XDI CROSS DEPENDENCY INITIATIVE

ADB e-Marketplace Smart Water Solutions

XDI PLATFORM

XDI Globe globe.xdi.systems / Easy XDI easyxdi.com / XDI Company Portal

INTRODUCTION

XDI is a global leader in physical climate risk and adaptation analysis for infrastructure, property and investment.

XDI's analysis is powered by the Climate Risk Engines, award winning technology developed and market tested with clients from Government, Business and Financial Institutions since 2007.

XDI provides sector specific, detailed analytics to meet the evolving climate-related financial reporting and disclosure requirements.

Notable smart water solutions in the past include projects completed for the Government of British Columbia, Sydney Water, Adapt Water, South Australia Water, Water Corp and more.

Detailed case studies available at our website XDI.systems/insights-physical-climate-risk-analysis/

INTRODUCTION

2007
Climate Risk PL is Founded by Dr. Karl Mallon

2007 – 2011
Building a detailed map of Climate Risk to built assets

2012 – 2019
Building the Climate Risk Engines

2016 – 2021
XDI- The Cross Dependency Initiative Pty Ltd incorporated with Directors Dr Karl Mallon and Rohan Hamden

PHYSICAL CLIMATE RISK THREATENS BUSINESS CONTINUITY AND ECONOMIC STABILITY

Climate change exacerbated hazards present a material threat to critical infrastructure, business continuity and economic stability all around the world.

Understanding your company's climate risk enables informed decision making around asset maintenance, property purchases or development, and supply chain choices.

XDI Analysis supports business decision making:

- Climate change risk and vulnerability assessment
- Develop and test adaptation actions
- Cost benefit analysis
- TCFD Reporting
- Asset Management
- Portfolio risk assessment

XDI CLIENT LOCATIONS

HAZARDS ANALYZED

CLIMATE CHANGE HAZARDS

Our analysis considers 8 different climate change exacerbated hazards to determine acute and chronic risk to property:

Extreme heat

Coastal Inundation

Flood – Pluvial & Fluvial

Extreme Wind

Forest Fire

Freeze/Thaw Cycle

Hurricane

Soil Movement

SECTOR SPECIFIC ASSET TYPES FOR GRANULAR ANALYSIS

ASSET TYPES

Over 120 individual asset types within these classes:

- **Airports**
- **Commercial Buildings**
- **Dwellings**
- **Gas**
- **Ports**
- **Power**
- **Rail**
- **Roads**
- **Telecommunications**
- **Water**
- **Wastewater**

