SOUTH DUNEDIN FUTURE - PROGRAMME UPDATE

Department: Maori, Partnerships & Policy

EXECUTIVE SUMMARY

1 The purpose of this report is to update Council on the status of the South Dunedin Future (SDF) Programme, following the appointment of a dedicated Programme Manager in August 2021. It presents the findings of an initial assessment of climate change-related challenges facing South Dunedin and outlines the programme structure, logic, activities, and next steps.

2 South Dunedin, along with other low-lying areas of the city such as Harbourside, are exposed to a range of natural hazards. Climate change is expected to increase the intensity, frequency, impact and consequently the risk presented by some of these hazards. The flat area of South Dunedin likely to be most affected supports a large, diverse community with strong connections to place. Local identity, social and economic indicators, levels of resilience, are all highly varied. The complex and interconnected nature of these issues require an equally integrated response.

3 To date, the Dunedin City Council (DCC), Otago Regional Council (ORC), and many other stakeholders have undertaken a wide range of initiatives intended to tackle specific issues. Many of these have been associated with the South Dunedin Future (SDF) Programme to varying degrees. However, in practice, most initiatives have operated as loosely connected projects, rather than as a coherent programme of work with a clear strategic intent. With dedicated resourcing, and an evident commitment from all stakeholders, there is a real opportunity to realise a step-change in the SDF Programme and form a programme that is greater than the sum of its parts.

4 This will not be an easy or simple task. It will require an agreed strategy, effective collaboration within and across Council organisations, and meaningful partnerships with mana whenua, the South Dunedin community, and other stakeholders. However, it is certainly achievable, and there is a real opportunity to identify a shared vision of the future for South Dunedin, and to develop a range of potential pathways to achieve this vision. There are many current uncertainties, some of which will endure, so the SDF Programme will need to deal with this and make or support decisions on the best available information. However, one certainty is that our natural and built environments are changing, as are our communities. Planning for and responding to these changes will deliver better outcomes.

5 This paper outlines the findings of the current state assessment of the SDF Programme and notes next steps but does not present options at this time. A more fully-developed SDF Programme Plan, with options, will be presented to Councils in mid-2022. Councils may also be asked to support development of options during partner and stakeholder engagement processes in early-2022.

RECOMMENDATIONS

That the Council:

a) **Notes** the findings of the current state assessment of the South Dunedin Future Programme, including the structure, strategic intent, change logic and associated activities.

b) **Notes** the next steps, and that Councillors, mana whenua, South Dunedin community and other stakeholders will have multiple opportunities to engage in the programme definition phase.

c) **Notes** the upcoming programme definition phase will adopt a Dynamic Adaptive Pathways Planning (DAPP) approach, supported by technical assistance from the National Institute of Water and Atmosphere (NIWA).

d) **Notes** that a report will be provided to Councils in mid-2022 on the results of the next phase, which will include a more detailed South Dunedin Future Programme Plan.

BACKGROUND

6 South Dunedin is a large, diverse community of approximately 12,000 residents. Historically, the location was an important manufacturing and service area for Dunedin. It remains important for light industry and has also evolved into a destination retail area. It is central, flat and conveniently located, and home to many businesses, schools and popular amenities such as the St Clair and St Kilda beaches. South Dunedin, and other low-lying areas such as Harbourside, host a range of essential infrastructure and DCC assets, which support services for wider Dunedin.

Operating context

7 South Dunedin is exposed to a range of natural hazards, due to its low-lying area built on a former coastal wetland. Potential hazards include coastal inundation from storm surge or tsunami; runoff flooding exacerbated by a high groundwater table; and seismic hazards such as liquefaction.

8 Climate change will likely increase most of these hazards over time through rising sea level, rising ground water, and increased frequency and severity of storm events. Land subsidence may also increase both the impact of these hazards and the rate of onset.

9 While much work has been undertaken to enhance environmental monitoring and better understand natural hazards, there remain gaps in our knowledge of the natural coastal and ground water processes. How these complex natural processes interact with the built environment in and around South Dunedin, and the impact of climate change on these and other processes, also remains uncertain.

10 Local identity, social and economic indicators, and levels of resilience are highly varied across South Dunedin. Residents and non-residents have deep historical, cultural, and personal connections to the area. The flat geography hosts core DCC infrastructure, and enables access to housing, community services, and economic opportunities found largely in South Dunedin.

Most census statistical areas in South Dunedin register 8-10 on socioeconomic deprivation index (10 being the most deprived), meaning pockets of the community are vulnerable and may not be well placed to adequately adapt to change. This complexity impacts potential adaptation options as the views, needs and interests of stakeholders are wide-ranging.

11 South Dunedin's exposure to natural hazards, legacy infrastructure that is ill-suited to servicing future needs, and the community's varied capacity to adapt, make it vulnerable to the negative effects of climate change. The complexity of the issues, and many unknowns, also creates unavoidable uncertainty. It is not possible, practical, or sensible to wait until all uncertainties are resolved before making decisions. Long lead-in times for many potential adaptation options require decisions to be made on evolving understandings of the potential impacts of climate change.

