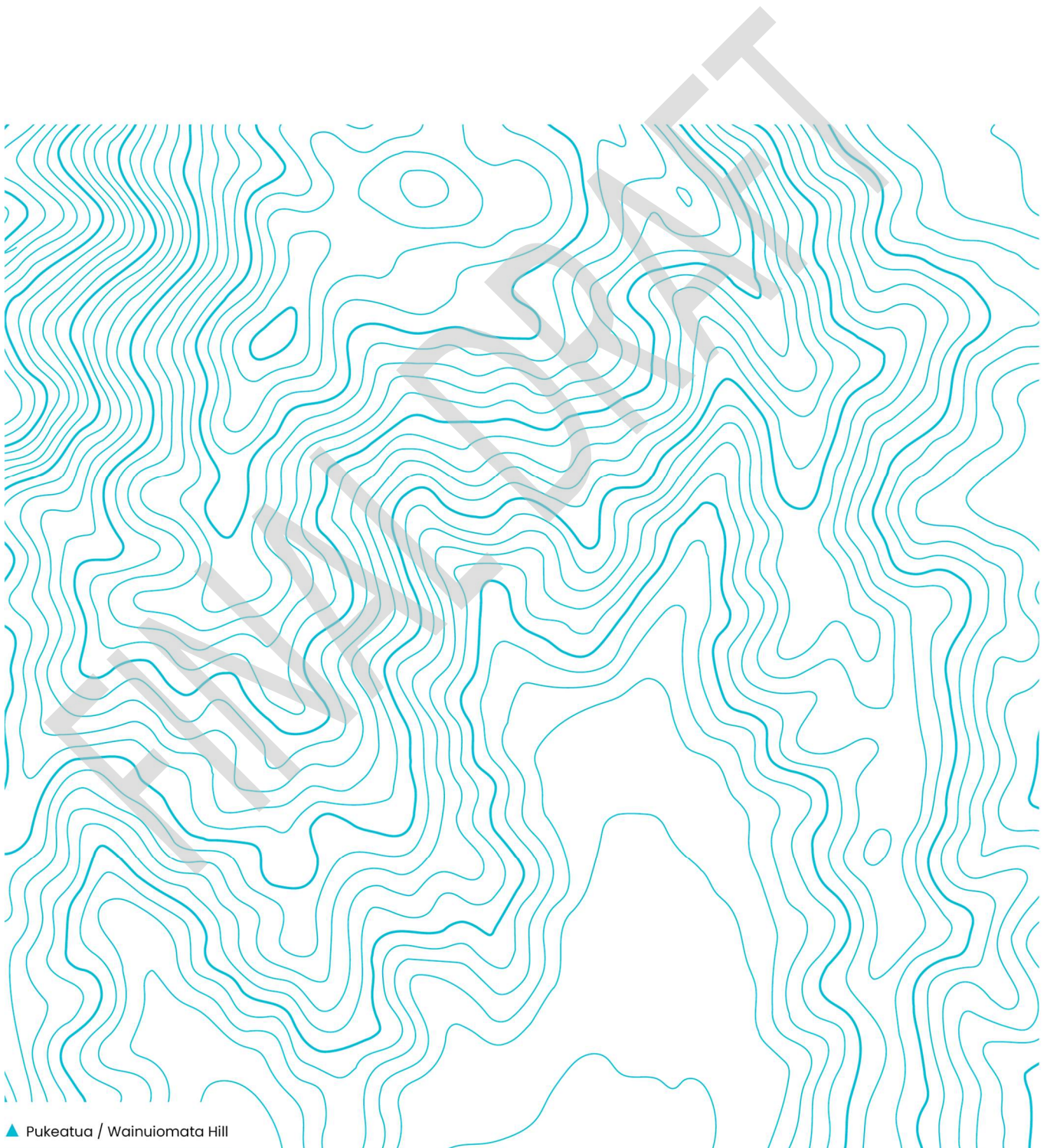


Section 32 Evaluation

WIND



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2 Overview and Purpose

- (1) Hutt City Council is reviewing the City of Lower Hutt District Plan. This is a full review of the District Plan, including the approach to impacts of urban buildings on wind.
- (2) The impacts of urban buildings on wind are addressed in the Wind chapter of the District Plan.
- (3) This report is a record of the review with regard to wind and includes an evaluation of the objectives, policies and rules of the proposed District Plan that address wind, in accordance with the requirements of s32 of the Resource Management Act 1991.
- (4) This report is part of a package of reports for the proposed District Plan. It should be read alongside the other reports prepared for the proposed District Plan. In particular, the General report that covers matters common to all topics.

3 Statutory and Policy Context

- (5) The following sections discuss the national, regional and local policy framework that are particularly relevant to the statutory and policy context for wind for the District Plan Review.

3.1 Resource Management Act 1991

3.1.1 Section 5 – Purpose and Principles

- (6) The purpose of the RMA is set out in Section 5. The purpose is to promote the sustainable management of natural and physical resources.
- (7) Under s5(2) of the Act, sustainable management means:

managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—

- (a) *sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) *safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- (c) *avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

- (8) The key connection of the Wind chapter with the purpose of the Act is in enabling people and communities to provide for their social, economic and cultural well-being and health and safety, particularly in relation to enabling built development, and avoiding, remedying, or mitigating adverse effects on the environment.

- (9) This includes the most important function of the Wind chapter – managing the potential impacts of buildings on the wind environment, including associated effects on comfort and safety.