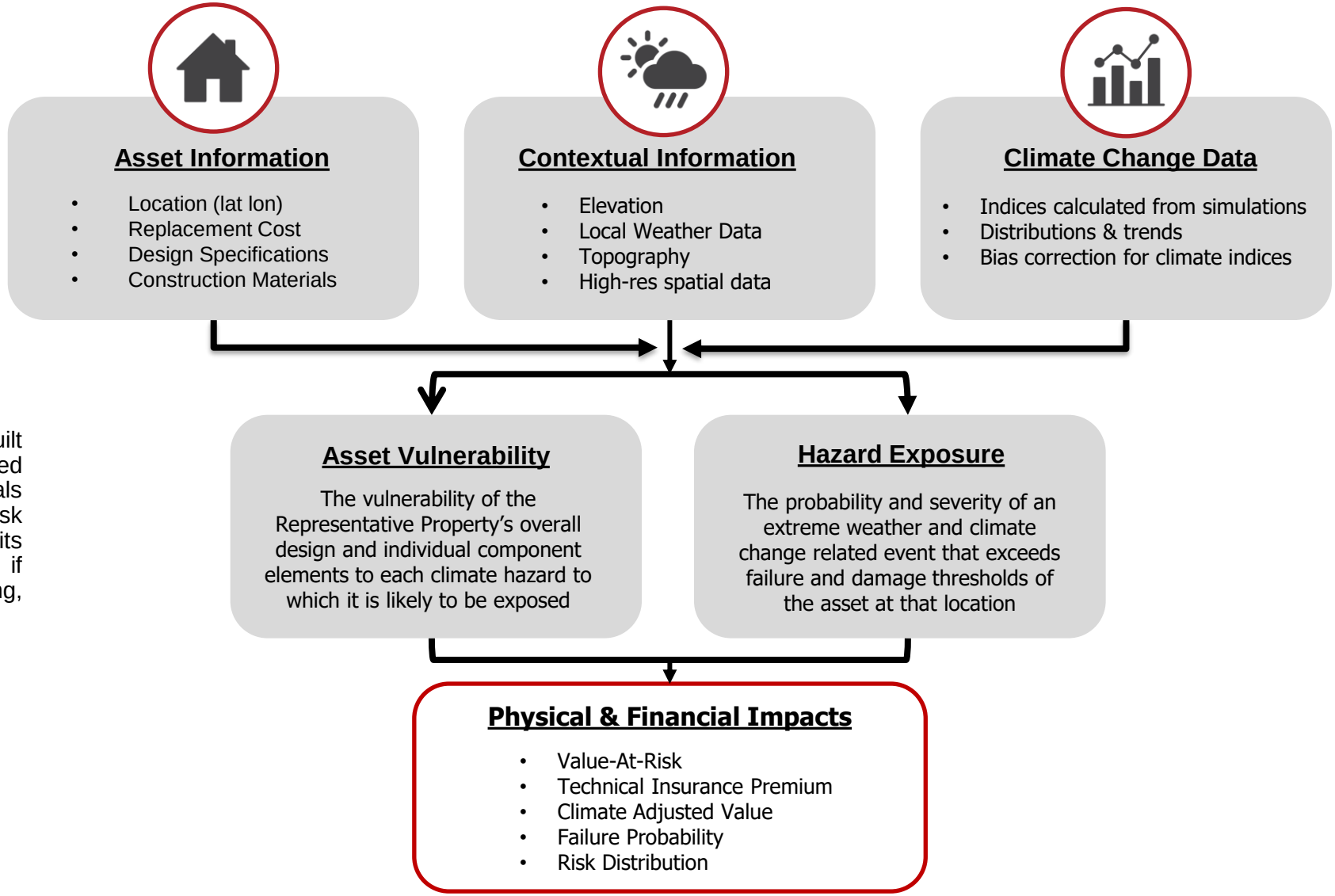
Methodology

The Award-Winning Climate Risk Engines

The Climate Risk Engines use global data sets for climate change projections, hazards and assets

AN OVERVIEW OF OUR METHODOLOGY

Our analysis is powered by purpose-built software running on an array of high-speed servers. Using the design and materials specified for the property, the Climate Risk Engines compute the threshold at which its various key components would fail if exposed to hazards such as flooding, subsidence and forest fires.



