

REPORT 3 (1215/52/IM)

## THE EFFECTS OF SEA LEVEL RISE IN WELLINGTON

## 1. Purpose of report

This report is principally an update on the issue of sea level rise in Wellington. It describes work completed under the Council's *2010 Climate Change Action Plan*, discusses the considerable implications that sea level rise will have for the city, and outlines the proposed next steps, which include taking a proactive leadership role in collaboration with key partners and commencing a comprehensive programme of communications and community engagement.

## 2. Executive summary

## The significance of sea level rise

In the coming decades, sea level rise will become an increasingly important driver of Wellington's land use and economic development planning. Over time, the Council will be required to make a series of strategic decisions about how and when to respond. Though much of the work carried out within the Council has been at the strategic and policy levels, there are broader implications across all Council functions that will need to be well understood and dealt with. This suggests the need for an effective integrated strategy for research, policy development and community education and engagement on the issue. There are no real surprises around the areas likely to be most affected by sea level rise in Wellington – they are low-lying, often reclaimed land (including areas such as the CBD, Kilbirnie/Rongotai, Makara, State Highway 2, Miramar, and Makara Beach).

#### What we are proposing to do

Sea level rise will be a long-term issue that will require an ongoing focus over many decades, and though there is no need for panic, there is need for urgency. While some Councils are already moving to introduce coastal hazard zones in their District Plans, we propose following a more considered, staged approach that will enable in-depth planning and bring a more informed and engaged public with us. This does not mean delay in facing the issue. Now is the right time for us to begin considering sea level rise in all that we do – there will be significant short-term impacts, because even small rises in sea level will dramatically increase damage from storm surge and may lead to sub-surface issues from rising water tables. Planning and decision-making can take some time (e.g., Transmission Gully), acting early gives time to explore the options and respond appropriately to improve our resilience.

#### We have already achieved a lot

In 2010, the Councils *Climate Change Action Plan* included a much stronger focus on adaptation to the likely impacts of a changing climate, including new initiative funding. Although a range of impacts will occur, from higher temperatures to more intense storms, it is considered that sea level rise will be the most significant climate change affect for Wellington. We have undertaken work in conjunction with NIWA, Greater Wellington Regional Council, Victoria University and others to improve our understanding of likely sea level rise for the city, the likely rate of change, potential response options, and barriers to responding. This work is now being taken further to look at the next steps, and develop a comprehensive response strategy. It will also be important that such a strategy captures and connects to hazard management and climate change response activity across the region – the same issues being faced in Wellington city are relevant to coastal areas throughout the wider region.

#### We are going to do more

Though we have been active, we are determined to do much more – capturing ideas and energy from our smart, creative and innovative community, which can then be harnessed into interesting, exciting and fun ways to engage with the issue of sea level rise. Options that we are exploring include: hosting panel discussions with high-profile participants, developing community displays, holding community discussions, and holding a sea level rise solutions design competition to raise the profile of sea level rise impacts and response options.

Globally coastal communities are struggling to assess the business case for responding to sea level rise. It can be difficult to know what different responses will cost, or the costs of not responding. We have the capability right here in Wellington to provide a best practise city response, which will be highly sought after by others. Work by the Council and partnering institutions on sea level rise in Wellington has already achieved national recognition, and some international attention.

The Council can lead this process by supporting ongoing research and entering into genuine dialogue with communities and key stakeholders (such as businesses and insurance providers) about the city's strategic response options. We can aim to bring together key thinkers to translate the science, academic research, planning, asset management and community aspirations into real world solutions. Through active partnerships and collaboration, we can achieve much more than by the Council acting alone.

#### Developing a 'centre of excellence'

We are already taking significant steps along this path. Because of our work on sea level rise, as well as earthquake preparedness, we were recently able to respond to a UN call for Expressions of Interest on a programme for 'city resilience profiling'. This programme is seeking up to 10 cities to participate internationally, with a focus on reducing risk in urban areas across all types of hazard – including earthquakes and climate change. We have a very good chance of being accepted to this programme, which carries funding with it and offers exposure to best practice globally. Other actions that we have taken include involvement with climate adaptation research projects and lecture

programmes at Victoria University, and sponsorship and steering group involvement in the NZ Climate Change Centre's 2012 sea level rise conference.