3.1.2 Section 6 – Matters of National Importance

- (10) Section 6 of the RMA sets out matters of national importance that all persons exercising functions and powers under the Act shall *recognise and provide for* in achieving the purpose of the RMA. The relevant s6 matters for Wind are:

Section	Relevant Matter
6(h)	<p><i>the management of significant risks from natural hazards</i></p> <p>The RMA definition of natural hazards includes wind. Impacts on wind environments from built development can affect the natural hazard risk from wind.</p>

3.1.3 Section 7 – Other Matters

- (11) Section 7 of the RMA sets out other matters that all persons exercising functions and powers under it shall *have particular regard to* in achieving the purpose of the RMA. The relevant s7 matters for wind are:

Section	Relevant Matter
7(c)	<p><i>the maintenance and enhancement of amenity values</i></p> <p>Wind environments as altered by new or altered buildings have potential to adversely affect the amenity values including comfort that persons expect in public spaces.</p>
7(f)	<p><i>maintenance and enhancement of the quality of the environment</i></p> <p>The cumulative effects of new or altered buildings have potential to deteriorate wind environments over time.</p>

7(i)	<p><i>the effects of climate change</i></p> <p>Climate change may impact the frequency and intensity of weather extremes including wind gust speeds. The effect of new or altered buildings, particularly on safety and the deterioration of wind environments need to be considered in this context.</p>
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3.1.4 Section 8 – Treaty of Waitangi

- (12) Section 8 of the RMA requires Council to take into account the principles of the Treaty of Waitangi when exercising functions and powers under the Act.
- (13) Council has engaged with Mana Whenua of Lower Hutt as part of the District Plan Review, including with representatives of Taranaki Whānui ki te Upoko o te Ika (Port Nicholson Block Settlement Trust), Wellington Tenth Trust, Palmerston North Māori Reserve Trust, Te Rūnanganui o Te Āti Awa ki Te Upoko o Te Ika a Māui Incorporated and Te Rūnanga o Toa Rangatira Incorporated.
- (14) This engagement has demonstrated two key principles of the treaty, the first being the principle of partnership by, recognising and fostering mutual good faith with our existing iwi partnerships and continuing to provide the opportunities for tangata whenua to input meaningfully into the district plan review.
- (15) Secondly, the principle of active protection is another key aspect of the treaty principles demonstrated, as it seeks ways to deliver mixed and culturally dynamic communities in a sustainable way.

3.2 National Policy Statements

- (16) Section 75(3)(a) of the RMA requires district plans to give effect to any national policy statement.
- (17) The National Policy Statement on Urban Development 2020 (NPS-UD) is the only national policy statement that is relevant for wind.
- (18) The relevant objectives and policies of the NPS-UD are discussed below:

Reference	Comment
National Policy Statement on Urban Development 2020	<p>The NPS-UD directs Councils to enable well-functioning urban environments that provide for the social, economic and cultural wellbeing of people.</p> <p>While the NPS-UD does not directly address wind, it gives direction to enable a more compact urban form with taller buildings that are more likely to impact the wind environment (Objective 3, Policies 2, 3 and 4).</p> <p>The NPS-UD also includes direction on creating well-functioning urban environments, including accessibility by active transport, which can be impacted by wind conditions (Objective 1, Policy 1).</p>

3.3 New Zealand Coastal Policy Statement

(19) The New Zealand Coastal Policy Statement 2010 (NZCPS) sets out the objectives and policies in order to achieve the purpose of the RMA in relation to the coastal environment. Section s75(3)(b) of the RMA requires district plans to give effect to the NZCPS.

(20) The relevant objectives and policies of the NZCPS are discussed below:

Reference	Comment
New Zealand Coastal Policy Statement 2010	<p>The NZCPS provides policy direction to achieve the purpose of the RMA in relation to the Coastal Environment.</p> <p>The Wind chapter is concerned with managing wind effects on public spaces within urban environments. Some urban environments (Petone, Seaview and the Eastern Bays) are located within the Coastal Environment.</p>

	<p>While the NZCPS does not directly address wind it gives direction on effects on public use and enjoyment of public space in the coastal environment, and providing walking access to and along the coast, both of which can be impacted by wind (Objective 4, Policies 18 and 19).</p> <p>The NZCPS also gives direction on enabling and managing the effects of activities including, built development, in the coastal environment (Objective 6, Policies 4, 6).</p>
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3.4 National environmental standards

- (21) No national environmental standards are relevant for wind.

3.5 National Planning Standards

- (22) Section 75(3)(ba) requires district plans to give effect to national planning standards.
- (23) The National Planning Standards do not provide specific direction for wind-related provisions. However, under Standard 7 (the District-wide Matters Standard), any additional chapters to address matters on a district-wide basis must be included alphabetically under the *General district-wide* matters heading.

3.6 Regional Policy Statement for the Wellington Region

- (24) Section 75(3)(c) of the RMA requires district plans to give effect to regional policy statements.
- (25) The Regional Policy Statement for the Wellington Region ('the RPS') identifies the significant resource management issues for the region and outlines the policies and methods required to achieve the integrated sustainable management of the region's natural and physical resources.

