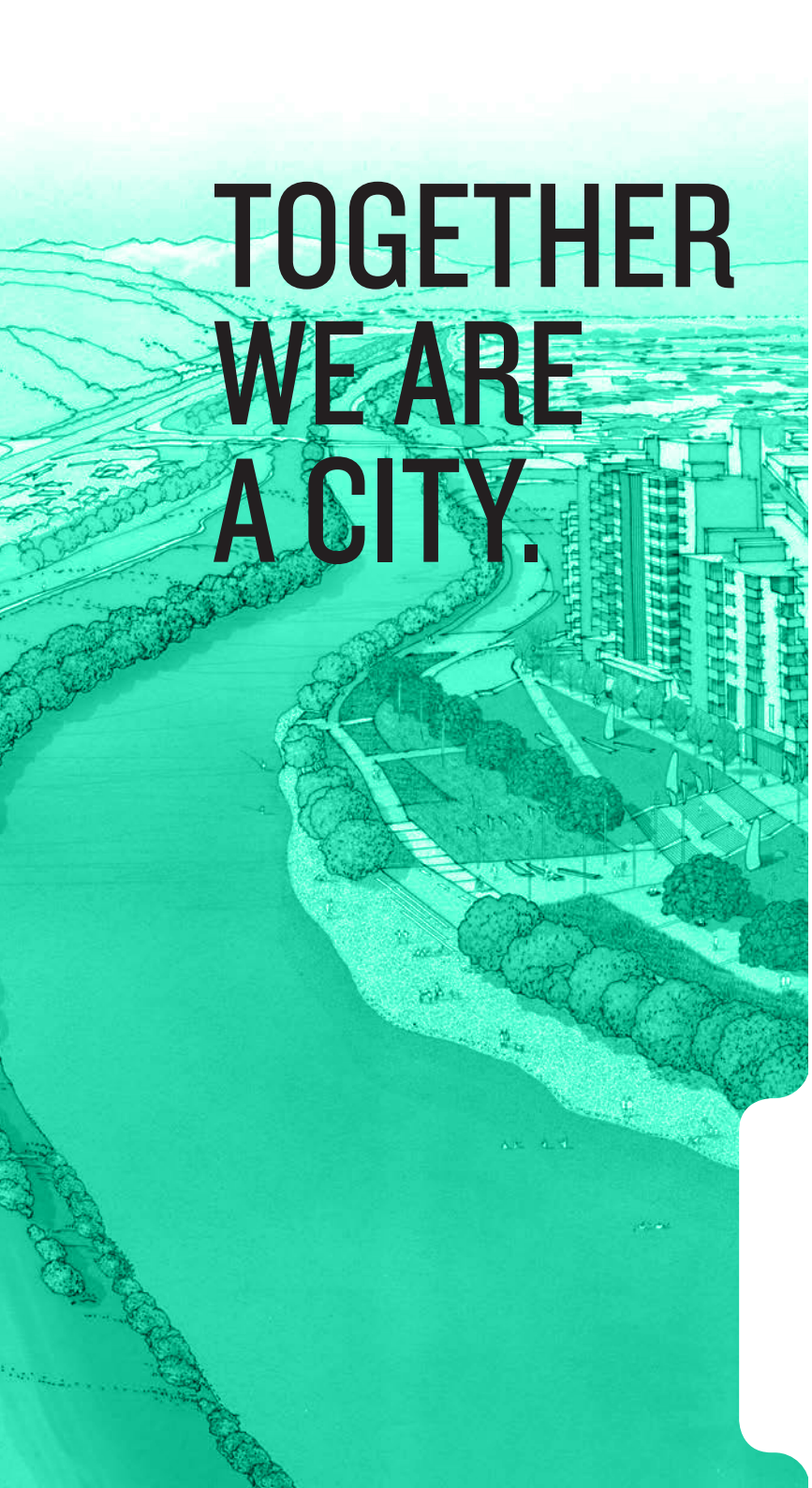
2015–2045

ENVIRONMENTAL SUSTAINABILITY

HUTT CITY
TE AWA KAIRANGI



ENVIRONMENTAL SUSTAINABILITY STRATEGY 2015–2045

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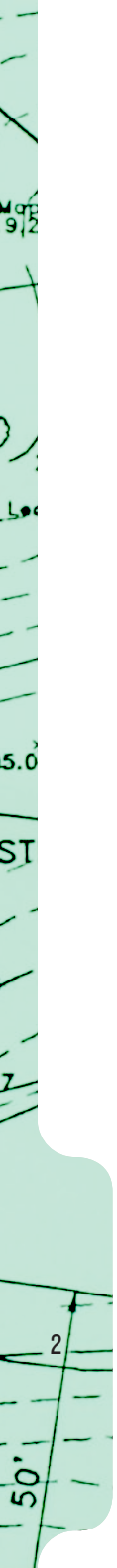