## Engaging the community, gaining buy-in and seeking innovation

The Council should aim to provide all available information to allow for proactive engagement and meaningful dialogue with the community and stakeholders, using innovative and up-to-date approaches, seeking their input and developing preferred response options. Actual implementation of these responses for Wellington City will come much later. Meanwhile, we can keep a close eye on the issues and overall success of approaches being undertaken elsewhere, both nationally and internationally, from coastal hazard zoning to marine planting to major engineering works.

This is a "Smart City" response - which will raise our credibility, mitigate risk factors, attract attention internationally, and lead to informed investment decisions that safeguard the future of Wellington's economy, infrastructure and quality of life. It also sits within the *Our Living City* work programme – which has a focus on living alongside nature, rather than against nature.

## 3. Recommendations

Officers recommend that the Strategy and Policy Committee:

- 1. Receive the information.
- 2. Note that the Council has already agreed to fund work on climate change adaptation within the 2012-22 Long Term Plan (\$100,000 p/a over 3 years).
- 3. Agree to begin a comprehensive programme of communication and community and stakeholder engagement on adaptation to sea level rise in early 2013, noting that this will require an ongoing commitment over several years utilising a wide range of approaches.
- 4. Note that officers are undertaking communications and engagement from 2013 as outlined in this report, and will report back to Council by December 2013.
- 5. Note that substantive Council decisions in response to sea level rise are not being sought at this time such decisions will be developed through the community and stakeholder engagement process outlined here.

## 4. Background

**Sea level rise will become a major issue for coastal communities**. The warming from accumulating global greenhouse gas emissions from human activity is projected to result in long-term sea level rise at rates that will become a significant concern over coming decades and centuries. In New Zealand the Resource Management Act (1991) requires Councils to consider climate change effects, while the National Coastal Policy Statement (2010) recommends assessment of coastal hazards over periods of **at least 100 years**. Even small

rises in sea level in the short term will dramatically increase damage from storm surge and may lead to sub-surface issues from rising water tables. The severity of many of the recent major 'natural hazard' events seen internationally, including cyclone Sandy in New York, cyclone Evan in the Pacific and wildfires in Australia, is being attributed to climate change impacts.

Scientists have observed that New Zealand is on track toward 80cm of sea level rise by 2100<sup>1</sup>. This is in-line with central government guidance which recommends that Councils consider sea level rise of 50-80cm<sup>2</sup> (at least) by the 2090's. For planning and decision timeframes beyond the end of this century, government guidance also recommends an additional allowance for sea level rise of 1cm per year<sup>3</sup> (although more recent estimates indicate that 1.5cm per year beyond 2100 should be considered). It is important to note that sea level rise won't stop at that point, with 1, 2 and 3m or more likely to occur in the longer term. Also, sea level rise will occur alongside other changes in the climate, such as higher-intensity rainfall events, which can further exacerbate issues such as flooding.

**The issue of adaptation to sea level rise is much broader than science alone**. It's a problem for economics, development, agriculture, transport, trade, health and society. It will affect people's way of life, their health, wealth and well-being. Because risks from sea level rise will increase over time, sea level rise differs from other natural hazards. In risk management terms, sea level rise has an extremely high likelihood (though uncertain timing), and the potential consequences can be relatively accurately assessed. Other natural hazards (e.g. earthquakes) typically have a low likelihood, but highly uncertain consequences and timing.

**Several different approaches are being taken by local government agencies in New Zealand**. These include establishing coastal hazard zones (e.g. Kapiti, Hawkes Bay, Tasman), and assessing viable strategic response options (Dunedin, Wellington). In Dunedin there are key infrastructure investment decisions pending, which are accelerating the consideration of sea level rise issues there – including consideration of a 'managed retreat' approach in one particularly vulnerable suburb and setting requirements for minimum floor levels in at-risk areas.