- (26) The relevant objectives and policies of the RPS for Wind are discussed below:

Reference	Comment
Objective 19 Policy 51	Objective 19 and Policy 51 address natural hazard risk. Wind is within the RMA definition of natural hazard. Objective 19 seeks a reduction of risk and consequences to people, communities, their businesses, property and infrastructure from natural hazards and climate change. Policy 51 gives direction for these risks and consequences to be minimised, including when reviewing a district plan, and lists specific matters that particular regard is to be given to.
Objectives 22 and 22A Policies 30 and 31	These objectives and policies seek outcomes and give direction for a compact urban form and sufficient development capacity in the urban environment, including through intensification. There is increased risk of disruption to wind environments potentially leading to adverse effects on amenity and comfort in public spaces, as urban areas intensify.

3.6.1 Proposed RPS Change 1

- (27) Section 74(2)(a)(i) of the RMA requires territorial authorities, when preparing and changing their district plan, to have regard to any proposed regional policy statement.
- (28) On 19 August 2022 Greater Wellington Regional Council notified Proposed Change 1 to the Regional Policy Statement for the Wellington Region (Proposed RPS Change 1). As of the writing of this report, the Regional Council has notified its decisions on Proposed RPS Change 1, but these decisions are open to appeals.

- (29) Proposed RPS Change 1 includes changes to Objective 19, specifically that risks and consequences are *minimised*, rather than *reduced* as in the operative RPS. Changes are also proposed to Objective 22, however these and other changes are not relevant to the topic of wind.

3.7 Natural Resources Plan for the Wellington Region

- (30) Under section 75(4)(b) of the RMA, a district plan must not be inconsistent with a regional plan for any matter specified in section 30(1) of the RMA (which lists functions of regional councils under the Act)
- (31) Under section 30(1)(c)(iv), regional councils have the function of controlling the use of land for the purpose of the avoidance or mitigation of natural hazards.
- (32) The Natural Resources Plan for the Wellington Region includes an objective that natural hazard risk and the effects of climate change on people, the community, the environment and infrastructure and acceptable. There are no policies or rules in the Natural Resources Plan which particularly relate to managing the effects of built development on urban wind environments.

3.7.1 Proposed NRP Change 1

- (33) Under section 74(2)(a)(ii) of the RMA, when preparing and changing the District Plan the council is required to have regard to any proposed regional plans with regard to any matter of regional significance or for which the regional council has primary responsibility under Part 4 of the Act.
- (34) Greater Wellington Regional Council notified a proposed change to the Natural Resources Plan in October 2023 (Proposed NRP Change 1). However, no objectives, policies or rules in Proposed NRP Change 1 are relevant to wind.

3.8 Iwi management plans

- (35) Section 74(2A) requires territorial authorities, when preparing or changing a district plan, to take into account any relevant planning document recognised by an iwi authority and lodged with the territorial authority, to the extent that its content has a bearing on the resource management issues of the district.
- (36) However, no iwi management plans have been lodged with Hutt City Council.

3.9 Other plans, policies, and strategies

- (37) Section 74(2)(b)(i) of the RMA requires that when preparing or changing a District Plan, a territorial authority shall have regard to any management plans and strategies prepared under other Acts.
- (38) In addition, there are other Council, regional or national plans, policies and strategies that, while not directly prepared under a specific Act, should be considered as part of the District Plan Review as they set Council's intentions on some matters that need to be addressed through the District Plan Review.
- (39) The following plans, policies and strategies are relevant for Wind:
- Integrated Transport Strategy 2022 (the ITS) – Hutt City Council.
 - Reserves Strategic Directions 2016-2026 (the RSD) – Hutt City Council.
- (40) These plans, policies and strategies are discussed below:

Plan/Policy/Strategy	Comment
Integrated Transport Strategy 2022	The ITS outlines Council's vision and strategic direction for responding to Lower Hutt's growing transport challenges. It lays out an integrated approach to delivering land use planning, transport planning, investment and

	<p>encouraging behaviour change within Lower Hutt.</p> <p>The ITS sets seven focus areas. <i>Focus Area 2, Create people-focused, liveable streets around key transport hubs and local centres</i>, is relevant for wind</p> <p>This focus area connects the quality, pleasantness and safety of streets to the uptake of active and public transport modes. This is relevant to wind as these aspects of liveable streets can be impacted by impacts on the wind environment from built development.</p>
<p>Reserves Strategic Directions 2016-2026</p>	<p>The RSD identifies overarching key strategic directions and priorities, and the characteristics and landscape features of Lower Hutt as described in four distinct landscape identity areas, which is intended to inform the management and development of reserves land in Lower Hutt.</p> <p><i>Strategic Direction 1 – protection and enhancement of the reserve network.</i></p> <p>Priority 2 – reserves with facilities should be available within 400m of most houses in a suburb, particularly important where intensification is occurring, and to provide relief from built form.</p> <p>The protection and enhancement of urban public space and its ability to provide spaces of relief from the built form, is relevant to Wind</p>

	chapter provisions which seek to protect urban environment from wind effects.
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3.10 District plans of adjacent territorial authorities

- (41) Under section 74(2)(c) of the RMA, the Council is required to have regard to the extent to which the District Plan needs to be consistent with the plans or proposed plans of adjacent territorial authorities.
- (42) The key aspect of wind that is addressed by the proposed District Plan is the impact of the wind environment from built development in urban areas, including impacts on comfort and safety of people in outdoor areas. The areas near the boundary of Lower Hutt and the adjacent territorial authorities are largely undeveloped, rural and open space areas where urban development is unlikely to occur.

3.11 Other legislation or regulations

- (43) Other than the RMA, no other legislation or regulations are identified as being relevant to the Wind chapter.