FOREWORD

It is my pleasure to be launching another pivotal strategy to move Hutt City forward – the 'Environmental Sustainability Strategy 2015-2045'.

Another step towards building a city that offers exceptional opportunity for residents, prospective residents and visitors alike.

Our city's vision was clearly laid out in our overarching document that was published earlier this year – the 'Integrated Vision for Hutt City – making our city a great place to live, work and play'.

That vision clearly defined the incredible opportunities we have across our whole city, the strengths we have to build on, the issues we face and what we really want to be. And that is, 'a great place to live, work and play'. I believe we can be that city. Opportunity is ripe as we have an established and solid foundation to work from.

However, it is crucial we make sure we have robust plans in place to achieve that vision. Hence, the development of the four supporting strategies.

First off the blocks, earlier this year, was the 'Urban Growth Strategy', addressing the 'built' aspects of the city – how we grow and develop – mainly to meet housing, roading and business needs.

Council is currently releasing the next two. The 'Leisure and Wellbeing' strategy addresses the needs of our people to build their wellbeing, and provide a city with wonderful leisure opportunities. Now I present this document, the 'Environmental Sustainability Strategy'. In a short time, these will be complemented by the 'Infrastructure Strategy'.

Together, these strategies will ensure we've covered all we need to do to achieve our vision.

Environmental Sustainability

'Environmental Sustainability' presents a direction for Council to lead the city to ensure our natural environment is protected, enhanced or repaired, thereby ensuring the city is in a sound state for both current and future generations.

We have, in the past five years, made significant gains with improving our environment. Under the 'Environmental Sustainability Strategy 2009-2014', we have seen improvement in river water quality, reduction in waste to landfill, increased recycling, expansion of community and business initiatives such as eco-fashion, the Earthlink store for pre-loved goods, the Silver Lining initiative for commercial waste reduction, the Green Gardener programme that offers free home advice on organic vegetable gardening, composting and how to increase biodiversity and water efficiency in the garden, and more.

Hutt City has met its own energy reduction targets, developed a fleet vehicle policy, a workplace travel plan, participated in development of the regional Waste Minimisation Plan, and considered the impact of sea level rise on coastal areas of the city.

However, we must keep well on top of our rapidly changing environmental challenges, including pollution, climate change, exposure to risks and hazards, and loss of critical ecosystem services such as seed dispersal, pollination or water purification.

If we reflect on our natural history and the environmental changes since human settlement here, we can see what we've lost, but moreover, what may be possible if we have the vision and will to recreate it.

For example, native birds are returning to our city which is wonderful to see and hear. We need to consider what else we aspire to – perhaps a revival of summer swimming in the river, or allowing a return of larger areas of native bush to the valley floor.

Our dependence on the environment is fundamental to so many aspects of our lives, and its proper care is essential if the city and our communities are to prosper.

Our dependence on the environment is fundamental to so many aspects of our lives, and its proper care is essential if the city and our communities are to prosper.

This strategy includes the ideas and aspirations that were voiced during the development of the Integrated Vision and during public consultation on the environment, and we are confident the direction Hutt City is moving in will be one that is well supported and achievable.

The picture of our city in the future is one where the environment is protected and enhanced, where risks are recognised and quickly responded to, where people co-exist with their natural environment in such a way that lives are truly enhanced.

I look forward to seeing innovations and positive moves over future years that will enable this strategy, and indeed our environment, to live, grow and flourish.