## 5. Discussion

#### 5.1 Wellington City Council is being proactive

Climate change will lead to a range of impacts over time – from higher temperatures to more intense storms. However, for a coastal city such as Wellington, sea level rise is likely to be the most significant climate change affect that we will need to deal with. Wellington city has been at the cutting edge of research in New Zealand on local sea level rise impacts and response options,

<sup>&</sup>lt;sup>1</sup> In New Zealand, around 16-20cm of sea level rise has occurred within the last 50 years - see: <u>http://www.gw.govt.nz/wellington-highest-rate-of-sea-level-rise-in-nz/</u> and <u>http://www.gw.govt.nz/wellington-highest-rate-of-sea-level-rise-in-nz/</u> and

http://www.conferpapers.co.nz/NZCCC2012/2\_Doug\_Ramsay\_NZCCC\_Sea-Level\_Rise\_Conference\_10\_May.pdf <sup>2</sup> Relative to the 1980–1999 average

<sup>&</sup>lt;sup>3</sup> This is likely to be a conservative estimate, given the international process requiring consensus, and being based on science prior to 2007 (when the last official IPCC report was completed).

and a great deal of work has been done here to date – by both the Council and by other organisations (e.g. NIWA, GWRC, Victoria University). Recent research (NIWA, 2012) has shown that Wellington has the highest rate of sea level rise in New Zealand, due to tectonic plate movement (subduction) across the region. It is uncertain if this subduction will continue, but this demonstrates that sea level rise can be driven by both climate change and tectonic processes.

Because of our work on sea level rise, as well as earthquake preparedness, we were recently able to respond to a UN call for Expressions of Interest on a programme for 'city resilience profiling'. This programme is seeking up to 10 cities to participate internationally, with a focus on reducing risk in urban areas across all types of hazard – including earthquakes and climate change. We are in with a very good chance of being accepted to this programme, which carries funding with it, and offers exposure to best practice globally. Other actions that we have taken include involvement with climate adaptation research projects and lecture programmes at Victoria University, and sponsorship and steering group involvement in the 2012 sea level rise conference, hosted by the NZ Climate Change Centre.

The city has billions of dollars of assets and property at risk from sea level rise, and significant environmental, cultural, and social impacts are likely. Working with external experts, the Council is developing a model that shows the physical and economic impact of various sea level rise scenarios, which can be overlaid with other hazard data, and follows a strategic approach endorsed by the Ministry for the Environment, Victoria University, and NIWA. This model is currently in draft form and will be finalised in early 2013.

#### 5.2 Short-term view

The Council's current response to climate change impacts is primarily through our asset management planning on an asset-by-asset basis – seeking to maintain levels of service for each category of asset. The Council is introducing best practice asset management planning for all Council assets, including consistent investment and management to deliver the required services at appropriate cost to the community. Information is being incorporated into asset management plans to inform Council decisions on expected changes in the climate, such as:

- the current central government guidance for climate change impacts;
- recommendations for updating risks to assets and property management as guidance changes over time; and
- identification of assets, property and the services they provide, which may become increasingly at risk over time.

Councils also have an obligation to make information available so that the public, developers, and others can make their own decisions on property or asset investment or divestment. An additional key driver is the insurance industry – as seen in Christchurch and elsewhere, the level of investment in a particular location can be determined by raised insurance premiums, or the unavailability of insurance.

With sea level rise the impact of major storms is set to get dramatically worse, and with a higher base sea level even a small storm is likely to have a much greater impact. For instance, a storm event that currently occurs on average every 200 years could shift to occur on average every 3 years with just 30cm of sea level rise. With 50cm of sea level rise, this severity of storm would occur on average every year. From this we can also determine the cost implications – for example, if the last 1 in 200 year flood caused \$10M of damage at the coast, then a future sea level rise of 30cm could be expected to cost \$3M per annum. With 50cm of sea level rise the costs could be \$10M p/a. Continued development in low-elevation coastal areas would further increase the value at risk.

#### 5.3 Long-term view

There are no real surprises around the areas likely to be most affected by sea level rise in Wellington – they are low-lying, often reclaimed land, including areas such as the CBD, Kilbirnie/Rongotai, Makara, State Highway 2, Miramar, and Makara Beach. In the face of sea level rise, a strategic approach is needed that cuts across all areas and asset categories. While the question for short-term responses is "How do we maintain the expected level of service for each of our assets" for strategic long-term issues the question becomes "Are our assets and development plans resilient to long-term risks?" This is a function of where they are located and how they are designed, defended and used.