4 Resource management issues

4.1 Introduction to resource management issues

- (44) Wind speeds increase with height above ground surface. Taller buildings are exposed to higher wind speeds at higher levels and can generate downwash of wind effects to the ground level. This effect is more pronounced the more that a building is incongruous to otherwise low-rise urban form. Other buildings, which are not necessarily tall, but are otherwise incongruous to existing urban form or located in a position which interrupts existing wind-flow, can also cause disruption of wind environments. Wind effects displaced by buildings can create unsafe or uncomfortable conditions in public spaces at street level.

4.1.1 Background of wind and the District Plan

- (45) When the District Plan was first made operative in 2003, detailed provisions were included in the chapter for the Central Commercial Activity Area to manage the effects on the safety of pedestrians from buildings over 12m in height. Taller building heights were also enabled in the Petone Commercial Activity Area (Area 2). However, this zone was identified as associated with “vehicle oriented retailing” and wind protection provisions for pedestrians were not included for this zone.
- (46) A plan change in 2011, refined the wind protection provisions in the Central Commercial to include effects on comfort and deterioration of wind environments, as well as reporting requirements. A 2014 plan change added similar wind assessment requirements for buildings over 12m in height in Petone Commercial Activity Area (Area 2), identified as a mixed use zone.

(47) Plan Change 56, which became operative 21 September 2023, updated the District Plan to address directions and requirements for urban intensification from the National Policy Statement for Urban Development 2020 and the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 (the Housing Supply Act). The plan change enabled larger buildings, and to manage associated effects on wind environments, the plan change introduced a Wind chapter to the District Plan, which was the first comprehensive suite of provisions addressing the effects of larger buildings on urban wind environments. The Wind chapter provisions include wind assessment and reporting requirements which are similar as those pre-existing, however which are applied more extensively across residential, commercial and business zones. Due to the recency of this plan change, the wind assessment provisions are relatively untested.

4.2 Evidence base

4.2.1 Existing approach of City of Lower Hutt District Plan

(48) Chapter 14M (Wind) includes the following objective:

Objective 14M 1.1

Within public places in Commercial Activity Areas, High Density Residential and Medium Density Residential Activity Areas, and other urban non-residential activity areas that enable buildings taller than 12 metres:

- a) *Wind conditions remain safe, and where possible, existing unsafe wind conditions are improved,*
- b) *In key commercial centre locations, wind conditions are comfortable for pedestrians, and*
- c) *The pedestrian wind environment is protected from gradual degradation over time.*

(49) This objective is implemented through policies and rules that:

- Encourage early consideration of wind effects at the early stages of building design.

- Require resource consent for new building, and some alterations or additions to buildings, which are over a specified height, and for proposals to remove existing off-site wind mitigation measures.
- Require that resource consent applications are supported by a wind report which demonstrates compliance with standards for safety, comfort in public spaces and deterioration of wind environments.

(50) Provisions for wind assessment remain in chapter 5A which require wind effects on public spaces be considered as assessment matters for buildings exceeding 12m in height in the Central Commercial Activity Area and located within an identified overlay.

(51) As part of the District Plan Review, the effectiveness, efficiency, usability and overall appropriateness of the operative provisions have been assessed, and the following issues have been identified:

- There is duplication of provisions in the Chapter 5A (Central Commercial Activity Area) and Chapter 14M (Wind).
- A restricted discretionary activity status may be excessive where an application has demonstrated compliance with the performance standards. For applications with a discretionary status, it is unclear what additional matters could be relevant beyond the restricted discretionary matters.
- The performance standard for comfort within public spaces, only applies to small number of sites abutting streets within Hutt Central. This was a carryover of pre-existing provisions in the Central Commercial Activity Area. It may be appropriate to be extended for the criteria to be extended to other public spaces outside the City Centre Zone.
- The provisions for managing effects on comfort and deterioration of wind environments are focused specifically on effects on pedestrians. It may be desirable to also manage these effects in relation to passive or recreation use of public spaces.

- The Chapter 14M provisions are relatively new and untested at the time of this report, and it is relatively unknown the extent to which the following may be issues:
 - Legibility of the provisions for plan users;
 - Suitability of thresholds triggering resource consent and requiring either a quantitative or qualitative wind assessment; and
 - Feasibility and costs associated with obtaining wind assessments.

4.2.2 Analysis of other District Plans

(52) Current practice has been considered in respect of this topic, with a review undertaken of the following District Plans:

- Proposed Wellington District Plan
- Proposed Porirua District Plan (decisions version)
- Auckland Unitary Plan
- Christchurch District Plan
- Proposed Dunedin District Plan

(53) The above District Plans were considered due to have been relatively recently reviewed, and because they include provisions which respond to issues of wind effects from built development. It is noted that Wellington and Porirua are the most comparable examples in relation to Lower Hutt in terms of size and wind conditions as well as recency of their respective District Plan reviews.

(54) Summary of key findings:

- It is not typical for District Plans to include a chapter or objectives and policies which specifically address issues of wind effects in public spaces.

- Wind provisions typically relate specifically to buildings within centre, commercial, business or special purpose zones, and are located in the chapters for those zones.
- Building height is often used as a threshold for requiring assessment of wind effects.
- Some district plans provide direction on assessment matters for considering wind effects. Where detailed direction is provided, it is typically related to pedestrian safety and comfort and preventing degradation of wind environments.
- The Proposed Wellington District Plan includes requirements that resource consent applications be supported by a quantitative or qualitative wind assessment. It is not otherwise typical for district plans to specify minimum information requirements such as wind reports for resource consent applications.