Ray Wallace
Mayor – Lower Hutt
1 December 2014

INTRODUCTION AND BACKGROUND

INTRODUCTION AND BACKGROUND

"Many natural systems are so affected by humans that they are starting to limit the quality of life, and if left unchecked will severely degrade wellbeing." ROYAL SOCIETY OF NEW ZEALAND, 2014

The 'Environmental Sustainability Strategy 2015-2045' takes a long-term view of the environment. In this strategy we look at the issues, risks and opportunities we face in regard to our environment, as well as addressing potential issues and change. We must develop appropriate responses for all of these factors.

This Strategy is designed to guide decision-making for Council, and outlines an increased focus on good environmental management and care, including:

- positioning Hutt City Council as a leader in environmental best practice within the community
- enhancing engagement and collaboration on environmental priorities with communities and stakeholders and other local authorities who are grappling with similar issues
- working in partnership with local businesses and organisations
- managing our own role to control and respond to pollution, waste disposal activities; water, storm-water and sewage; transport and urban development; biodiversity and ecology; and open space and wellbeing.
- Ensuring consistency between this strategy and key regional strategies including the Regional Policy Statement 2013 (RPS), the draft Natural Resources Plan and the Regional Land Transport Strategy (RLTS), as well as to wider central government policy, such as the Coastal Policy Statement.

The 'Environmental Sustainability Strategy' sits alongside and complements Council's three other key strategies – the 'Leisure and Wellbeing', 'Urban Growth', and 'Infrastructure' strategies, all of which provide guidance to achieve the 'Integrated Vision' which is the overarching document that defines the future for Hutt City. Particularly important are the synergies between strategies in areas such as transport, urban design, land-use, wellbeing, recreation, open-space, the natural environment, infrastructure, and risk management.

Following on from this Strategy, implementation plans will be developed which will include specific actions and KPIs. Council will need to implement these to ensure that measurable and significant environmental improvements occur at a corporate level, and across the city. It is proposed that this Strategy be reviewed within five years of publication.

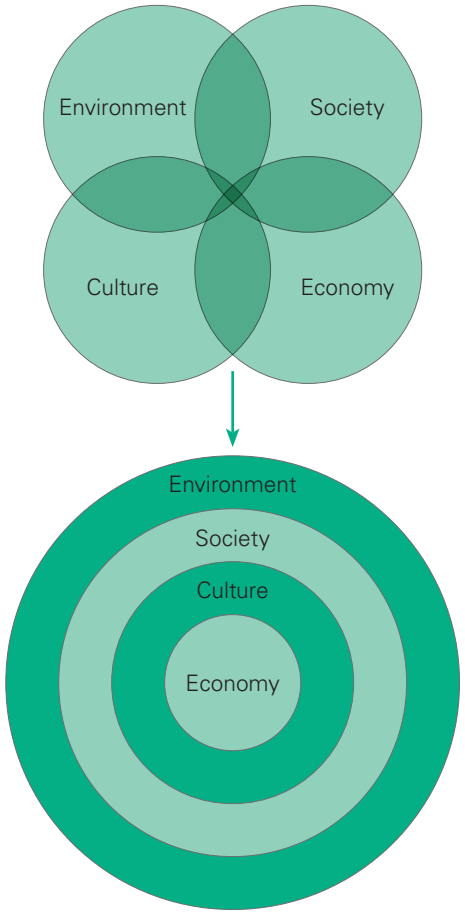
Rethinking our relationship with the environment

By way of important background information, we need to consider how we view our environment at present. We need to understand that our environment is in decline. It is facing some considerable challenges and is a major concern for the community.

It is clear that as a community and a nation, we are not placing enough emphasis on the environment in our plans, strategies or activities. For the most part, the environment-related activity that we are undertaking is not at a scale sufficient to avoid or even reduce some of the major environmental issues that we face. We will aim to meet these challenges head on and embrace a 'no regrets' approach – where we ensure that activities can be successful regardless of how the future plays out.

A long-held view of the environment is that it sits at the same level as economic, social and cultural values (see following diagram). In fact these are more accurately seen as being nested within one-another, with each being dependent on the other – and all being dependent on the environment. The emphasis should also shift from trying to fit the environment around us, to us fitting within our environment.

This strategy takes a long-term view of the environment, looking at the issues, risks and opportunities we face as well as addressing potential issues and change. We must develop appropriate responses for all of these factors.