What has been done to date in response to these issues?

12 The potential impact of climate change on South Dunedin has been the subject of specific investigation by the DCC and ORC since the late 2000s. In 2010, the DCC commissioned a report by University of Otago Emeritus Professor Blair Fitzharris to examine the Climate Change Impacts on Dunedin (the 'Fitzharris Report'). In 2009 ORC established the first permanent groundwater monitoring network and in 2012 undertook initial groundwater rise modelling.

13 The major flood event in June 2015, which caused widespread flooding across South Dunedin, proved to be a catalyst for councils adopting a more integrated approach for responding to climate change-driven issues. In June 2016, incumbent Mayor Dave Cull wrote to the residents of South Dunedin outlining key challenges and describing a suite of responses from the DCC and ORC. This included research into natural processes, maintenance and optimisation of existing infrastructure, and consideration of medium-term options to reduce the risk of flooding due to rising groundwater and severe rainfall events. This collection of activities would subsequently become known as the 'South Dunedin Future' Programme.

South Dunedin Future (SDF) Programme

14 To date, the focus of the SDF Programme has included three core workstreams: (i) community engagement; (ii) environmental investigations and monitoring; and (iii) interventions to help mitigate short-term flood risk and identify risk posed by sudden onset hazards like earthquakes.

15 This work has involved extensive community engagement, including 60 plus meetings and hui over 2020-21 to build trust, relationships, and awareness of key issues. This work has been supported by a range of communications activities, including proactive media engagement and the establishment of South Dunedin Future webpages, designed to increase access to information about local climate change adaptation issues in South Dunedin. The webpages include the history around post European settlement of 'The Flat' area now known as South Dunedin.

16 An enhanced programme of environmental research and monitoring, led by the ORC with support from external agencies such as GNS Science, Te Pū Ao, continues to build knowledge of rainfall, ground water, and coastal processes, including through rainfall monitoring, drilling of bores, and modelling storm surge and tsunami risk. This is complemented by geological hazard work looking at fault lines, vertical land movement, liquefication and lateral spreading.

17 Physical infrastructure work has included installing a new, larger filter screen at the Portobello Road pumping station for faster cleaning and pumping; improved inspection, cleaning and maintenance of 1,500 mud tanks; and fitting new backflow prevention valves to help stop

wastewater getting inside homes most at risk. The DCC's 10-Year Plan (2021-31) allocates $35 million for flood prevention works in South Dunedin, with two projects currently underway to develop an integrated catchment model and a flood alleviation plan for the area.

18 The St Clair-St Kilda Coastal Plan Project, *Whakahekerau – Rakiātea Rautaki Tai*, is seeking to create a safe and sustainable future for this stretch of coast by establishing a basis for transitioning towards more appropriate and sustainable coastal management practices.

Other related work

19 In addition to climate adaptation-related activities, the DCC has committed $12 million to the design and construction of a new South Dunedin Library and Community Complex, as a strategic investment and community asset for the area. A range of other relevant work is either planned or underway, which is currently not formally associated with the SDF Programme, but which will have an impact on the outcomes in South Dunedin. For example, open and green spaces will be a central factor in managing climate change impacts in the future. The DCC is currently developing an Open Spaces Plan for Dunedin and is undertaking a Sports Facility Needs Assessment. The DCC's Transport Asset Management Plan is also investigating road maintenance options that are better suited to the ground conditions in South Dunedin or that could help flood mitigation.

20 In 2018, ORC joined the NZ SeaRise research programme. One key objective of the programme is to improve sea-level rise projections for New Zealand to better anticipate and manage impacts such as flooding, rising groundwater levels, and coastal erosion. South Dunedin has been selected as a regional case study as it is a low-lying urban area impacted by subsidence and sea level rise. The case study outcome will be used to develop planning and risk assessment toolkits for sea level rise adaptation.

What is the current state of the SDF Programme?

21 A critical success factor of any programme is alignment with corporate or organisational strategies. However, currently there does not appear to be any widely established SDF Programme goal or objective(s), nor clear alignment with DCC strategies and plans. Consultations with stakeholders have indicated many different understandings of both the scope and purpose of the SDF Programme. While these generally coalesce around themes such as community resilience, community wellbeing, and sustainable development, they vary widely in adopting a focus on natural, built, or social environments, or governance factors.

22 This is compounded by a lack of legislative clarity around roles and responsibilities for local government in respect of climate change adaptation. The release of the National Adaptation Plan, the Resource Management system reform – including a new Climate Adaptation Act - and the Future of Local Government review is expected to provide clarity for local government.

