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Update on the Work to Adapt to Climate Change Impacts

Purpose of Report

1. This report provides
 - a. an update on the work to map and identify places, communities and assets threatened by sea level rise; and
 - b. information on the alternative approaches to begin engagement with Lower Hutt communities to prepare for the forecast impacts of climate change, and the development of response options.

Recommendations

That the Committee:

- (i) notes that a number of coastal areas in Lower Hutt are at risk of forecast sea level rise and associated climate change impacts;
- (ii) notes two alternative approaches to begin engagement with Lower Hutt communities to prepare for the forecast impacts of climate change, in line with guidance provided by the Ministry for the Environment;
- (iii) notes that the community panel approach as implemented in Hawkes Bay and Makara Beach does not appear viable at this stage, due to a number of constraints, including lack of funding and resourcing to support such a process;
- (iv) notes that a workshop approach appears to be a viable and more cost-effective alternative to undertake community engagement;
- (v) agrees that officers report back with more detail on project scope, phases and timeframes to carry out community engagement regarding climate change impacts, in alignment with Council's upcoming work to review its four strategies;
- (vi) agrees that in principle, engagement work should principally be funded from within funding already set aside in the Long-Term Plan for the

2019/20 financial year for adaptation work with communities; and

- (vii) notes that given the long-term impacts arising from climate change, it is likely that there will be further costs in the future regarding
 - (i) community engagement on climate change impacts, and (ii) potential response measures.

For the reasons outlined in the report.

Background

Climate change impacts

2. In a report to the Policy and Regulatory Committee on 26 November 2018 (refer PRC2018/5/314), officers noted that the projected temperature increase as a result of an increasing concentration of greenhouse gases in the atmosphere (as a consequence of human industrial and other activities) is expected to lead to a number of significant flow-on effects, including sea level rise (SLR).
3. Even in the most optimistic scenario, the lower range of SLR for Wellington Harbour is currently 0.5m by 2120, albeit with further increases beyond that timeframe due to inertia in the climate system. But looking at a more pessimistic scenario, a plausible upper range of SLR for Wellington Harbour is currently 0.5m by 2060, 1.0m by 2100 and 1.5m by 2310, with further increases thereafter.
4. Given a number of low-lying areas in Lower Hutt, our city is expected to be at particular risk from sea level rise and compounding effects such as increased rainfall intensity.
5. Addressing the impacts requires that measures be taken in two areas: mitigation (reducing GHG emissions) and adaptation (dealing with effects that have been locked in by past emissions but which have not yet eventuated) such as SLR.

The work over the last 12 months

6. Recognising the importance of helping communities that are at risk from SLR to adapt, Council, as part of its Long-Term Plan 2018-28, approved \$200,000 to work with other councils in the region to map and identify places, communities and assets threatened by SLR, to begin engagement with Lower Hutt communities on the threat of climate change, and to develop response options.
7. Over the last 12 months, officers have carried out work:
 - a. to assess, at a high level, the vulnerability of Lower Hutt communities to SLR, one of the main expected impacts from climate change, in order to better understand the scale of the problem and where to focus effort.
 - b. to analyse and assess potential approaches to undertake a community engagement process in line with guidance provided by the Ministry for the Environment, building on relevant lessons learnt by other local authorities.

8. In this report, officers report back on this work, and provide options for undertaking this community engagement.

How vulnerable are Lower Hutt communities to sea level rise?