XDI Methodology - Climate Risk Engines

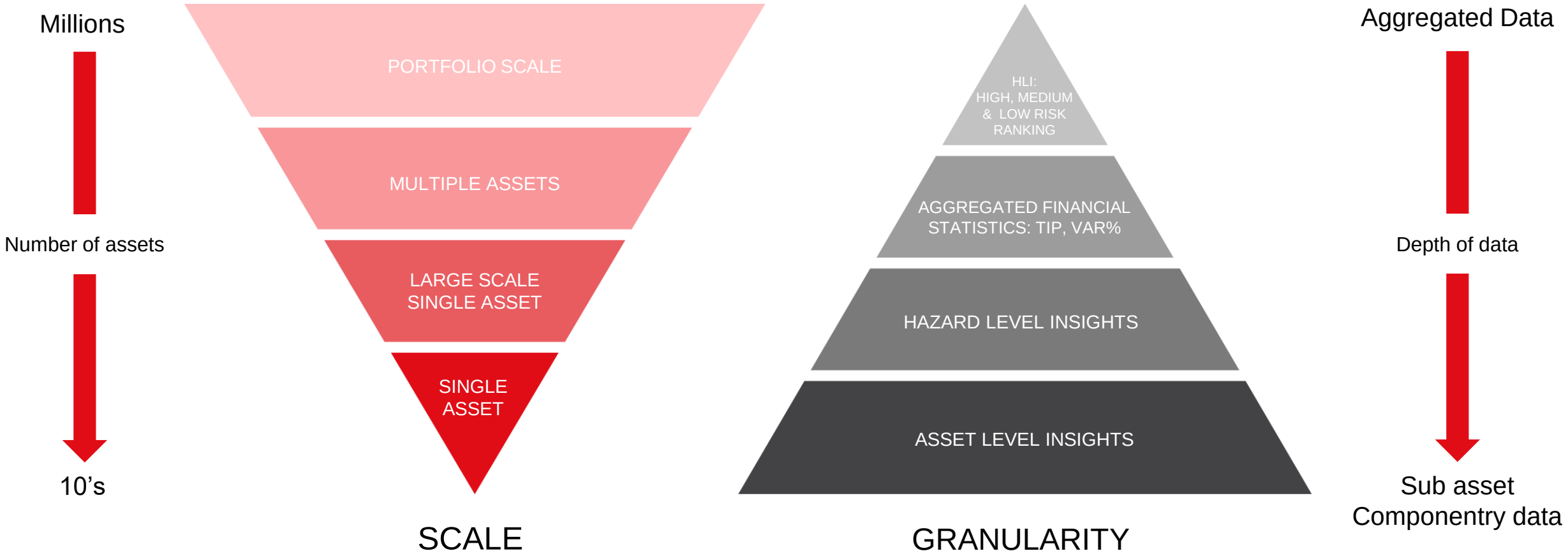
We build from the ground up using bespoke code, running on specially configured banks of high-speed servers. We use engineering methods focused on the physical mechanisms that would undermine the ability of an asset, system or person to function in the advent of climate impacts.

Our latest computing solution - CRE Paragon - boasts more than 872 CPU cores using a cluster of 12 high speed AWS servers. We ensure client data is kept safe by utilising automated threat response and remediation. Any data imported into our Engine databases is encrypted and secured, and then we utilise highly specialised threat detection software to keep it safe.

Our platform utilises engineering methods to determine an asset or systems physical capabilities. We then use statistical and probabilistic methods based on rich data sources to compute how extreme weather and climate change will cause such harm going forward. The Climate Risk Engines drive the output for XDI Analysis and Reporting.

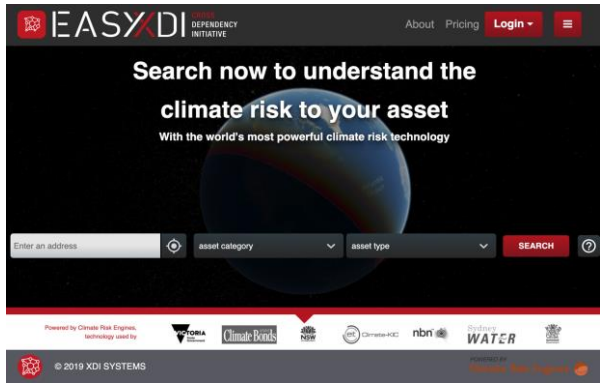
XDI Platform – Accessible data from single sites to millions of locations

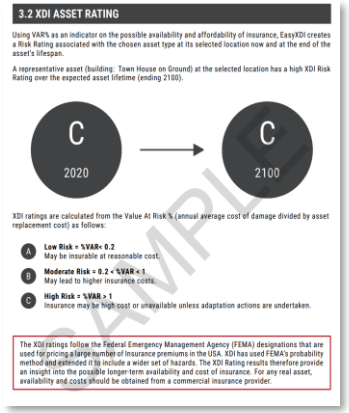
XDI Platform produces analysis for a single asset or for portfolios of millions of assets. Data outputs for each of these levels of scale can be produced at high level aggregated insights, right down to sub asset componentry for deep granularity.