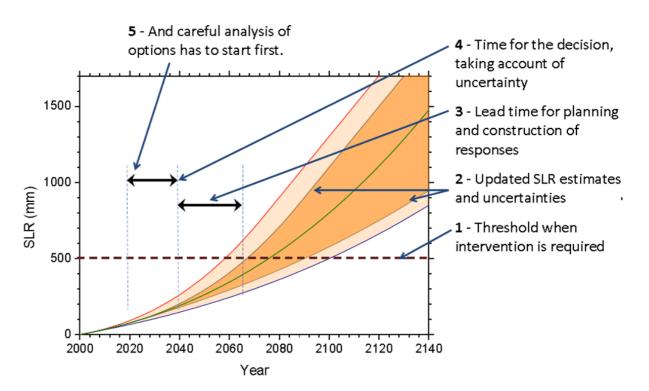
Over time large areas of the city may be affected by sea level rise – including key infrastructure, amenity and public and private property. While protecting the coast may seem like an obvious solution – for example through use of sea walls or other barriers – such options may have prohibitively high establishment and maintenance costs, be technically difficult, and raise the level of risk from other hazards. For example, if a sea wall protecting Wellingtons CBD was technically feasible, it may offer relatively short-term protection, have adverse environmental impacts, and result in much of the CBD area existing below sea level over time – increasing its vulnerability to severe storm events and impacts on the coastal water table. In an environment at high risk of earthquake, tsunami and liquefaction, this may not be an appropriate long-term solution. In addition, removal of stormwater would become more challenging over time. Coastal defence responses would also have significant impacts on our relationship with the coastline and the harbour and the sense of place that this provides.

The main alternative to defending the coast is to focus development in other areas and to gradually limit major investment activities near the coast over a period of decades. Further city-wide cost-benefit analysis for a range of strategic development options is needed. For instance, analysis may suggest that the city's growth strategies and their compatibility with high risks from a multitude of hazards should be reviewed. Any amendments to growth strategies would then filter down to inform all Council activities. So, for example, changes to the District Plan or asset management investment would be driven by strategic decisions providing preferential support for areas of development assessed as lower risk. A key component of a long-term adaptation programme will include setting up adequate monitoring and reporting on changes taking place in the environment, the economy, and the community. While some of this information exists currently, other elements are not tracked, so measures may need to be investigated or established, such as:

- how sea level, storm surge and groundwater salinity in the vicinity of Wellington harbour and coast are tracking over time;
- trends in coastal population and development;
- monitoring changes to insurance premiums and level of available cover; and
- identifying thresholds that apply for different system components for example, at what stage of sea level rise would most of our existing coastal defences require significant investment to increase their elevation?

An additional factor is that communities, their values, and technology are likely to alter significantly over time periods of decades. It is difficult to envisage now how communities may be living in 50-100 years' time.

Given that the rate of sea level rise is likely to increase exponentially over time, it is important to begin thorough options analysis, to allow time for decision-making processes, planning or construction lead-times, and accommodate the uncertainty of the exact timing of sea level rise. A useful infrastructure example is Transmission Gully – with over 40 years in the planning the resource consents have only recently being granted. The following chart indicates likely timeframes for responding to sea level rise, taking into account the uncertainty around when the changes will occur, as well as building in time for robust analysis, decision-making, and response lead-times. By way of example, a 50cm threshold is indicated – however, responses for lower levels should be considered much sooner, while higher thresholds must also be allowed for to ensure that the correct response option is chosen.



This report is officer advice only. Refer to minutes of the meeting for decision.