9. Council, in partnership with other territorial authorities in the Wellington region and Greater Wellington Regional Council (GWRC), commissioned Mitchell Daysh Ltd (a specialist resource management consultancy) to assist in the compilation of a high level assessment of the vulnerability of the different coastal areas in our region. Vulnerability in this context can be broadly defined as *“the predisposition of a human or biological system to be adversely affected”*.
10. The resulting report *“Preparing Coastal Communities for Climate Change – assessing coastal vulnerability to climate change, sea level rise and natural hazards”* is due to be released shortly by Greater Wellington Regional Council. This work is similar to what has been done in other cities. For example, consider the *“Assessment of Vulnerability to Climate Change in Auckland”* from March 2019).
11. For Lower Hutt, existing geographic information was used to assess the extent to which coastal areas would be exposed to the modelled scenario of a 1.0m SLR by 2100 in combination with a 100-year return storm event. Such storm event would increase sea level temporarily by a further 0.5m.
12. Using this information, each coastal area (unit) was then assessed against 24 criteria grouped into nine categories: Community, Business, Roads, 3 Waters, Lifelines Infrastructure, Māori and cultural, Ecological, Erosion, and Civil Defence and Emergency Management. The scores of the coastal unit against each of the criteria were then summed, in order to derive a “vulnerability score”, with low scores indicating low vulnerability, and high scores indicating high vulnerability.
13. For Lower Hutt, the assessment considered six coastal units, as follows:
 - a. Seaview (including Gracefield, Moera and Waiwhetu)
 - b. Petone (including Alicetown)
 - c. Eastbourne (including Sunshine Bay and Days Bay)
 - d. Lowry Bay (including Point Howard, Sorrento and Mahina Bay)
 - e. Pencarrow
 - f. Turakirae (including the settlement at the Wainuiomata River mouth).
14. Both Petone and Seaview have been identified as most vulnerable, largely driven by a relatively large population and the significant amount of assets and infrastructure in those areas.
15. Note that the results are not sensitive to changes with regard to the scores against particular criteria. This was confirmed as part of a sensitivity analysis. For example, Petone would still be vulnerable even if the

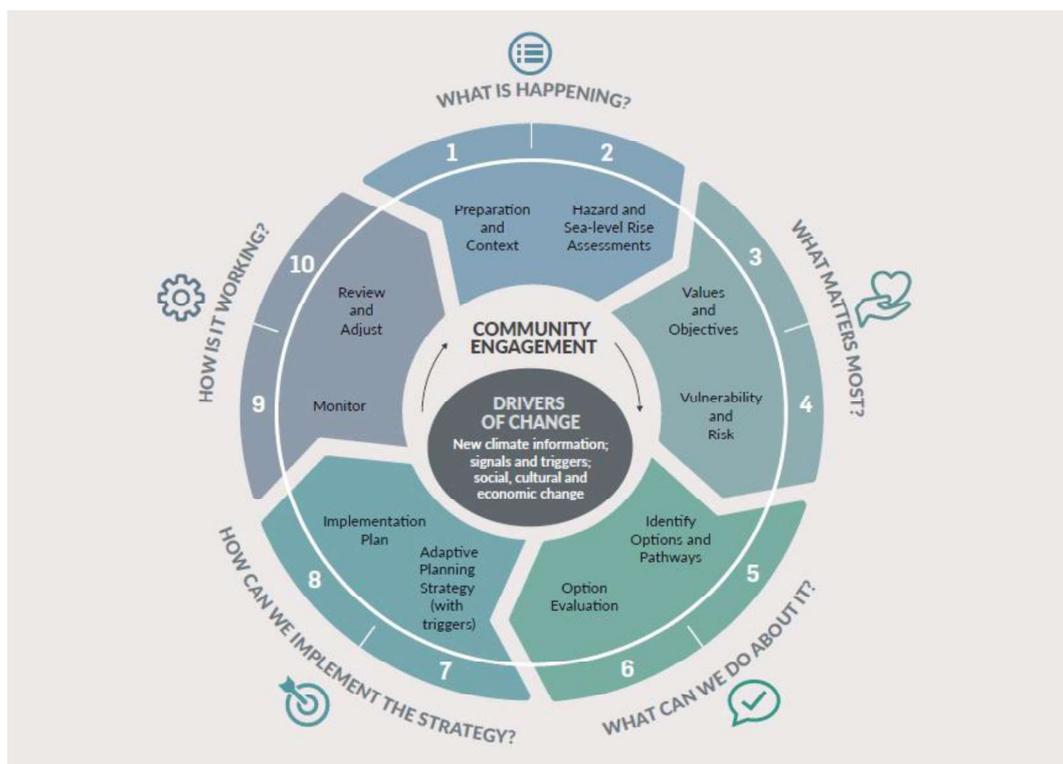
population were significantly lower, due to high scores across a range of other criteria, such as the significant amount of infrastructure assets.