23 However, the current uncertainty around the agreed strategic intent of the SDF Programme has proven to be a constraint for agreeing an overall programme mandate, structure, and processes. Roles and responsibilities of key contributors, as well as lines of accountability have been unclear, given uncertainties about the SDF Programme mandate and objectives. In this environment, the SDF Programme has struggled to fully establish and sustain momentum.

24 While many connections between South Dunedin-focussed projects have been identified, and systems and processes set up to support cross-council governance and management, these efforts have had mixed results. Typically, such arrangements have not endured changes in key personnel or proved sustainable across multiple years.

25 While the many projects and initiatives described above have been nominally associated with a 'South Dunedin Future (SDF) Programme', in practice, they have operated more as a collection of related yet independent projects, rather than a coherent and coordinated programme of work. Many projects have enjoyed individual successes, the St Clair – St Kilda Coastal Plan Project and ORC's monitoring and natural hazards assessment work, are clear examples. However, efforts to coordinate between councils, and across multiple projects within councils, have focussed largely on information sharing only.

26 In this sense, the many benefits of having a genuine South Dunedin Future programme, (i.e. aligning to organisational strategies, establishing mechanisms to deliver the desired change, effectively integrating this into a business-as-usual environment, and realising a range of strategic and operational efficiencies), have not been realised to date.

So where to from here?

27 The two Councils have recognised these issues and have responded by establishing a jointly funded, dedicated Programme Manager role, which was filled in August 2021. This role is supported by a dedicated SDF Programme budget of $500,000 per annum (from the DCC 10-Year Plan budget) and $420,000 (excluding staff time) per annum in the first three years of ORC 2021-31 Long Term Plan and then $300,000 per annum until 2031.

28 These actions provide a firmer foundation for effective management of the SDF Programme. Subsequent sections of this report outline additional work required to make best use of this investment and fully realise the benefits of managing a wide range of initiatives under the umbrella of the SDF Programme.

DISCUSSION

Current state assessment of the South Dunedin Future Programme

29 An assessment of the current state of the SDF Programme has sought to identify the key issues and challenges facing South Dunedin, the various activities being undertaken in response, and the links to the broader strategic objectives of both the DCC and ORC. In short, what are the problems, what is being done in response, and how will that contribute to Dunedin's larger, longer term objectives?

Issues and hazards affecting South Dunedin

30 The range of key hazards and issues affecting South Dunedin, and other low-lying areas of Dunedin such as Harbourside, are well known, and can be grouped into four domains:

a) *Natural environment* – features and processes of the natural, physical environment, such as geological (earthquakes/liquefaction), hydrological (rainfall/flooding), and coastal events or hazards (storms/erosion).

b) *Built environment* – features and processes of cities and other built environments, such as three waters infrastructure, ground cover, transport networks and urban development.

c) *Social environment* – the views, values, and knowledge of key stakeholders, such as levels of understanding of the issues, risks and options, relationships, and levels of resilience.

d) *Governance* – the broader environment in which decisions are made and actioned, such as changing policy, legislation, and regulations, organisational roles, and mandates.

31 In many instances the programme will seek to grapple with interconnected challenges, straddling one or more of these domains. For example, how changing rainfall patterns (natural environment) might impact the operational performance of storm water systems (built environment), where stakeholders have different expectations about what the system should deliver (social environment), against a backdrop of uncertainty over who will own and operate the system in future (governance environment).

32 A fuller summary of these issues and hazards can be found in Attachment A (note this is a summary, not an exhaustive list).

Actions and responses

33 As noted earlier in this report, a range of actions and responses have been undertaken over recent years under the banner of the SDF Programme. The current state assessment has sought to identify these activities, group them into logical workstreams, and determine some of the key products ('outputs'). This work was based on extensive consultations with DCC and ORC staff and review of a range of operational documents. The four workstreams and their key outputs include:

a) *Science & Technical* – Understanding how the changing physical environment affects natural hazards and risk, now and into the future.
- *Key Outputs:* Hazard monitoring (sea-level, tides, ground water, erosion, subsidence, rainfall); and Hazard investigation and modelling (geological, hydrological & coastal hazards).

b) *Planning & Infrastructure* – Managing hazards and risk through land use planning, engineered and nature-based solutions.
- *Key outputs:* various projects including a Future Development Strategy, St Clair-St Kilda Coastal Plan, South Dunedin Flood Alleviation Plan, and Integrated Catchment Model Project.

c) *Community Development & Engagement* – Partnering with the community to build resilience; identify preferred futures and determine viable adaptation pathways.
- *Key outputs:* Communications and engagement strategy, plan and reviews; South Dunedin Library and Community Complex; Community Development and Resilience Plan and Projects.

d) *Strategy & Policy* – Integrating research and best practice into decision-making, while navigating a *changing* policy, legislative and regulatory environment.
- *Key outputs:* Council submissions to central government climate change processes; climate change mainstreaming; and research and best practice projects.

What is this work leading to?