4.2.3 Advice from mana whenua

(55) Council has engaged with mana whenua on the district plan review through the Kāhui Mana Whenua engagement group. No specific issues have been raised with regard to the topic of wind. However, mana whenua have provided advice on the sites and areas that are of significance to them.

4.2.4 Stakeholder and community engagement

(56) Council has primarily engaged with the community and other stakeholders for the District Plan Review through two rounds of engagement:

- The *Shaping Your City* engagement (2020), on issues and options for the District Plan Review, and
- The *Draft District Plan* engagement (2023), on a full draft of the plan that had been developed through the District Plan Review.

(57) Main themes in this feedback were:

- Managing building heights to control wind tunnel effects

- That height thresholds for wind assessments should be tied to permitted height standard for each zone.

(58) Feedback on the topic of wind was also received during notification of Plan Change 56, and focused on:

- Height thresholds for assessment.
- Whether to manage effects on comfort as well as safety.
- Which spaces to provide protection for.
- Particular effects of tall buildings in coastal wind environments.

4.2.5 Technical information/advice commissioned

(59) A memorandum dated 26 May 2022, was commissioned from Nick Locke and Neil Jamieson (WSP) to inform Plan Change 56. The memorandum provided a review of the operative District plan (prior PC56) in comparison to the draft Wellington District Plan. Some key points from the memo include:

- Increases to building heights have potential to increase adverse wind conditions in built up areas, particularly in areas with predominantly low buildings. Buildings as small as 4-6 storeys can produce dangerous wind speeds.
- District plans from other cities can provide some indication of appropriate height thresholds for requiring wind assessment. However, it is important to compare to cities with a similar wind climate.
- Using a height threshold of lower than 12m is unlikely to be effective, as buildings below this height would be unlikely to cause problematic wind conditions.
- Qualitative wind assessments may cost between \$2,000 to \$5,000. Quantitative wind assessments (involving wind tunnels) may cost between \$20,000 and \$35,000.

- A major factor in the success of any set of wind rules is their implementation. The ease by which designers and developers can understand the rules, as well as the ease of interpretation and enforcement by consent planners, has a large bearing on their effectiveness.
- The Lower Hutt wind controls are relatively simple. However, they are open to wide interpretation and potentially varying outcomes.
- The best opportunities for improving the wind controls in a full plan review would be to clarify, or clearly define, some of the technical standards.
- The application of the wind controls to other areas in Lower Hutt where building heights are expected to increase significantly, or where particularly good wind conditions are desired, would also make sense.

4.3 Summary of issues analysis

(60) The following issues have been identified:

4.3.1 Effects of built development on wind environments

(61) Wind speeds increase with height above the ground surface. New buildings can divert wind from higher altitudes to ground level or otherwise disrupt existing wind flow in urban environments. These effects are more pronounced the more incongruous buildings are to the existing built form. Disruption to wind environments may come from a single building or from deterioration to the wind environment caused by the cumulative effects of multiple buildings over a span of time. The effects of buildings on wind flow are best addressed in the early stages of design due to the potential impact of the location and overall form of the building on wind environments. Major revisions later in the design process may be costly and time consuming, and simple additive features may be less effective in addressing wind effects.

4.3.2 Effects of wind in public spaces

- (62) Displacement or disruption of wind flow can create unsafe wind conditions at street level. The pedestrian experience can be negatively impacted by unsafe or uncomfortable wind conditions, thereby affecting accessibility by active transport. Unsafe or uncomfortable wind conditions can also reduce the amenity and attractiveness of public open space, including for passive or recreation use. These effects can negatively impact on well-functioning urban environments.

4.3.3 Increased building densities

- (63) Urban environments in Lower Hutt have traditionally been characterised by low-rise urban forms. Recent changes to the operative District Plan and the proposed District Plan provide for urban built form that is taller and larger in scale, and more dense than that previously provided for and established in Lower Hutt. This creates potential for new development to be incongruous to the established built form and disruptive to existing wind environments. As urban environments gradually become more intensively developed, there is a risk that safety and comfort within wind environments may gradually deteriorate.
- (64) As the density of built development and activities increase, so does the importance of accessibility by active transport in contributing to well-functioning urban environments, as well as demand for passive and recreation use of public spaces.

4.3.4 Wind assessment

- (65) Wind processes are dynamic and wind environments can be highly variable. As such, consideration of effects of built development on wind environments requires a bespoke approach which takes into account the specific context of the wind environment. This has potential to be costly for applicants.
- (66) Although more intensive built form is enabled by the provisions of the operative and proposed District Plan, Lower Hutt urban environments remain predominantly low-rise in form. Requiring wind assessments through the resource consent process provides an opportunity to

establish and record baseline information on urban environments which will enable cumulative effects of deterioration of wind environments to be managed.

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5 Scale and significance assessment

(67) In writing this evaluation report we must provide a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects anticipated from the implementation of the proposal.

