applied strategic and qualitative risk analysis on a highway design project for a public utility.
- ▶ Water supply – using a semi-quantitative approach, GHD assessed water supply risk for a major mining company.
- ▶ Local Council Climate Change Risk Assessments - Through the Australian Federal Government, Local Adaptation Pathways Program (LAPP) funding is provided to assist councils to undertake climate change risk assessments. GHD has successfully undertaken climate change risk assessments under LAPP for Mansfield (Victoria), the WESROC alliance of councils (Queensland), the SMRC alliance of councils (Western Australia), Wongan Ballidu (regional Western Australia), Randwick (coastal New South Wales), Byron/Tweed alliance (coastal New South Wales) and Launceston (Tasmania).
- ▶ South West Catchments Council – GHD undertook a Natural Resource Management climate change risk assessment, which assessed natural resource system vulnerabilities.



ABOUT GHD

GHD is an international professional services company. Our people deliver innovative solutions by combining technical skill and experience with an understanding of our clients' objectives and aspirations.

With more than 6000 people in a network of 100-plus offices throughout Australia, New Zealand, Asia, the Middle East, the Americas and Europe, we serve clients in the global market sectors of infrastructure, mining and industry, defence, property and buildings and the environment.

Central to our clients' prosperity and GHD's success are forward-thinking engineers, architects, planners, scientists, drafters, project managers, economists and supporting staff. Our people embrace the core values that have sustained the company since inception – **Teamwork, Respect and Integrity.**

Established in 1928, GHD is ranked as one of the world's leading engineering, architecture and consultancy firms. We are dedicated to our clients and their stakeholders, to being a responsible corporate citizen and to improving the quality of life around the world.

We contribute to the goals of sustainable development and are committed to managing the social, economic and environmental impacts of our operations and assisting our clients to manage theirs in the provision of our technical consulting services. We recognise innovation as the key to realising this objective.

As a member of the World Business Council for Sustainable Development (WBCSD), GHD actively participates in the public debate on the role business has to play in managing climate change, energy, development and ecosystems.

GHD operates under a Practice Quality Management System that is certified by Lloyds Register Quality Assurance (LRQA) to AS/NZS ISO 9001:2008 and our Environmental Management System (EMS) is accredited to international standard ISO 14001 by NATA Certification Services International (NCSI).

For more information, visit www.ghd.com.au

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