This Strategy incorporates the concept of sustainability – *"meeting the needs of today without adversely affecting the needs of the future".* Becoming more sustainable means using less non-renewable resources, reducing waste and energy use, and limiting environmental damage. On this basis we should seek to develop and deliver on a set of agreed sustainability targets for the city.

However, to be truly sustainable involves putting an end to the use of non-renewable resources and depleting the environment, ecosystems and natural resources. This level of sustainability would require a transformational change, and with this strategy, Hutt City aims to commence that process of change. Like any change, this will be uncomfortable for some and will involve being able to think outside current limits, systems, policies, regulations and structures.

Social connectivity and sustainability are intrinsically linked – factors such as neighbourliness, people feeling valued and respected, and a sense of community are crucial aspects of wider environmental sustainability. Population changes, including growth or decline, and demographic change (such as an aging population) also need to be factored in to our approach in responding to environmental issues.

Poorly designed or maintained cities are not efficient, waste energy and resources encroach on the natural environment and are more likely to create pollution. Good cities are fit for purpose, prosperous, have a high quality of life, provide many choices, are efficient, minimise their impact on the natural environment, and strive for sustainability.

Hutt City has existing strengths with a wealth of natural features – from rivers and hills, to beaches and the sea. These attributes could be further developed and built on with a strong local direction, identity and branding – for example we could position ourselves as a 'Green city' or the 'Garden city'.

The Government's Natural Resources Sector group has recently established a number of underpinning principles that will assist us to achieve our vision and goals. These include:

- recognising that resources, ecosystems and the environment are not infinite
- factoring these limits into our decision-making, so that the value of the environment is calculated appropriately
- seeking opportunities to grow both environment and economy
- understanding that existing concepts of economic growth will come under increasing pressure as resources decline.

We will use these principles and ensure their inclusion within this strategy.

Hutt City and its environment

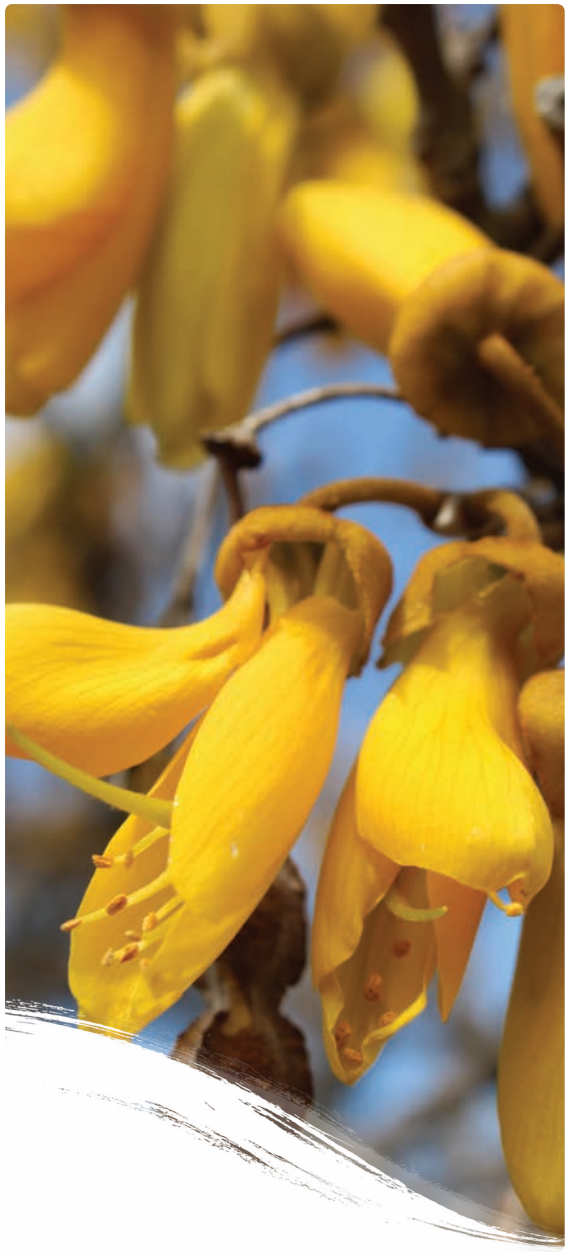
Defined by our coast, harbour, and the iconic Hutt River valley nestled between converging hills to the west and east, Hutt City has a land area of 377km^2 (or around 38,000 hectares) with a generous quantity and range of public open space and reserves (around 20,000 hectares).