(68) In assessing that scale and significance we have had regard to:

Matters of national importance	The impacts of built development on urban wind environments are relevant to managing significant risks from natural hazards.
Other matters	Other matters of relevance to this topic include the maintenance and enhancement of amenity values and the quality of the environment, and the effects of climate change.
Degree of change from the operative plan	Low - the proposed provisions are largely consistent with those in the operative District Plan.
Geographic scale of effects	The provisions are specific to urban zones in Lower Hutt. The scale of effects for any activity assessed under these provisions will be limited to the surrounding wind environment.
Number of people affected	Moderate – will include any persons in public spaces of urban wind environments potentially impacted by built development

Duration of effects	High – the impacts of buildings on wind environments are likely to be locked in for a long period of time.
Economic impacts	The proposed Wind chapter would impose additional costs on development where new buildings require resource consent, including costs associated with evaluating impacts on wind, design costs, and potentially additional construction costs.
Social and cultural impacts	Low – effects on active transport and public spaces can impact on social cohesiveness within communities.
Environmental impacts	Low – disruption of wind environments may impact on local ecosystems.
Health and safety impacts	Moderate – can have impacts on health of safety of persons in public spaces.
Degree of interest from mana whenua	Mana Whenua have not expressed a specific interest in this part of the District Plan Review.
Degree of interest from the public	Low – provisions are limited in their application, and when applied would be of interest particularly of those in the immediate surrounds of the activity.
Degree of risk or uncertainty	Low -there is high level of consistency of the proposed provisions with the operative Lower Hutt District Plan and proposed Wellington District Plan.

(69) Accordingly, the overall scale and significance of the wind topic of the District Plan Review are **low**.

6 Proposed District Plan objectives and provisions

6.1 Overview of proposed provisions

(70) The proposed provisions are set out in detail in the proposed District Plan, which should be read in conjunction with this evaluation report.

(71) The chapter has one objective:

WIND-O1 – Wind in urban environments:

Buildings and structures in urban environments are managed so that within public spaces:

- 1. Wind conditions remain safe, and where possible, existing unsafe wind conditions are improved,*
- 2. Wind conditions are comfortable in high-use public spaces, including pedestrian spaces and open space areas; and*
- 3. The pedestrian wind environment is protected from gradual degradation over time.*

(72) The objective is supported by three policies:

- ***WIND-P1: Early consideration in wind design***
- ***WIND-P2: Managing effects***
- ***WIND-P3: Retaining existing wind mitigation measures***

(73) The supporting rule framework comprises two rules:

- ***WIND-R1*** applies to demolition, alteration and additions to existing buildings and structures in urban zones. It:
 - Controls the removal of existing wind mitigation measures.

- Controls additions or extensions to existing buildings which have potential to disrupt wind environments.
- **WIND-R2** applies to new buildings and structures in urban zones. Wind assessment is required if a height threshold is exceeded.

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7 Evaluation of objectives

- (74) This section is the evaluation of objectives, as required through s32(1)(a) of the RMA.
- (75) An objective is a statement of what is to be achieved through the resolution of a particular resource management issue. A district plan objective should set out a desired end state to be achieved through the implementation of policies and rules.
- (76) Under s75(1)(a) of the Resource Management Act, a district plan must state the objectives for the district.
- (77) Under s32(1)(a) of the Resource Management Act, an evaluation report required under the Act must examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of the RMA. The purpose of the RMA, as stated in s5(1) of the Act, is to promote the sustainable management of natural and physical resources.

7.1 Evaluation of WIND-01: Wind in urban environment

WIND-01: Wind in urban environments:

Buildings and structures in urban environments are managed so that within public spaces:

- 1. Wind conditions remain safe, and where possible, existing unsafe wind conditions are improved,*
- 2. Wind conditions are comfortable in high-use public spaces, including pedestrian spaces and open space areas; and*
- 3. The pedestrian wind environment is protected from gradual degradation over time.*

Relevance

- The first part of the objective frames the outcomes identified in sub-clauses 1 to 3 of the objective as being achieved through the management of buildings and structures. This responds to the core issue described in issue 4.3.1, being the potential disruption of wind environments caused by buildings and structures.
- Sub-clauses 1 and 2 of the objective respond to the potential adverse effects on pedestrian safety and comfort which may occur in disrupted wind environments, while sub-clause 3 addresses the potential degradation of wind environments from cumulative effects.

Usefulness

- Clearly states the outcomes sought for public spaces within urban environments.
- Clearly relates the achievement of the outcomes as being through managing buildings and structures, which is useful in defining the scope of provisions in the chapter.
- Supports the Council function of controlling the actual and potential effects of use and development (a function under s31(1)(b) of the RMA). In this case, the effects of buildings and structures on wind environments.

Reasonableness and Achievability

- The outcomes sought in the objective are reasonable as it seeks to manage wind effects on public spaces as urban environments intensify, to ensure these environments will continue to be well-functioning.
- It is reasonable for the objective to identify that the outcomes will be achieved through managing buildings and structures due to their potential to disrupt wind environments.
- It is also achievable as managing buildings and structures, including through design and location, are matters which can be effectively managed through the District Plan. The word “managing” in relation to buildings and structures leaves room for suitable design response to achieve the outcomes expressed in the objective.
- It is more likely that larger buildings and structures will have greater potential to disrupt wind environments. The cost of considering wind

effects will likely be marginal in the context of the cost of larger building projects.

- The objective can be achieved without imposing a significant regulatory burden on applicants (although the policies and rules that implement the objective would have a greater influence on this).

Alternatives

- **Status quo**

The objective within the Wind chapter of the operative District Plan is as follows:

Objective 14M 1.1 – Within public places in Commercial Activity Areas, High Density Residential and Medium Density Residential Activity Areas, and other urban non-residential activity areas that enable buildings taller than 12 metres:

- a. Wind conditions remain safe, and where possible, existing unsafe wind conditions are improved.*
- b. In key commercial centre locations, wind conditions are comfortable for pedestrians; and*
- c. The pedestrian wind environment is protected from gradual degradation over time.*

The proposed objective is generally consistent with the status quo. Similarly to the proposed objective, the first part of the objective in the operative District Plan defines the scope wherein the outcomes expressed in the sub-clauses are proposed to be achieved. In the status quo this is limited to commercial zones, high density and medium density residential zones and other urban non-residential areas. Sub-clause (b) seeks comfortable wind conditions for pedestrians in key commercial centres.