16. Overall, the study confirms that a number of areas in Lower Hutt are vulnerable to sea level rise, with Petone and Seaview most vulnerable, followed by Eastbourne and Lowry Bay.
17. To complement this study, and in order to get a better understanding of the scale of the issue, officers also carried out a high level desk-top analysis of the estimated number of properties in the suburbs identified in the above study as potentially being vulnerable to a modelled 1.0m SLR and a 0.5m storm surge scenario.
18. For this, capital-value-at-risk figures are used to provide a proxy for the estimated cost of the damage. In the absence of any adaptive actions taken, the economic impact of SLR could be substantial at the city level, with the value at potential risk estimated at ~\$2.5b, comprised of approximately 2,200 residential buildings, 550 business properties and 60 community facilities. Note that these figures are initial estimates; they would need to be validated.
19. In addition, Wellington Water is currently carrying out work to model the impact of sea level rise and increased rainfall intensity on the potential for flooding in the Petone area, as part of their work to understand future network requirements. Results are expected to become available in the second half of 2019.

Community engagement on climate change impacts: the context

20. While there is uncertainty about the exact timing and amount of climate change impacts such as sea level rise, national legislation such as the Resource Management Act and policies such as the New Zealand Coastal Policy Statement require territorial authorities to plan for relevant impacts over the next 100 years.
21. In order to assist local authorities to work through these issues with their communities, the Ministry for the Environment (MfE) has developed a guide: *“Preparing for coastal change: A summary of coastal hazards and climate change guidance for local government”*.
22. The guide was developed *“to help local government and others assess, plan for and manage the increasing risks facing local communities”* and, in the absence of any more formal framework, currently provides local authorities with a best practice guide to this complex area.
23. This document describes a ten step, iterative, decision cycle process for local authorities to follow, see Figure 1:

Figure 1: MfE Adaptive Pathways Decision Cycle



Source: (page 9) in *“Preparing for Coastal Change: A Summary of Coastal Hazards and Climate Change Guidance for Local Government”*, MfE, December 2017

24. In designing a process to engage with its communities, it will be important to use this guidance in order to align with best practice, and to minimise risk of process failure. However, the exact application of the process may differ, depending on the circumstances in each local authority.
25. In any case, there is a need to link the outcomes from any community engagement to the local regulatory documents, such as the Long Term Plan and District Plan, in order to (re-)direct investment where appropriate, and to provide more certainty with regard to community investments, such as where development may no longer be appropriate in light of forecast climate change impacts.

Potential approaches to undertake community engagement

26. In order to apply MfE guidance, officers considered the approaches employed by other Councils, and any relevant lessons learnt, in order to derive the options available to Hutt City Council.
27. Overall, there are two alternative options to consider, as follows:
 - a. A community panel approach, as implemented in Hawkes Bay and in Makara Beach in Wellington City.
 - b. A workshop approach, with variations implemented in Porirua and Nelson.

28. Note that a do-nothing option has not been explored in this paper, as Council has already recognised that some level of community engagement is required, in line with the funding set aside for this work in its LTP 2018-2028 and legislative requirements.
29. Note also that when referring to the “community panel approach”, it does so in the context of the community-led panel structure as used in Hawkes Bay. This is different in structure and function to the community panels currently in use in Lower Hutt (Central, Eastern, Northern and Western Community Panels).
30. In the following sections, each option and its key advantages and disadvantages is described.

Community panel approach

31. In this approach, a community panel would be established to gain a common understanding of the SLR challenge, and to develop agreed solutions. The outcome of this process could be an agreed strategy, with significant buy-in from the community. This approach has been tested in two locations, Hawkes Bay and Makara Beach.
32. In Hawkes Bay, neighbouring councils cooperated and undertook a process that eventually resulted in their Clifton to Tangoio Coastal Hazard Management Strategy 2120, identifying preferred short (0 – 20 years), medium (20 – 50 years) and long-term (50 – 100 years) adaptive solutions.
33. In principle, the community panel approach has similarities with the community-led “Whaitua” process regarding water quality currently being undertaken and led by Greater Wellington Regional Council. However, there are some challenges with the community panel approach, as follows.