The 2013 population was estimated as 102,900 people, and Statistics NZ predicts this population will be subject to slight decline over the next 30 years. However, Council's 'Urban Growth Strategy 2012-2032' sets a target for population growth that would ensure that at least 110,000 people live in the city by 2032. Associated with a slow growing population is the pattern of an ageing population which implies changes to the economy and people's relationship to their environment. The Council recognises the important role that urban design plays in ensuring that our built environment is suitable for all, including responding to the needs of an ageing population and developing an 'age-friendly city'.

Of course Hutt City exists within a broader context – international, national, regional and local levels – right down to the community and individuals, and the environment is central to them all. On all these levels, there is a need to ensure that groups and individuals are working toward joint and agreed outcomes – all pulling in the same direction.

Hence, the criticality of this plan. Understanding the breadth of our environment and recognising the need to engage to achieve results is crucial to moving forward.

SETTING OUR DIRECTION



SETTING OUR DIRECTION

Our vision "A thriving environment, now and into the future"

A thriving environment is defined as one where ecosystems are cared for, managed and enhanced, and people have access to and enjoy their surroundings. Quality of life is upheld for today and for future generations with easy access to parks, reserves or conservation areas, clean air, drinking water, rivers, beaches, parks, nature areas and urban areas. It is a place where our activities have a minimal impact on the environment, or where opportunities to reduce or eliminate negative effects are pursued with vigour.

Concepts of *mauri* and *kaitiakitanga* are central to this vision. Māori recognise that people belong to the land, and *kaitiakitanga* concerns environmental management, guardianship, care, and wise management with the aims of protecting *mauri* (or 'life-force') and passing the environment to future generations in a state which is as good as, or better than the current state. Of particular significance to Māori is environmental change, and particularly the possible effects on sites of high significance such as *pā, urupā, marae, kāinga*, as well as coastal land and sites, water quality and quantity.

These concepts also relate to our responsibilities under the Resource Management Act (RMA) and Local Government Act (LGA). These acts require councils to take into account the relationship of Māori with their environment, and to embrace the concept of sustainable management, which is closely aligned with that of *kaitiakitanga*.

All of these factors require us to participate in early and meaningful engagement on environmental issues in our partnership with Māori. We must also build these world-views and approaches into the way we deliver our work.