Chart based on Reader and Ranger (2011) Thames Estuary 2100 Project

### 5.4 Wellington city leadership

Globally coastal communities are struggling to assess the business case for responding to sea level rise. It can be difficult to know what different responses will cost, or what the costs of not responding may be. We have the capability right here in Wellington to provide a best practise city response, which will be highly sought after by others. Because of the research and policy work done to date through the 2010 Climate Change Action Plan, Wellington City Council is recognised as taking a leading approach to this issue. This has generated interest from other Councils. businesses. research institutes. and central government. The compelling story is that we have a huge wealth of expertise in Wellington, across science, research, local government, central government and business. The issue of sea level rise presents a prime opportunity for leadership. It also has close alignment with our resilient and eco-city strategic direction. There are several key leadership opportunities, which if done well, will facilitate informed investment decisions and greater status internationally – in turn benefiting our economy. An innovative leadership approach would include decisions to:

- **Work collaboratively** with the Council acting as the co-ordinating hub, ensuring that a regional approach is undertaken, and seeking to attract funding from other organisations;
- Assess and prioritise response options improving analysis on impacts and cost-benefit, or carrying out specific studies in identified priority or 'hotspot areas' (e.g., investigate groundwater salinity, or the level of protection provided by existing seawalls, etc.);
- **Engage with communities** to provide our information, and to understand their long-term vision and preferences for the city, using new approaches to participatory decision making on urban planning issues;
- **Develop and implement a long-term, strategic response** to the issue which could become a benchmark for others to replicate, and provide confidence to future investors as well as insurance providers; and
- Advocate for effective central government involvement the parts of Wellington potentially at risk from sea level rise include assets of national significance. Wellington could help to influence the type and level of technical, financial and policy support provided by central government to assist coastal communities.

#### 5.5 Developing a strategy and work programme

Key elements of a sea level rise response strategy include:

1. Determine the likely impacts	a) use the latest scientific findings and research, particularly of most relevance to Wellington
	<ul> <li>b) identify costs, beneficiaries, liabilities, compensation, insurance, planning and legal implications, intergenerational debt, etc</li> </ul>
	c) assess city-wide cost-benefit for a range of strategic development options
2. Identify viable response options	a) decide what level of sea level rise the city should use for its planning, and what the community is prepared to live with
	<ul> <li>b) identify preferred options for affected areas, implementation pathways, monitoring impacts and proposed 'trigger points'</li> </ul>
3. Plan and implement	a) review existing city strategies (growth spine, central city framework, urban development, etc) to reflect improved understanding of strategic risks
	b) clarify implementation, strategic and policy roles across Council and the city
	c) estimate Council budgetary requirements for a range of options (e.g., road maintenance, stormwater, etc)
	d) develop a planned approach (protect, accommodate, retreat) cascading from strategic decisions to planning, property and asset management

As part of the Regional Plan review, a regional hazards management strategy has been proposed. This could provide the vehicle for integrating climate change risk, including sea level rise, with natural hazards – which is key to ensure that our responses deal with all risks, not individual risks in isolation.

#### 5.6 Managing communications and community engagement

One of the key issues with engaging on climate change impacts is that people often see it as a future problem, which is unlikely to affect them, and consider there is little that they can do as an individual or organisation. Again, there is an opportunity here for the Council to own the issue, tackle it head-on and demonstrate how we intend to approach it proactively. The Council should progress our work in conjunction with our community, involving all sectors in an ongoing and structured dialogue on strategic city issues, building ongoing relationships, utilising existing and new groups, and using existing and new methods.

#### Key messages

There are a range of messages that the Council will need to consistently and effectively voice to the public, including:

- Adapting to sea level rise is a real issue for Wellington, that will require the development of appropriate responses in coordination with regional and central government;
- Early planning is the most effective approach to safeguard our coastal development and wellbeing; the initial step is to assess the scale of the likely impacts and the range of response options available;
- Council is seeking to lead the way by working collaboratively, openly and transparently on this issue with communities and stakeholders;
- We already have a wealth of talent working on this issue in Wellington the Council can harness and direct this talent for the benefit of all; and
- This approach is consistent with the agreed city vision including *Wellington Toward 2040: Smart Capital* and the new work programme for *Our Living City.*

#### Importance of Engagement

The Council will need to be well prepared prior to commencing a programme of public engagement on climate change adaptation, which is a complex and longterm strategic issue. It will be important to understand the community vision for the city and how that will inform climate change adaptation and city resilience responses. It is likely that Wellington City Council will be making complex, climate change-related decisions that will affect almost everyone over a period of decades. Today's young people and their grandchildren will disproportionately bear the brunt of climate change impacts. The Council should commence a long-term and sustained process of community engagement, seeking to provide robust information and commencing a public dialogue that will allow for well-informed discussions and decision making.