34 The assessment has also sought to identify the changes ('outcomes') that are being sought from this work. Council strategies and plans have been reviewed to identify if and where these outcomes align to the councils' broader strategic objectives.

35 In almost all instances, clear connections can be identified between the SDF Programme activities that are underway and the strategic objectives of the DCC and ORC. However, the

vertical nature of existing Council strategies and operations (e.g. Three Waters, Transport, Parks & Recreation, Natural Hazards), and horizontal nature of the SDF Programme (e.g. programme objectives cut across these vertical silos of activity, budgeting and accountability), mean these connections are not immediately evident.

36 The various outcomes of the SDF programme are found in many strategies and plans across both Councils, but not centralised in one place. This means activity and project work cannot always easily be linked to strategies or plans, and that it can be very difficult to identify strategic linkages across different workstreams.

37 Discussions with key staff, and review of existing Council strategy and policy documents, have identified the following set of short-term (1-3 years) SDF Programme outcomes:

a) Science & Technical
- Improved knowledge of the changing physical environment and its effect on natural hazards.
- Decision making is informed by better understandings of natural hazards and risk.

b) Planning & Infrastructure
- Urban development in South Dunedin aligns to current and future risk from natural hazards.
- Increased flood resilience in at-risk areas of South Dunedin.

c) Community Development & Engagement
- Community is empowered to shape futures and inform pathways for South Dunedin.
- Community is empowered to build resilience.

d) Strategy & Policy
- Dunedin's interests are reflected in climate change-related policy, legislation, and regulations.
- Research and best practice are integrated into Council strategies, plans and operations.

38 The set of outcomes noted above are a product of existing information. It is anticipated that as more information becomes available, the goals, objectives, and outcomes sought will change to reflect growing certainty in particular areas. Programme activities will also need to adapt to these changes.

39 Councils will be asked to formally confirm a set of SDF Programme outcomes during the next phase of the programme, to provide a clear strategic direction and mandate.

SDF Programme goal and vision

40 Developing a goal or vision statement for the SDF Programme and confirming high level, longer term outcomes is a top-down process that should involve a wide range of partners and stakeholders. This would provide the best opportunity to develop a set of SDF Programme objectives that are robust, inclusive, widely owned, and sustainable over time. This process is planned to occur in early 2022 and is detailed in the 'Next Steps' section below.

41 In the interim, it is possible to use existing information to formulate both an indicative goal and vision for the SDF Programme and to identify indicative higher level, longer term outcomes. The

value in developing these placeholders, which like the workstreams, outputs and short-term outcomes are based on best available information, is that they act to illustrate the of logic of change that the SDF Programme could follow in years to come. This 'story' is often useful for enabling partners and stakeholders to get a sense of where things could go, and what the steps might look like along the way.

42 Using information from existing workstreams, outputs, and short-term outcomes could reasonably lead the following set of indicative mixed-term outcomes:

- Reduced risk from natural hazards
- Reduced frequency and impact of flooding
- Reshaping urban form of South Dunedin
- Climate change adaptation impacts are equitable
- Increased community resilience

43 Similarly, this set of mixed-term outcomes could reasonably lead to the following indicative SDF Programme goal or vision:

- Enhanced community resilience and wellbeing through sustainable urban regeneration of South Dunedin.

Partnership with mana whenua

44 A central component of defining and establishing the SDF Programme will be a partnership with mana whenua. This will be particularly important for the SDF Programme, where there will be many opportunities to transition to more sustainable, holistic interactions between people and place. This has strong alignment with Te Ao Māori. The intention is to identify viable pathways from current situation to futures where communities enjoy greater wellbeing, increased resilience, and have more sustainable interactions with their environment. It is envisaged that a partnership with mana whenua will be integral to this process, and could span governance, co-design, and delivery elements of the SDF Programme. An approach has been made to Aukaha Ltd and Te Rūnaka o Ōtākou proposing initial discussions.

Programme principles

45 The current state assessment process has also sought to identify some general principles under which the SDF Programme is currently operating and could operate in future. Principles are particularly useful in climate adaptation programmes because they provide guidance in areas where there may be ongoing uncertainty, enabling more consistent and coherent decisions.

46 The assessment identified two overarching strategic principles and five programme principles. It would be worthwhile testing these with partners and stakeholders during the next phase of the SDF Programme, with a view to refining and formally agreeing in due course. Until then, there would be benefit viewing them as 'working principles' that provide interim guidance. The principles are summarised below, with a fuller description outlined in Attachment A.

47 The two strategic principles relate to Treaty partnerships with iwi Maori, and sustainability and intergenerational equity. Each of these strategic principles features prominently throughout DCC and ORC strategies and plans and both are common themes in the day-to-day work of both councils.

48 In addition, five programme principles were identified in the assessment as best reflecting the strategic intent and operational approach of the SDF Programme. These include adopting approaches that are (i) community-centred, (ii) evidence and risk-based, (iii) plan for change, (iv) are flexible and responsive, and (v) transparent and accountable.