OUR GOALS

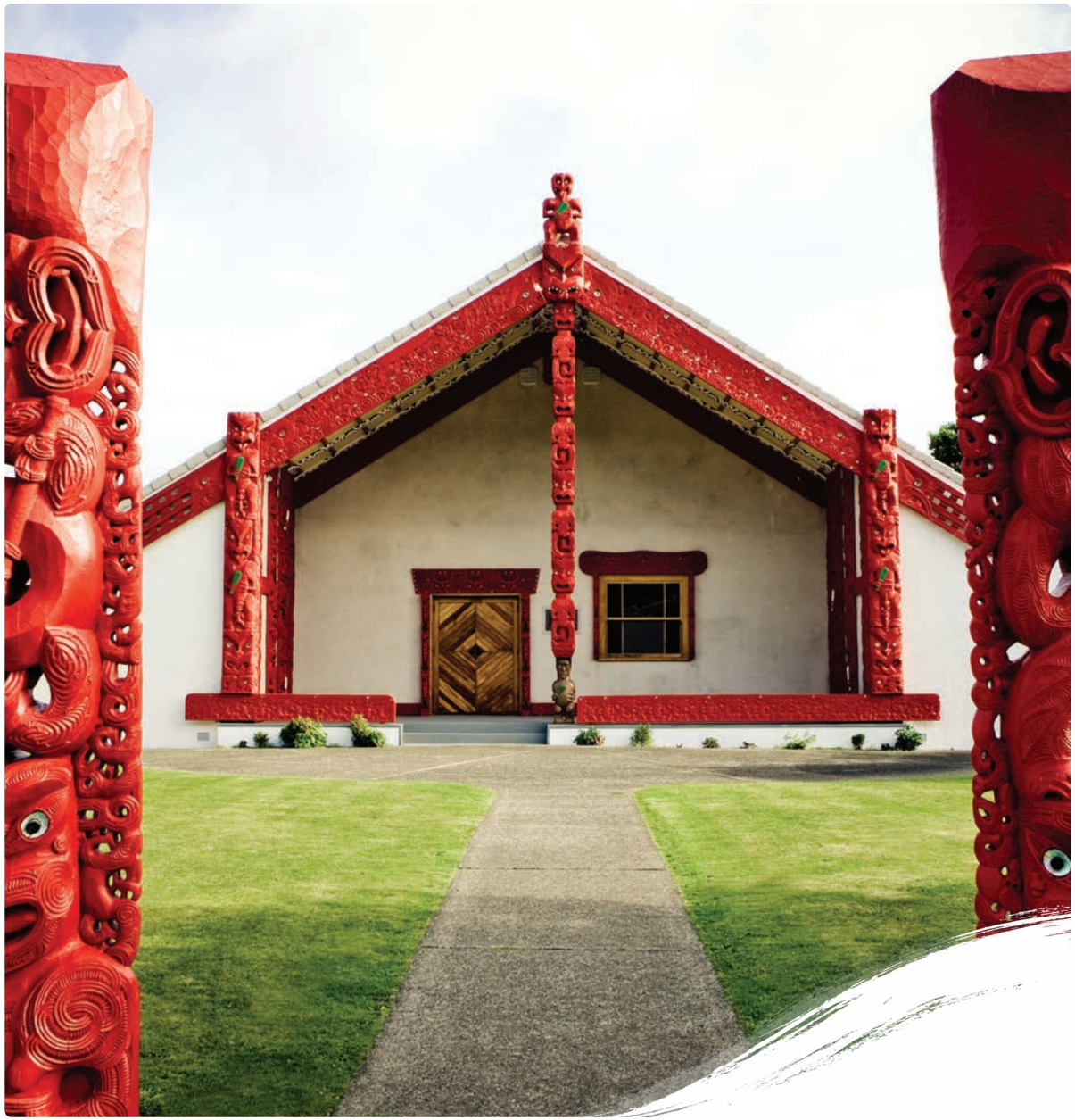
Leadership + Protection + Enhancement =
A thriving environment, now and into the future

Underpinning our vision are three high-level, aspirational goals. These goals aim to address key aspects of our environment within 30-50 years' time. They paint a picture of what our city may be like over those future time periods. To realise our vision, it is useful to consider how we best meet our essential needs and those of the environment – first by coping, then by fixing, then by improving, and finally, to thriving. Or putting it another way, shifting from predominantly reactive management, to being proactive and becoming better than we thought possible. To do so we need to achieve the following goals.

GOAL	KEY CONCEPTS	WHAT DOES SUCCESS LOOK LIKE?	TIMEFRAME
Council demonstrates leadership in environmental stewardship and sustainability	**Leadership** Council will take on increased responsibility to address issues	Council embraces low-impact urban design approaches. Council plays its part in reducing energy use in our transport, buildings and services. Council manages waste activities to best practice to maximise recycling and diversion from landfill. Council develops partnerships with key organisations including business, community, central government and local research organisations. Residents are confident that Council is taking a leadership role.	Short-term/ immediate
The city embraces environmental protection and community resilience	**Protection** The city gains from addressing environmental decline – with Council acting in a facilitative role	Resources are used efficiently and there is minimal waste and pollution. The health of our harbour is ensured by protecting our waterways from contaminants and maintaining and enhancing their water levels. We have reliable and high quality water supply requiring minimal treatment. Environmental awareness is heightened, and results in communities' desire and commitment to respond. The city applies a risk and resilience lens over all that we do. Our level of exposure to natural hazards, resource depletion, economic shocks, and other slow-onset or event-based change is continually reduced. We understand and prepare for the effects of climate change on city development, risk and vulnerability, Council activities and asset planning. Residents are excited, positive and proud to be living in an environmentally progressive city.	Medium-term – but important to start now
The city continuously adapts and enhances its environment	**Enhancement** The city transforms from damaging to actively improving the environment – with Council one participant of many within the community	Biodiversity corridors and green spaces which support native plants and birds connect large and important habitats. Safe walkways and cycleways (for both recreational and commuting purposes) exist throughout the valley. Development is enhanced around key transport and community hubs. We create a highly desirable city that prospers within its environment without exploiting or degrading it. The city has a low carbon footprint – through energy efficiency, promotion of walking, cycling and public transport, landfill management, and through a high degree of urban forest cover. Residents are confident they live in a society which is geared to improving its environment and responding quickly and effectively to any challenges. The city can provide for increasing proportions of its own food and energy needs. The city has embraced an ongoing drive for increased resilience.	Long-term – building on momentum gained