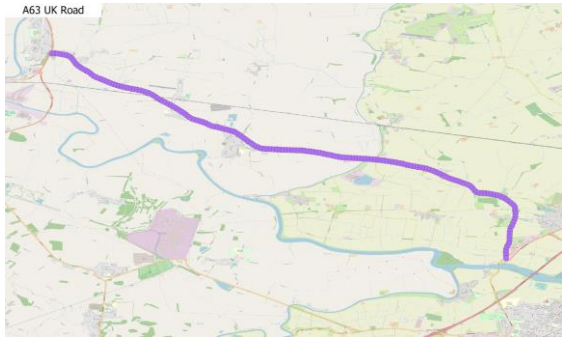
PRODUCTS AND SERVICES

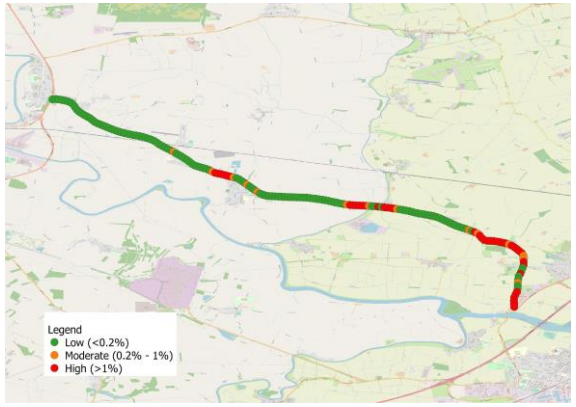
Single Site





Linear Site

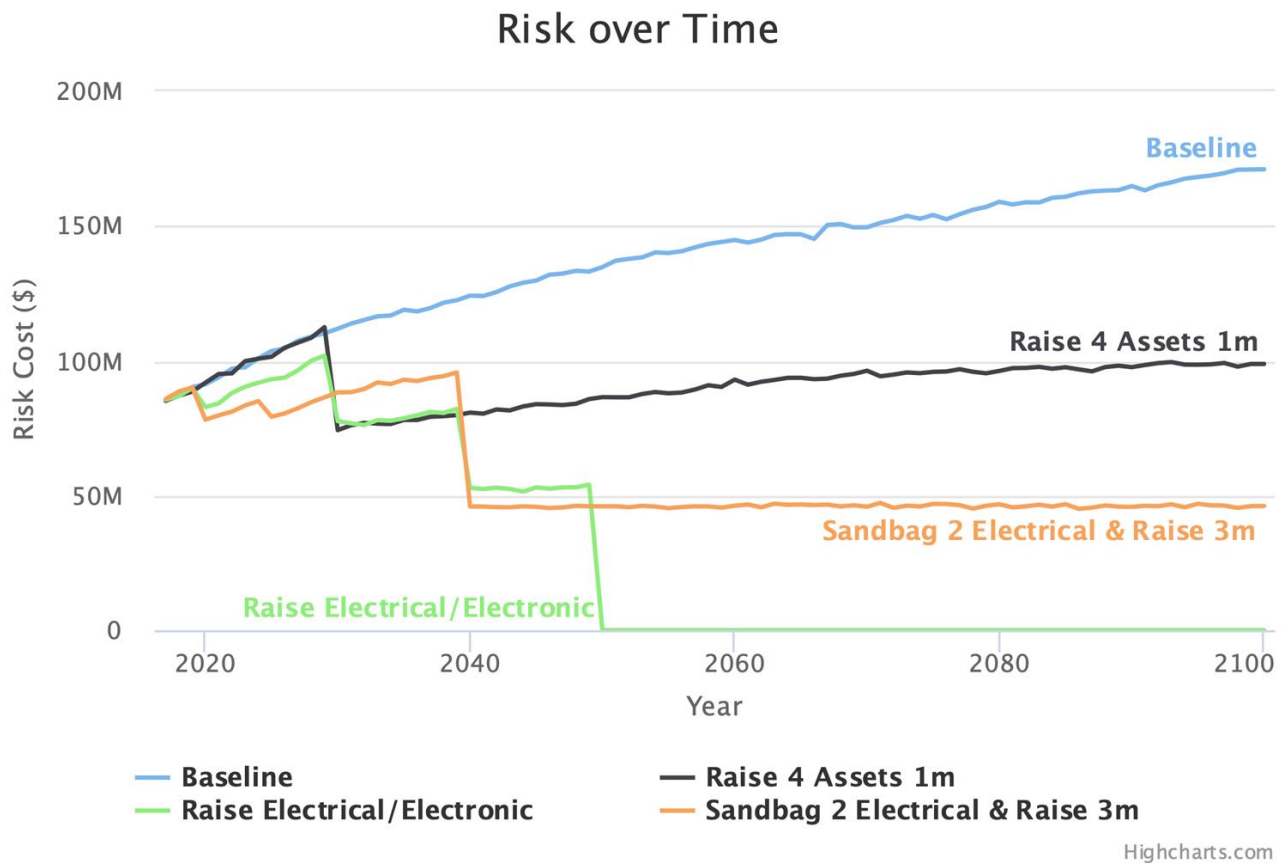