The status quo is not proposed, as under the proposed District Plan buildings and structures which are of a scale to potentially disrupt wind environments are more broadly enabled within urban environments, and this should be reflected in the first part of the objective. The proposed changes to sub-clause (b) of the objective recognise that comfort within public spaces is a relevant consideration not only for pedestrians but also for passive or

recreation use of outdoor spaces, and that high-use public spaces may be located outside of commercial centres.

- **No objective for wind**

This alternative would comprise of not having a Wind chapter with a specific objective addressing wind effects. Instead, any rules and standards controlling wind effects would be located within zone chapters, potentially supporting more generic objectives and policies pertaining to public amenity. The rationale for this approach would be to target the provisions within those zones where disruption to wind environments would be most expected.

This alternative is not proposed as the issues of wind effects in public spaces is broader than issues of amenity or character and not likely to be sufficiently captured in the objectives of the zone chapters. The fundamental issue of wind effects in public spaces is the same across urban environments and justifies a consistent approach in a Wind chapter and a specific objective for wind. To the extent that differences between zones may need to be accommodated, this can be accommodated within a Wind chapter.

Summary

Objective WIND-O1 sets clear outcomes which are sought to be achieved for wind environments in public spaces, and which will provide for well-functioning urban environments. The outcomes are sought to be achieved through managing building and structures, due to their potential to disrupt urban wind environments. The outcomes expressed in the objective, as well as the approach of managing building and structures, are not overly prescriptive and can be achieved without imposing a significant regulatory burden on property owners and developers.

8 Evaluation of Policies and Rules/Methods

- (78) Policies and rules implement, or give effect to, the objectives of a plan.
- (79) Policies of a district plan are the course of action to achieve or implement the plan's objective (i.e. the path to be followed to achieve a certain, specified, environmental outcome). Rules of a district plan implement the plan's policies, and have the force and effect of a regulation.
- (80) Under s32(1)(b) of the Resource Management Act, an evaluation report required under the Act must examine whether the provisions in the proposal are the most appropriate way to achieve the objectives by—
- (i) *identifying other reasonably practicable options for achieving the objectives; and*
 - (ii) *assessing the efficiency and effectiveness of the provisions in achieving the objectives; and*
 - (iii) *summarising the reasons for deciding on the provisions.*
- (81) Under s32(2) of the Resource Management Act, the assessment of the efficiency and effectiveness of the provisions must:
- (a) *identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—*
 - (i) *economic growth that are anticipated to be provided or reduced; and*
 - (ii) *employment that are anticipated to be provided or reduced; and*
 - (b) *if practicable, quantify the benefits and costs referred to in paragraph (a); and*

- (c) *assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.*

Quantification of benefits and costs

- (82) Specific quantification of all benefits and costs associated with the Wind chapter of the proposed District Plan is not practicable given the wide range of buildings that the chapter may apply to and the wide range of locations, both of which would impact the scale of benefits and costs. In general, a qualitative assessment of costs and benefits associated with the proposed District Plan is considered sufficient, and this is provided for in the below evaluation of policies, rules and other methods.

Risk of acting / not acting if information is uncertain or insufficient

- (83) Although the proposed provisions have a high level of consistency with those in the operative District Plan, there is a degree of uncertainty in that the operative provisions are largely untested. However, particularly with consideration to the example of Wellington city, it is generally well understood that large buildings can disrupt wind environments, and that wind processes are dynamic and highly variable by location. With Plan Change 56 and the proposed District Plan there is an increase to the scale and density of built development enabled by the plan, which increases the risk of disruption to wind environments. To the extent that information is uncertain, there is a risk that not acting will result in effects of wind in public spaces will not be addressed, and that information of the effects of buildings on wind environments will not be recorded. However, particularly with reference to the evidence base identified in section 4.2 of this report, there is sufficient information on which to base the proposed provisions.

8.1 Evaluation of provisions: WIND-P1, WIND-P2, WIND-P3 and WIND-R1 and WIND-R2

- (84) Policies WIND-P1, WIND-P2 and WIND-P3 and rules WIND-R1 and WIND-R2 collectively give effect to objective WIND-O1.
- (85) **Policy WIND-P1 (Early consideration in wind design)** recognises the importance of the overall form and location of buildings on wind environments, and that additive features later in the design process may be less effective in managing effects on wind environments. This policy is not directly given effect to by the rules and standards. However, the policy is intended to guide applicants when designing developments as well as Council officers when providing pre-application advice.
- (86) **Policy WIND-P2 (Managing effects)** requires that new or altered larger buildings be designed to meet performance standards. **Rules WIND-R1 (Demolition, alteration and additions)** and **WIND-R2 (New buildings and structures)** identify height thresholds where, if exceeded, resource consent is required. Where resource consent is required, assessment is made against three performance standards for safety (**WIND-S1**), deterioration of wind environments (**WIND-S2**) and comfort (**WIND-S3**). If an application can demonstrate compliance with these standards, the application is a controlled activity. Otherwise, it is a restricted discretionary activity.
- (87) **Policy WIND-P3 (Retaining existing wind mitigation measures)** recognises that removal of existing wind mitigation measures can adversely impact wind environments. This policy is supported by rule **WIND-R1**, which requires resource consent as a restricted discretionary activity if any existing off-site wind mitigation measures which are required as a resource consent are removed. The reason for this rule is that conditions of a resource consent cannot prevent removal of mitigation measures which are not located on the site of the consented activity or structure.