To achieve these goals, we will need to establish how we intend to shift from our current state to the future desired state of our environment. We therefore need:

- clear understanding, agreement and commitment to make the required changes
- adherence to agreed principles
- to nurture existing and develop new relationships, partnerships and collaborations with other key players such as iwi, Central and Regional government, other local authorities, key businesses, community groups, schools, researchers, individuals and so on
- understanding our respective roles and responsibilities – encompassing regulation, advocacy, partnerships, communication, education, engagement and funding.



IDENTIFYING OUR ISSUES AND PRIORITIES

IDENTIFYING OUR ISSUES AND PRIORITIES

OVERVIEW

The environmental issues faced by Hutt City vary in their level of significance, so the relative effect and consequence of each issue has been evaluated. This allows us to prioritise responses based on our limited resources and capacity, given the scale of the challenges we face. It is important to identify which issues are more critical, higher impact, or of interest to Council and local iwi, and to other organisations or groups. To achieve this we can pose questions such as:

- What are the two or three key things we must do?
- If we could only focus on a single area, what would it be and why?

The process used to establish our environmental priorities will require ongoing development and review. We will need to increase understanding through improved information, and integrate new issues or developments as they occur to improve the process. For example, technological change or impacts from climate change.

We have an obligation and a responsibility to act on behalf of the environment. By anticipating needs before they become problems, we have a huge opportunity to promote ourselves positively, but also to back that up with real evidence of progress. This in turn makes us more appealing as a destination and as a city.

Over the period of the 'Environmental Sustainability Strategy' (the next 30-50 years) the city will face a number of very significant environmental issues which must be given a high priority and appropriate response.

SELECTING RESPONSES

For each key issue identified, we have an array of possible actions available to choose from. This strategy outlines responses which address each identified issue across each of the three strategic goals.

When it comes to translating these 'generic responses' into actions, Council adopts a wide range of factors to determine what the most appropriate action is that best serves our purposes. Suitable criteria include:

- costs and benefits of actions – including broader co-benefits to areas not related to the environment, such as to health and non-financial aspects
- public support, buy-in and ownership of action
- level of risk and risk management if action is taken/ not taken
- how effective the action is likely to be in addressing the issue
- ensuring that the action taken is 'no-regrets' – or beneficial regardless of future trends or pressures
- how urgent the need for action is.

Establishing detailed costs and benefits will require a more robust approach over time in order to capture a broader set of long-term benefits. This may involve approaches such as assessing full lifecycle costs on top of capital costs for different solutions. For example, a higher capital cost for a building might seem less attractive at face value, however, if operating costs are lower over (say) 20 years, such an option could become a clear preference.

DELIVERING ON OUR GOALS

Council leadership

The important role of cities in environmental thinking and action is being recognised around the world. Council has its own responsibilities around regulation, advocacy, partnerships, communication, education, consultation and engagement, and funding. We also have legislative obligations for provision of services, such as waste management and infrastructure services, and the mandate to rate for these services.

However, within the wide range of functions undertaken by Council, we also have an ability to steer the path that we desire. For example, we may choose to carry out activities such as promoting and incentivising renewable energy uptake or home insulation, facilitating improved commercial building performance, removing consenting charges, or proposing plan changes to increase resilience.

In terms of leadership, there are many aspects that Council and the community need to consider:

- seeking bold solutions – to go above and beyond the usual or the status quo
- building community involvement in issues and facilitating community champions with Council acting as facilitator for wider engagement
- prioritising on the basis of identified need for critical or competing issues
- Council's commitment to embedding environmental care into all of its work – living and demonstrating

It is important to identify which issues are more critical, higher impact, or of interest to Council and local iwi, and to other organisations or groups.

community leadership and best practice across all our own activities

- ensuring that Council staff, councillors and the Mayor are demonstrating their commitment to, and championing, the environment
- collaborating with other councils on regional issues, with councils around New Zealand, and in partnership with other organisations.