#### **Communications and Engagement Plan**

We now need to develop a comprehensive communications and engagement plan – to bring the community along with us and to gather community input to inform our decisions. This will include: providing information, seeking constructive and informed debate, inviting constructive solutions, and outlining the next steps. We can work alongside researchers such as those from NIWA, who have tested approaches on engaging communities on sea level rise, or psychologists from Victoria University who have carried out surveys in Wellington on how people may respond to a range of different sea level rise scenarios.

Part of the Council's work will be to develop an event plan and activities schedule, which may include elements such as:

- Hosting debates or panel discussions with high-profile participants (eg, Regional mayoral panel, climate change experts panel, insurance industry representatives, waterfront businesses, etc);
- Developing community displays, and holding discussions with community groups including schools and youth;

- Ensuring that information and involvement in the process is accessible to everyone;
- Holding a solutions design competition to raise the profile of sea level rise impacts and response options; and
- Hosting a 'people's panel' made up of community leaders.

#### Tools for Engaging

There are a range of available tools that we can utilise to engage on the issue to help Council and the community to work toward their preferences:

- Our online sea level rise mapping tool similar to Google maps;
- Our 'values' analysis for social, environmental, cultural and economic values;
- 3-D flyovers indicating areas affected by various sea level rise and tsunami scenarios;
- Mobile and e-Plan applications under development;
- Gaming approaches: capturing community responses into issues such as peak oil have already been explored using online gaming; and
- Citizen science capturing public interests to monitor changes or impacts in the environment (eg, coastal change, salinisation affecting gardens, etc).

#### **Engagement questions**

To increase public understanding and awareness of the implications for individuals, communities, the city and the region, we could seek to pose questions such as:

- In the context of risks from sea level rise and tsunamis, how and when should Wellington adjust its city planning processes and criteria to encourage or discourage different types of coastal development (e.g. major infrastructure, commercial, residential, recreation, reserve)?
- What criteria should be used to choose appropriate strategies and levels of investment for protection, accommodation and retreat in response to sea level rise?
- How should the costs of adapting to sea level rise be distributed across coastal property owners, city ratepayers, central government and the insurance industry?
- How can communities participate more effectively in government planning decisions in response to sea level rise?

## 5.7 Key stakeholders

Wellington is fortunate to have a wide range of expertise located here – across research, business, NGO, government and the wider community. The Council has an opportunity to link with the work of a range of discrete agencies, and is well-positioned to lead this, sharing our respective findings and better understanding each other's work. For example, we could convene a regular expert panel or strategic advisory group to assist in developing our work programme. We can then build upon this to extend relationships locally, regionally, nationally and internationally (e.g., continuing our involvement in Pacific climate change adaptation work, or making links with Australian adaptation groups such as the Australian National Centre for Climate Change Adaptation Research).

While by no means a complete picture, Figure 1 below outlines a range of key stakeholders that Council would seek to work with on this issue.

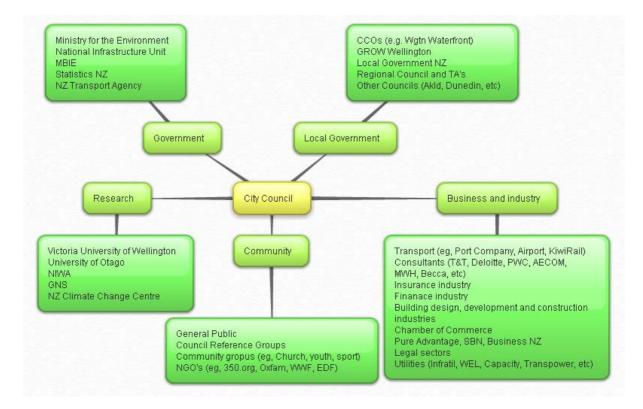


Figure 1: Examples of potential key partners and stakeholders

By way of examples from a sample of these organisations, the **University of Otago** is running the "Resilient Urban Futures" project (Centre for Sustainable Cities), over four years, offering opportunity for partnerships, post-graduate research and land-used modelling. **NIWA** carries out climate change science and projections, and has also developed a local government response toolbox, an in-depth risk model (RiskScape), and tested community engagement on climate change adaptation. **The National Infrastructure Unit** (Treasury) is developing a National Resilience Plan as part of the National Infrastructure Plan. **Statistics NZ** is developing climate change indicators in the Environmental Domain Plan.