OPTIONS

49 As this report is for noting, there are no options provided.

NEXT PHASE

Council collaboration and SDF Programme governance

50 The cross-cutting nature of climate change adaptation means that an effective response is likely to require a similarly integrated and collaborative approach. Both the DCC and ORC have identified climate change adaptation as a priority focus area, and in the case of the SDF Programme, collaborative planning, and action to address climate change risk has been underway for some time. Staff in both councils have a good track record and established processes for sharing information and collaborating at operational levels. This will need to continue.

51 As the SDF Programme progresses through the next phase of its work, the programme scope, structure, and objectives will become better defined. It is anticipated that roles and responsibilities of each council will also become clearer during this process, which should enable ongoing collaboration, while ensuring that ultimate decision-making rests with the responsible council.

52 It is understood that representatives from both Councils continue to discuss options for SDF Programme governance. In the meantime, the Programme Manager is actively working with staff across DCC and ORC and is reporting to an interim Steering Group comprising executive staff from both councils. These interim arrangements are working well at an operational level.

53 This report will be provided to both DCC and ORC Councils (on 23 and 24 November 2021, respectively).

Dynamic Adaptive Pathways Planning (DAPP) Approach

54 The next phase of work will be guided by the Ministry for the Environment's best practice document, *Preparing for coastal change – A Summary of coastal hazards and climate change guidance for local Government (2017)*, and will seek to utilise the Dynamic Adaptive Pathways Planning (DAPP) approach. The DAPP approach identifies ways forward (pathways) despite uncertainty, while remaining responsive to change, should this be needed (dynamic). A diagram summarising the DAPP process is attached in Attachment B.

55 In the approach, a range of responses to climate change are tested against possible future scenarios. Pathways are mapped that will best manage, reduce or avoid risk. A plan is developed, with short-term actions and long-term options, and includes pre-defined points (triggers) where decisions can be revisited. This flexibility allows the agreed course of action to change if the need arises – such as when new climate change information becomes available.

56 By accommodating future change at the outset, this approach helps avoid locking in investments that could make future adjustments difficult and costly. As such, it assists both longer-term sustainability and community resilience.

What will this next phase involve?

57 The next phase of the SDF Programme will include a more detailed programme planning and design process during the 8-month period from November 2021 to 30 June 2022.

58 This 'programme definition' phase will involve more in-depth work with relevant teams across DCC and ORC, as well as targeted engagements with a wide range of external partners and stakeholders. The intention is to further develop hazard and sea-level rise assessments, identify community, partner and stakeholder values and objectives, and to undertake vulnerability and risk assessments.

59 The primary output from this next phase is expected to be a detailed SDF Programme Plan, which will be provided to Councils in June 2022, and seek decisions on preferred programme objectives, structure, governance, management, and implementation options.

60 Lower-level outputs from each of the workstreams are yet to be determined, but for example, are likely to include:

a) engagement with mana whenua, including discussions on governance, co-design and implementation intended to incorporate Te Ao Māori into the programme strategy, structure, and operations
b) community consultations and engagement on long term vision(s) for South Dunedin and broader objectives for the SDF Programme
c) detailed mapping of key issues and decisions required to realise SDF Programme objectives (enabling identification of critical path actions)
d) an updated report on natural hazards affecting South Dunedin
e) commissioning of a South Dunedin climate change risk assessment
f) SDF Programme communications and engagement strategy, including upgrade of the existing websites
g) a range of new or ongoing activities, including projects and business-as-usual operations of both councils, with various degrees of association with the current SDF Programme.

61 Subsequent phases of the SDF Programme, commencing July 2022, would seek to identify adaptation options and pathways, evaluate these options, and develop adaptation strategies and implementation plans. The iterative nature of the DAPP process means that at each phase, previous work would be reviewed and refined, based on the most recent information, adding further depth and complexity to the SDF Programme Plan.

62 It is anticipated that all partners and stakeholders, including Councillors, mana whenua, community, and other groups will have multiple opportunities to engage with the SDF Programme during each phase.

NEXT STEPS

63 A further report will be presented to Council in mid 2022.

Signatories

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Attachments

SUMMARY OF CONSIDERATIONS

Fit with purpose of Local Government

The development of the SDF Programme Plan enables democratic local decision making and action by, and on behalf of communities; promotes the social, economic, environmental and cultural well-being of South Dunedin communities in the present and for the future.

Fit with strategic framework

	Contributes	Detracts	Not applicable
Social Wellbeing Strategy	☒	☐	☐
Economic Development Strategy	☒	☐	☐
Environment Strategy	☒	☐	☐
Arts and Culture Strategy	☒	☐	☐
3 Waters Strategy	☒	☐	☐
Spatial Plan	☒	☐	☐
Integrated Transport Strategy	☒	☐	☐
Parks and Recreation Strategy	☒	☐	☐
Other strategic projects/policies/plans	☒	☐	☐

The SDF programme is an integrated programme of work that contributes to objectives currently described across the DCC strategic framework.