Hutt City Council funding and resourcing

34. Based on current estimates, this approach is cost and resource intensive. Assuming one panel being run in a selected Lower Hutt coastal area, and some cost and resource savings from partnering with Greater Wellington Regional Council and Kāpiti Coast District Council (common project manager, shared technical advice, etc), Hutt City Council’s 1/3 cost share is estimated at \$450,000, with approximately \$315,000 in direct costs (technical advice, etc), and \$135,000 in in-kind support (eg staff time).
35. This cost would likely be spread over two financial years. Notably, if cost and resource savings could not be realised from partnering, then total costs to Hutt City Council would increase further. However, at this stage, Council’s LTP has only allocated \$200,000 during the 2019/2020 financial year, and Hutt City Council would not be able to undertake a community panel approach without additional funding being allocated.

Funding and resourcing by Greater Wellington Regional Council

36. Greater Wellington Regional Council (GWRC) would have to be a key partner in the community panel approach. GWRC has confirmed that it has not allocated any direct funding toward a community panel approach as

envisaged above in its LTP. From a financial cost sharing perspective, this effectively rules out the community panel approach at this stage.

37. Having said that, GWRC has confirmed its willingness to provide staff support, including specialist advice, and it may allocate relevant funds in the future.

Lack of clarity on whether resulting solutions are affordable

38. As a result of the community-led panel approach, the communities in Hawkes Bay and in Makara Beach agreed on preferred options for dealing with sea level rise. However, some of these involve costly hard protection measures, but it is not yet fully clear whether these are affordable for the relevant communities and territorial authorities.
39. In addition, at least at this point in time, the outcomes from the community panel approach in both Hawkes Bay and Makara Beach have yet to be fully implemented, such as with relevant provisions in the councils' respective district plans. Ultimately, this would be the test to determine the success or otherwise of such community-led approaches.

Scalability

40. It is uncertain to what extent a community-led assessment panel is (or is not) scalable. This question arises from differences between the Hawkes Bay communities and the coastal regions assessed as vulnerable in Lower Hutt.
41. Key differences are as follows:
- a. Petone has a significantly higher population of about 9,500 against an estimated 5,000 people or less in the Hawkes Bay panel areas.
 - b. The capital value potentially at risk in the "Petone" and "Seaview" coastal units in particular is very likely much higher than in Hawkes Bay, a consequence of the much larger number of properties affected and urban/rural property value differences. However, it is important to note that capital value at risk is only a proxy attribute for damage and further work in this area may see the value at risk from SLR and associated effects decrease.
 - c. The process in Hawkes Bay excluded key commercial areas (e.g. the Port of Napier) from its considerations and neither the City of Napier nor the Napier CBD was considered to require adaptation responses over the next 100 years. While the Lower Hutt CBD is also not considered to be at risk from SLR at this point in time, there is a very significant amount of industrial and commercial activity in the "Petone" and especially the "Seaview" coastal units.
42. The above differences may also indicate that one panel may not be sufficient to cover the affected coastal areas of Lower Hutt. Instead, it may require up to four panels, with a commensurate increase in costs and resources required to manage these, and the potentially difficult decision around which areas may be chosen to go first. In addition, this approach may not be the most

appropriate for areas where there is a high density of businesses such as Seaview/Gracefield and parts of Petone.

43. In light of these four challenges, a community panel approach as applied in Hawkes Bay and Makara Beach does not appear to be a viable option for Hutt City Council at this point in time.
44. While there may be scope for some modifications to the process, in order to address the challenges regarding scalability and the linkage of outcomes to any District Plan review process, the lack of direct LTP funding at GWRC to support such work effectively rules this approach out – albeit these conclusions could be revisited if key factors such as funding support by GWRC were to change.

Workshop approach

45. In this approach, Hutt City Council would conduct a programme of work consisting of a series of workshops, with the first round of workshops focused on getting a shared understanding with the community on the problem and identifying values (eg amenity, property, etc.) that are at risk, and the second round focused on considering possible long-term outcomes and more immediate management options.
46. This type of approach is being utilised by Porirua City Council in informing the review of the coastal chapter of their District Plan, and Nelson City Council.
47. The workshop approach appears to be more suitable than a community panel approach for Council due to the following.

Hutt City Council funding and resourcing

48. The workshop approach is achievable within the \$200,000 previously allocated to this type of work under the LTP 2018-28.
49. While the approach would put pressure on existing staff resources, third-party community engagement support could be procured in order to supplement existing staff resources.