- (88) Where resource consent is required under rules WIND-R1 and WIND-R2, minimum information requirements are specified for a wind assessment prepared by a suitably qualified person. For buildings generally over 22m, a quantitative (wind tunnel) assessment is required. Otherwise, a qualitative (desktop) assessment is required.

WIND-P1 Early consideration in wind design
WIND-P2 Managing effects
WIND-P3 Retaining existing wind mitigation effects
WIND-R1 Demolition, alteration, and additions to existing buildings and structures
WIND-R2 New buildings and structures

Why these provisions are included in the proposed District Plan

These provisions ensure that larger buildings in urban environments are suitably designed to manage their effects on wind in public spaces, thereby implementing objective WIND-O1.

Efficiency and effectiveness

Benefits

- Provides for the health, safety and well-being for persons and communities by ensuring active transport networks and other public spaces in urban environments are safe and comfortable to use.
- Provides for the function and attractiveness of active transport networks. Accessibility by active transport networks, particularly within intensified areas, supports economic activity and well-functioning urban environments.
- Safe and comfortable public spaces, particularly within intensified environments supports social cohesiveness.
- The inclusion of height thresholds and performance standards provides clarity to applicants and designers and a degree of certainty to the consenting process.

Costs

- Wind effects which are within the limits of, or not otherwise regulated by the performance standards, will continue to be enabled and may potentially have impacts on public spaces in urban environments.
- There will be a cost to applicants to provide wind assessment, especially where a quantitative (wind tunnel) assessment is required.
- The height thresholds which trigger resource consent, or a quantitative rather than qualitative wind assessment, may disincentivise some typologies of intensification in urban environments.

Overall assessment

The provisions are effective in that controlling the wind effects in public spaces of buildings and structures with reference to performance criteria for safety, comfort and deterioration of the wind environment, directly and comprehensively addresses the scope and outcomes expressed in the objective.

The use of height thresholds to determine whether consent is required, and whether wind assessment should be qualitative or quantitative, helps to ensure consenting and information requirements are targeted to those larger developments more likely to cause disruption of wind environments.

The incorporation of performance standards provides certainty to applicants of consenting process and outcomes if designing their developments to conform to these standards.

Reasonably practicable alternatives

- **Status quo**

The proposed provisions are generally consistent with those in the operative District Plan. In the operative District Plan, resource consent requirements for new or altered buildings are triggered through exceedance of height thresholds, and then assessed against performance standards for safety, comfort and deterioration of wind environments. Unlike the proposed provisions, the operative provisions include a restricted discretionary activity status for activities requiring consent which conform to the performance standards, with a discretionary activity status triggered for non-conformance to the performance standards.

This approach is not proposed as, in the circumstance that a development can be shown to conform to the performance standards, then the adverse effects on wind environments can be considered to be tolerable with no further assessment of effects necessary. The controlled activity status in the proposed provisions, provides a mechanism to ensure that conformance to performance standards can be demonstrated, to record information on the wind environment (which will assist in monitoring cumulative effects), and to ensure any necessary mitigations which are recommended in the wind assessment are implemented.

Where conformance to the performance standards is not achieved, a restricted discretionary activity status is appropriate which addresses the focus of the chapter on the wind effects of buildings and structures in urban public spaces. A discretionary activity status, which broadens the assessment beyond these matters is not necessary.

- **Height thresholds**

This alternative is based on matching the height thresholds which trigger wind assessment to the height standards in the respective zone standards (where such standards are proposed).

This alternative is not proposed as the height standards in the respective zone chapter have been informed by the amenity, character and urban design considerations which are particular to each zone, rather than potential wind effects.

- **No quantitative assessment requirement**

This alternative is to only require qualitative (desktop) assessment, where resource consent under these provisions is required, and not require quantitative (wind tunnel) assessment. The rationale for this alternative would be to simplify consenting processes and reduce costs for applicants.

The alternative is not proposed as wind environments are highly dynamic and variable. Wind tunnel testing provides for more accurate assessment of likely impacts on wind conditions. Although there is an additional cost for wind tunnel testing, the requirement for quantitative testing is only triggered for taller buildings (more than 22m in height) which are more likely to disrupt wind environments. Wind tunnel assessments where provided, will support establishing robust information about wind environments which will inform wind assessments (both qualitative and quantitative) for future developments and will support monitoring of cumulative effects.

9 Summary

(89) This report, including the evaluation, has been prepared to set the context for the Wind chapter of the proposed District Plan. The evaluation has been undertaken in accordance with section 32 of the RMA in order to identify the need, benefits and costs and the appropriateness of the proposed chapter, having regard to its effectiveness and efficiency relative to other means in achieving the purpose of the RMA. The evaluation demonstrates that this proposal is the most appropriate option as it:

- Is consistent with the requirements of the National Planning Standards
- Ensures the wind effects of larger buildings on public spaces in urban environments are considered.
- Manages the effects on safety, comfort and deterioration of wind environments with reference to clear performance standards.
- Through requiring wind assessments, ensures that information will be recorded on urban wind environments, providing for monitoring of cumulative effects.