Māori Impact Statement

Initial engagement with mana whenua has informed the development of this report, and further hui and collaboration is planned in the period from November 2021-June 2022, as described in the body of this report.

Sustainability

Sustainability will be a central component of the SDF Programme as it seeks to develop climate change adaptation options for South Dunedin. This work will be integrated with the wider climate change work programme.

LTP/Annual Plan / Financial Strategy /Infrastructure Strategy

The SDF Programme has been resourced (as described in para 26) in the 2021-2031 10 year plan; projects within the programme are aligned with the infrastructure strategy; programme planning will be aligned with the development of the 2024-2034 10 year plan, including the infrastructure strategy.

Financial considerations

Programme resourcing is described in para 26 in this report. Any update that impacts on financial considerations will be brought to Council in December 2022.

Significance

As this is an update report for Councillors, it is assessed as being low in terms of DCC's significance and engagement policy. The programme itself is of high significance, and principles and values described in the significance and engagement policy are being integrated into the design of the engagement planning.

Engagement – external

Targeted partner and stakeholder discussions have informed the development of this report, including with a range of partner and stakeholder groups.

SUMMARY OF CONSIDERATIONS
Engagement - internal The development of this report has been informed by extensive discussion and meetings with a wide range of staff across both DCC and ORC.
Risks: Legal / Health and Safety etc. There are no anticipated legal/health and safety risks associated with this update report.
Conflict of Interest There are no known conflicts of interest.
Community Boards Community boards have not been involved with the development of this update report.

South Dunedin Future Programme – Current State Assessment

Version 2.0
Council Paper

Goal/vision

Enhanced wellbeing of Otago communities, through sustainable resource management

SDF Programme Vision (TBD)
Enhanced community resilience and wellbeing through sustainable urban regeneration of South Dunedin?

Dunedin is one of the world's great small cities

Mixed-term Outcomes

SDF Pathways & Outcomes
(To be determined through DAPP-based community engagement process. Examples provided as demonstration only)

- ***Reduced risk** from natural hazards in South Dunedin?*
- ***Reduced frequency & impact** of flooding in South Dunedin?*
- ***Reshaping urban form** of South Dunedin?*
- *Climate change adaptation **impacts are equitable**?*
- *Increased **community resilience** in South Dunedin?*

Other factors:
Transport, housing, industry, commerce, urban design, parks & recreation, council property, others.

Outcomes

- Improved ***knowledge*** of changing physical environment and effect on natural hazards
- Decision making informed by better ***understanding*** of natural hazards & risk
- ***Urban development*** in South Dunedin aligns to current & future risk from natural hazards
- Increased ***flood resilience*** in at-risk areas of South Dunedin
- Community is ***empowered to shape futures*** *& inform pathways in Sth Dunedin*
- Community is ***empowered to build resilience***
- ***Dunedin's interests*** reflected in climate change-related policy, legislation & regs
- ***Research & best practice*** are integrated into Council strategies, plans & operations

Outputs

- **Hazard monitoring** (sea-level, tides, ground water, erosion, subsidence, rainfall)
- **Hazard investigation & modelling** (geological, hydrological & coastal hazards)
- Future Development Strategy
- St Clair-St Kilda **Coastal Plan**
- South Dunedin **Flood Alleviation** Plan
- Integrated **Catchment Model** Project
- ***Comms & Engagement*** Strategy, Plan & Reviews
- **South Dunedin Library** & Community Complex
- Community Development and **Resilience Plan** & Projects
- ***Council submissions*** to central government climate change processes
- Climate change **mainstreaming**
- **Research & best practice** projects

Workstreams

Science & Technical
Understanding how the changing physical environment affects natural hazards and risk, now and in the future

Planning & Infrastructure
Managing hazards and risk through land use planning, engineered and nature-based solutions

Community Development & Engagement
Partnering with the community to build resilience, identify preferred futures, and determine viable adaptation pathways

Strategy & Policy
Integrating research and best practice into decision-making, while navigating a changing policy, legislative & regulatory environment

Dynamic Adaptive Pathways Planning (DAPP) Approach
Identifying ways forward (pathways) despite uncertainty, while remaining responsive to change, should this be needed (dynamic)

Current Operating Context

- **South Dunedin supports a large, diverse community with strong connections to place**. Local identity, social and economic indicators, levels of resilience, are all highly varied. Residents and non-residents have deep historical, cultural and personal connections to the area. The flat geography hosts core council infrastructure, and enables access to housing, community services, and economic opportunities found largely in South Dunedin.
- **South Dunedin is exposed to a range of natural hazards** due to its low-lying area and many suburbs built on a former coastal wetland. Hazards include: coastal inundation from storm surge or tsunami; runoff flooding exacerbated by a high groundwater table; and seismic hazards such as liquefaction.
- **Climate change** will likely increase these hazards over time through rising sea level, rising ground water, and increased frequency and severity of storm events. Natural/geological land subsidence may accelerate issues.
- There remain **gaps in our knowledge** of the natural coastal and ground water processes in South Dunedin; and how these interact with below ground infrastructure. The impact of climate change on these and other processes, such as access to insurance, finance and central government assistance, also remains uncertain.
- South Dunedin's increasing exposure to hazards, legacy infrastructure, and the community's varied capacity to adapt, make it **vulnerable** to the negative effects of climate change.
- We face **unavoidable uncertainty**, and it is not possible, practical, or sensible to wait until these are resolved before making decisions. We need to act on current understandings of the potential impacts of climate change.