Resourcing by Greater Wellington Regional Council

50. GWRC has indicated its willingness to provide in-kind support, ie staff time and specialist advice.

Linkage to means of implementation

51. A key feature of the workshop approach is that it could link directly with the development of our next Long Term Plan 2021-31, the review of Council's four strategies and proposed spatial plan, and the review of our District Plan. The work for the development of the LTP and the review of our strategies and the District Plan is likely to get under way during the 2019/20 financial year, and the outcomes from the community engagement process could feed directly into these.

52. This point is crucial, because outcomes resulting from the community engagement process could be meaningless unless relevant decisions are reflected in the LTP (in terms of funding for adaptation measures, especially in the context of affordability *vis a vis* other council priorities), any spatial plans and associated strategies (in terms of the shape of city in the context of a changed climate) and the District Plan (in terms of relevant rules to drive development or limit development in certain areas).
53. In addition to the outcomes of the process informing the future content of relevant strategy and planning documents at Hutt City Council (eg District Plan), as an intermediate step, the process could result in a more action-oriented Climate Change Adaptation Plan to inform work over the shorter-term, such as the next five years.
54. Note that officers are scoping the work for the development of a potential community-wide Lower Hutt Zero Carbon Plan. In light of the linkages between climate change adaptation and mitigation, a potential Lower Hutt Zero Carbon Plan and a possible Climate Change Adaptation Plan could ultimately be joined together to form a Lower Hutt Zero Carbon and Climate Resilience Plan.

Scalability and flexibility

55. The workshop approach is sufficiently scalable in order to allow wider participation of members of the public, not just those selected for a community panel. Where required, the number of workshops could be increased, depending on the demand.
56. In addition, the process could potentially be supplemented by the establishment of a stakeholder reference group. While it would not have the same scope as a community panel as utilised in Hawkes Bay, it could serve the function of a more frequent communication and feedback mechanism between Council officers designing the process and leading the work, and engaging with the wider community. Such a stakeholder reference group could be made up of key business and community representatives, including one Councillor and one representative from the Youth Council.

Next steps

57. Officers could report back by the end of 2019 with more detail on project scope, phases and timeframes to carry out community engagement regarding climate change impacts, in alignment with Council's upcoming work to review its four strategies.

Regional collaboration and governance

58. In 2017, Wellington Region Climate Change Working Group (WRCCWG) was established to provide a forum via which councils and mana whenua from across the Wellington Region can network, discuss issues, share information and where appropriate, achieve a consistent approach across all jurisdictions on climate change mitigation (reducing greenhouse gas emissions) and adaptation (preparing for impacts such as sea level rise). The WRCCWG is made up of representatives from each local council and mana whenua.

59. In June 2018, a sub-group to the WRCCWG was established to progress work on options for engaging with communities on climate change impacts such as sea level rise. The working group approach has been a valuable means of collaborating on proposed work regarding climate change adaptation and mitigation.
60. One of the issues considered in more detail was regional governance and/or oversight of relevant community engagement processes going forward. Options were developed, including retaining these (non-statutory) working groups or alternatively establishing a joint-committee established under the Local Government Act 2002.
61. Officers consider that it would be useful to consider the value of changing the structure of one of those working groups to a joint committee, in order to provide a more formalised way of collaboration between local councils, GWRC, and mana whenua.
62. While there are administrative costs associated with the establishment and maintenance of a joint committee, key benefits are that it could improve clarity and focus to regional cooperation on climate change work, provide for improved transparency with recorded agendas and minutes, and to provide a more formalised way of having mana whenua involved at the governance level.
63. Within the Wellington region there are several examples where joint committees are in place on issues of common interest and similar complexity, such as the Wellington Region Waste Management and Minimisation Plan Joint Committee, the Regional Transport Committee, and the Civil Defence and Emergency Management Committee.
64. Councils may be asked to consider the establishment of a joint committee later in the 2019/20 financial year.

Financial Considerations

65. In principle, the engagement work, if going ahead, could be funded from within the funding already set aside in the Long-Term Plan for the 2019/20 financial year for adaptation work with communities.
66. Given the long-term impacts arising from climate change, it is likely that there will be further costs in future regarding (i) community engagement on climate change impacts, and (ii) potential response measures.

Appendices

There are no appendices for this report.

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