Large Site

ADAPT XDI

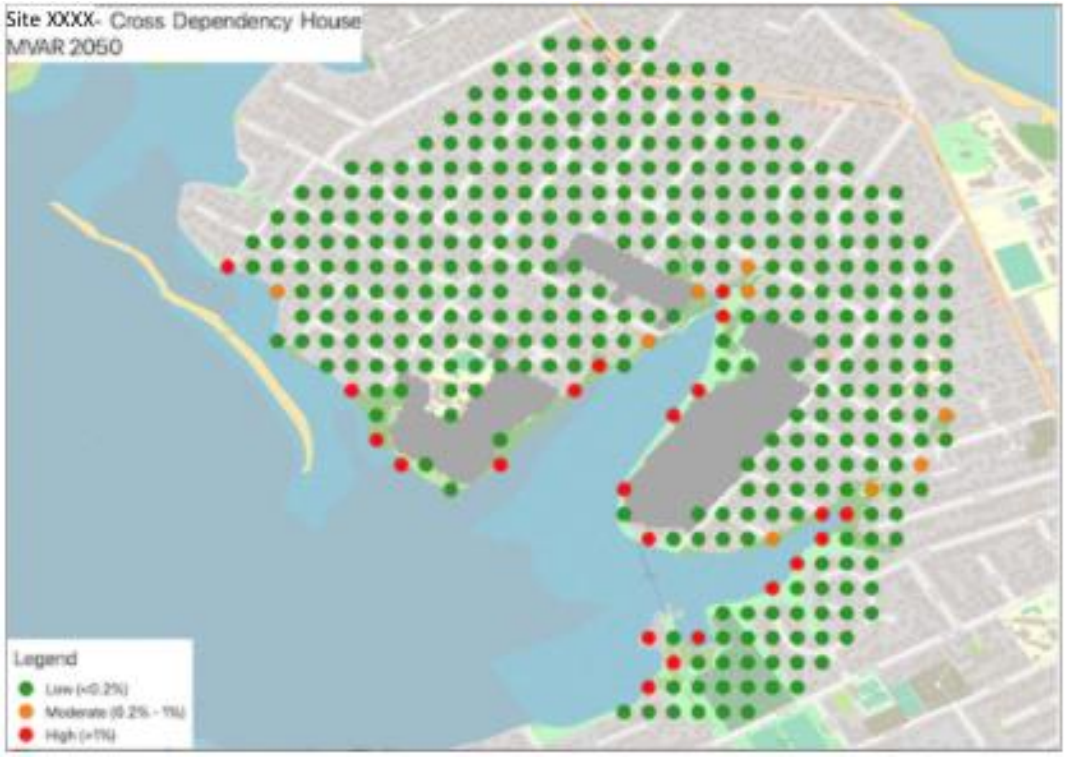
Compare the effectiveness of adaptation pathways using cost-benefit-analysis and compare NPV.