Working Principles (to be confirmed)

Strategic Principles

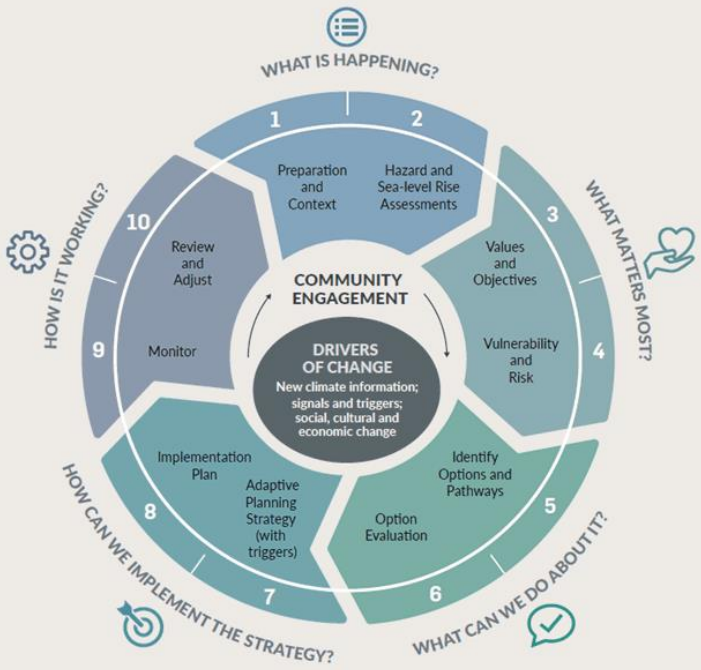
- **Te Tiriti o Waitangi / the Treaty of Waitangi** – *A Treaty-based, enduring partnership approach with iwi Māori; partnership with Maori that is enduring, effective and valuable; partnership with mana whenua to create a Dunedin that has a heathy environment, strong economy & vibrant community.*
- **Sustainability** – *Accounting for the social, economic, environmental and cultural wellbeing of Dunedin's communities, while minimising the burden on future generations (intergenerational equity).*

Programme Principles

- **Community-centred** – *Place community at the centre of transparent, decision-making processes.*
- **Evidence & risk-based** – *Use the best available science, data and information to identify options that manage, reduce or avoid risk.*
- **Plan for change** – *Natural and built environments are changing, as are communities, whether we like it or not. Planning for, and responding to these changes will deliver better outcomes.*
- **Flexible and responsive –** *Climate change presents a range of uncertainties, so we need to consider a wide range of scenarios, keep options open, and be positioned to respond to future opportunities.*
- ***Transparency*** – *Open and transparent engagement and reporting processes, promoting trust and confidence, and ensuring accountability*