Working collaboratively will strengthen links with central and local government and allow for development of partnerships with businesses, government and research agencies to achieve mutual outcomes, leverage funding and tie in to our vision and goals. We can use our existing funding wisely to seek corresponding contributions from others. For example, from the \$100,000 p/a currently earmarked for climate change adaptation work, we could direct some funding into a city strategic advisory group focussed on resilience to climate change impacts. We could also utilise our relationships in specific areas such as Clyde Quay boat harbour, CentrePort, or Wellington Waterfront which could be suitable case studies. In this way we can leverage Council investment to decide on joint priorities, and carry out appropriate work such as:

- Hosting a sponsored event such as a stakeholder panel or 'innovation café' to bring together a range of influential stakeholders to commence collaboration;
- Further analysis of risk, detailed costs, benefits and issues with various response options;
- Planning or legal advice, detailed hazard mapping or technical work (eg, examine ground water behaviour, survey basement flooding issues, etc);
- Working through questions of costs, who pays, compensation, insurance, planning and legal implications, intergenerational debt, etc;
- Examining other climate change impacts such as slope stability, rainfall, storm intensity and rising temperatures;
- Further developing interactive tools to include other risks and possible integration with NIWA work (including ToolBox, Riskscape, etc); and
- Developing a research Centre of Excellence, including working in collaboration with other Councils (e.g., KCDC, GWRC, Hutt City, Dunedin City, etc).

Establishing a city 'champion' will further raise the profile and level of support for this work. For example, renowned architect Ian Athfield was bought in as the 'Architectural Ambassador' in Christchurch after the earthquakes there. We could seek such a position here, acting proactively in advance of any such event or slow-onset sea level rise in Wellington.

## 5.8 Consultation and Engagement

Officers within the engagement, infrastructure and policy teams have contributed to the development of this paper.

## 5.9 Financial considerations

Considerable financial implications will need to be considered over the longterm. At this stage no additional funding is being sought.

## 5.10 Climate change impacts and considerations

This report covers a range of issues directly related to the impacts of climate change.

## 5.11 Long-term plan considerations

Funding for this activity is already provided within the Long-term plan.

## 6. Conclusion

The Council will need to respond to impacts from sea level rise – planning early is likely to provide the best outcomes. However, the Council should not aim to make any specific decisions on investment in response measures now. Major decisions will come later, once we have improved base information about our city, our assets and the impacts they might experience, and commenced an ongoing dialogue with the community.

It is crucial that this dialogue is well designed and sustained over a long period of time as the work evolves.

Contact Officer: Chris Cameron, Principal Advisor

# SUPPORTING INFORMATION

## 1) Strategic fit / Strategic outcome

This report supports Council's overall vision of **Wellington Towards 2040**: **Smart Capital** and the focus on a Living City work programme.

### 2) LTP/Annual Plan reference and long term financial impact

*Work in this area has been previously agreed within the LTP, funded at \$100,000 per annum over the three year period.* 

#### 3) Treaty of Waitangi considerations

Nil

#### 4) Decision-making

This is not a significant decision. The report sets out a number of options and reflects the views and preferences of those with an interest in this matter who have been consulted with.

#### 5) Consultation

#### a) General consultation

This report outlines a broad process for communicating, engaging and consulting with stakeholders and the community.

#### b) Consultation with Maori

A cultural values assessment has been carried out as part of the background work to develop this report. This has involved mana whenua, and their further involvement will be required as the work develops.

#### 6) Legal implications

Nil

## 7) Consistency with existing policy

*This report is consistent with existing policy*