Multiple coastal inundation adaptation pathways

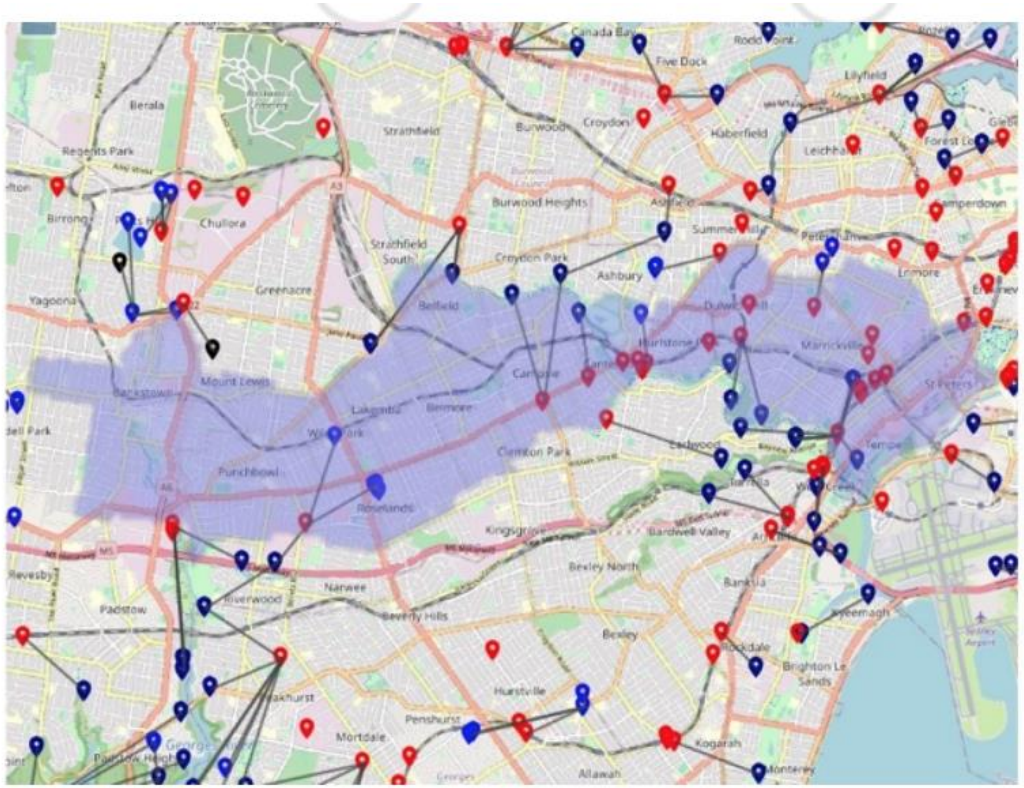
Technical insurance premium over time: unadapted and with adaptation options

MASTER PLAN



Climate risk analysis for medium to large scale land use planning to pre-test the climate resilience of property and infrastructure developments. This report assesses climate vulnerability for various asset types meshed across the area, allowing planners to ensure either safe placement or resilient design. This can include existing, planned or hypothetical asset data.

UNIQUE CROSS-DEPENDENCY ANLAYSIS



Cross Dependency Testing identifies supply chain risks for assets. Services such as roads, rail, power, comms and water can all fail leading to losses at invested or owned sites.

EXAMPLE CLIENTS