Issues / Hazards *(Future issues/hazards have ➢ symbol and italics)*	Current actions and future/planned responses *(future/planned actions have ➢ symbol and italics)*			
	Science & Technical	**Planning & Infrastructure**	**Community & Engagement**	**Strategy & Policy**
Natural Environmental • Hillside run-off from surrounding catchments; flat geography encourages surface water ponding • High groundwater level/shallow water table, low storage volume • Expectation of increasing frequency/severity of storms • Coastal erosion (beach/dunes/defences) • Limited flood hazard data (interactions between groundwater, runoff, sea level, stormwater, wastewater) • Limited coastal hazard data (tsunami, storm surges, shoreline changes and local sea level rise) • Limited geological hazard data (liquefaction and lateral spreading, fault line location, vertical land movement) ➢ *Changes to wave climate/coastal dynamics* ➢ *Sea level rise; 0.19-0.27m by 2040* ➢ *Potential reduction in beach sediment supply*	• Enhanced groundwater monitoring programme • Local sea level monitoring & projections (with NZ SeaRise) • Storm surge and tsunami assessment and mapping • Ground conditions assessment (liquefaction & lateral spreading) • Hydrogeological drilling programme; update of geological 3D model • Active fault identification study • Vertical land movement study ➢ *Sports Facility Needs Assessment*	• St Clair – St Kilda Coastal Plan • Coastal process studies, contamination assessment (Kettle Park), remediation works (St Clair Seawall) • Improved rainfall catchment monitoring ➢ *Coastal dynamics modelling and options assessment* ➢ *Ocean Beach Reserve Mgt Plan* ➢ *St Kilda Dune Mgt Plan* ➢ *Kettle Park landfill remediation* ➢ *Dunedin Open Spaces Plan*	• ORC Natural Hazards portal, • ORC WaterInfo, dedicated webpage on ORC website and • NZ Geotechnical database • Communication, education and engagement sessions, groundwater display with Otago Museum, information videos, natural hazards reports and brochures. • Presentations to community hui and groups (>60 over 18 months) ➢ *new programme website with integrated GIS web portal*	• ORC Proposed Otago Regional Policy Statement 2021 • ORC Otago Regional Climate Change Risk Assessment
Built Environmental • No natural drainage outlet in South Dunedin. Stormwater is gravity driven and relies on purging by pumps. • Storm and wastewater networks are old and leaky • Impervious ground cover in South Dunedin catchment (60-100%) • Stormwater network does not meet level of service (LoS) • Potential exposure of historic landfill at Kettle Park • Pressure for additional or intensified urban development • High proportion of old, poor quality housing • Varying community views about central problem (infras. vs climate) • Forbury Park Raceway site (development risk/opportunity) ➢ *Increasing costs of maintaining transport infrastructure* ➢ *Increasing ground water ingress to storm & wastewater networks; more frequent wastewater overflows* ➢ *Risk of asset failure within storm and wastewater networks*	• Detailed topographical data captured (LiDAR) • Ongoing geotechnical assessments and transfer of information to NZ Geotechnical database • Infrastructure monitoring programme	• Upgraded screens at Portobello stormwater station • Improved stormwater network maintenance (e.g. mud tanks) • Updating hydraulic models • Integrated Catchment Model & SD Flood Alleviation Plan • Transport Asset Mgmt Plan • DCC Infrastructure Strategy • DCC 3 Waters Strategic Direction Statement (2010-60) • Shaping Future Dunedin Transport Programme ➢ *3W System Planning Project* ➢ *Updating hydraulic models* ➢ *District Plan changes (possible)* ➢ *St Clair sea wall risk assessment* ➢ *Climate adaptation through sustainable asset management* ➢ *Future Development Strategy*	• Community engagement activities to increase public awareness of flood risk; flood hazard maps. • Community engagement on the St Clair- St Kilda Coastal Plan (award winning)	➢ *Housing Action Plan*
Social & Economic Environment • Limited public knowledge of changing environment, natural hazards, and associated risks • Community uncertainties about the socioeconomic impacts of climate change and possible adaptation options • Lack of trust / engagement fatigue in segments of community • Limited engagement with mana whenua; Pasifika, multi-ethnic and disability groups; education and business sectors • Concern about loss of access/amenity to important spaces (e.g. St Kilda/St Clair beaches) • Majority of census statistical areas in South Dunedin register 8-10 on socioeconomic deprivation index (10 is most deprived). ➢ *Risk of future withdrawal by insurance and finance industries* ➢ *Economic cost of change (potential loss of jobs, economic activity, business continuity) vs cost of avoiding/delaying change (uncertain)*	• Communication, education and engagement activities across multiple hazards	• Community consultation and stakeholder engagement on network maintenance and flood alleviation plan	• SDF web page on DCC website • Coastal Plan webpage • SDF identification phase comms and community engagement process (>60 meetings/hui over 18 months) • Community grants schemes (events, support, environment) • Community development and resilience projects • Community preparedness and emergency response	• Early stage analysis to inform strategic approaches to community resilience
Governance Environment • Government reforms creating short term policy, legislative, and regulatory uncertainty. • Future of local government process is creating additional organisational / functional uncertainty. • Shortage of national guidance on climate change adaptation (e.g. managed retreat, under pending Climate Adaptation Act) • Absence of interim guidance means misalignment between current land use planning rules/practice and climate adaptation pathways • Limited strategic coherence on climate adaptation (between Councils; and within/across Council functions and operations).	• Nil	• Nil	➢ *Community and stakeholder involvement in SDF programme governance*	• RMA Act Reform Process (Natural & Built Environments Act, Strategic Planning Act, Climate Change Adaptation Act • Future of Local Government Process • 3 Waters reform (service delivery and regulatory) • Global Covenant of Mayors for Climate & Energy (GCoM) adaptation compliance activities • Academic Reference Forums ➢ *DCC Strategic Framework Refresh Project* ➢ *National Adaptation Plan (NAP) consultations* ➢ *National-to-local climate Change risk assessments*	

Figure 3: The 10-step decision cycle, grouped around five questions



Source: Adapted from Max Oulton (University of Waikato), and UN-Habitat (2014)

Source: Preparing for coastal change: A summary of coastal hazards and climate change guidance for local government, Ministry for the Environment Manatū Mō Te Taiao, December 2017.