Council can lead by example, by ensuring our own policies and processes comply with our strategy. For example, we could commit to environmentally aware procurement policies and contract management to drive supplier behaviour. Similarly, benefits can be achieved through our waste policies, asset management, or provision of staff expertise and advice.

Council could also make strategic choices about what parts of the city certain approaches should be applied to. For example, Council could promote Seaview as a wind energy and resilience hub; or Wainuiomata as a local food hub and base for outdoor recreational activity.

Council can lead by example, by ensuring our own policies and processes comply with our strategy.

Engagement and partnerships

To achieve our goals and vision, Council will need to work collaboratively with key partners such as iwi, volunteer groups, central and regional government, other local governments, key businesses, community groups, schools, researchers and other stakeholders. Council has a role in leading the community and involving all the appropriate stakeholders in discussions to chart the way forward for our environment and resilience planning – drawing on the collective wisdom of our own people.

Council could do better in engaging with a wider range of stakeholders, helping the community to understand our engagement processes, and being approachable, accessible and more visible at the community level. Council should also be using the most effective engagement methods available, and planning and implementing the engagement process with a focus on our stakeholders' perspectives – thereby increasing confidence that community views are an integral part of Council decision-making from the outset and through the entire process.

Part of this means clearly outlining roles and responsibilities, including identifying who has control over which aspect of the environment. If overlapping responsibilities exist, then these issues can only be addressed in collaboration with other organisations. In some areas, where appropriate, Council's role could change over time so that more responsibility is taken on by the community and other groups. Some of these shifts require fundamental behaviour changes, which are often very difficult to achieve, and typically resource intensive. The starting point is in ensuring that the appropriate knowledge or skills are available.

To achieve our goals and vision, the Council will need to work collaboratively with key partners

Funding

The cost of responding to the issues raised in this strategy is likely to have considerable and long-lasting impact on Council's Long Term Plan (LTP) and Financial Strategy. However, in the longer-term, expenditure to achieve more resilient infrastructure and property will help to provide significant savings and reliable services that will benefit all residents and businesses.

Council needs to consider how much we are prepared to invest as well as how much risk we are exposed to if we do not take appropriate and timely action. This means considering reallocation of existing funding, and carrying out activities in line with the level of aspiration that Council and the community is seeking. We may also need to increase funding in areas where we are not currently investing.

No additional costs have been included in Council budgets directly within this strategy. There are already many aspects of Council funding that contribute to environmental sustainability. Funding to carry out new or enhanced actions within specific implementation plans would be agreed through the Long Term Plan or Annual Plan processes. Fortunately, Hutt City is currently in a strong financial position to make prudent investments to create an exceptional environment.

TAKING ACTION

TAKING ACTION

AREAS OF FOCUS

This strategy has seven focus areas:

1. Water
2. Waste
3. Transport
4. Land-use
5. Biodiversity
6. Energy
7. Risk and resilience

For each focus area, we have identified major issues we face. For each issue, we have applied a consequence rating of moderate, high or extreme. These ratings have been established with the assistance of expertise from within and outside Council, and are built on evidence regarding the likely level of impact of each issue. We need to continue to develop and improve these ratings over time, including strengthening the evidence base, and monitoring developments in areas such as technology, domestic and international policies, economic, social and cultural factors, and their collective effect on the environment.

The following sections of this strategy describe each focus area, the issues within it, and the identified response options for each of the three strategic goals – **lead**, **protect** and **enhance**. We clearly identify what we will do for each goal, under each issue. For a summary of each focus area see Appendix 1. Note that actions identified in the following sections are examples only. As this document presents a strategic direction, specific actions will be provided in a series of separate documents, including action plans, work programmes, or specific projects as appropriate.

FOCUS AREA	ISSUE				FOCUS AREA	ISSUE
Risks and Resilience	Natural hazards	Climate change	Resource shortages	Economic shocks	Water	Quality
						Usage
					Waste	Production
						Disposal
						Emissions
						Pollution and contamination
					Transport	Emissions
						Network optimisation
					Land-use	Accessibility and efficient use of space
						Importance of green space
						Food supply
					Biodiversity	Protection and enhancement of species and habitat
						Invasive species
						Coherence and connectivity
					Energy	Efficiency
						Emissions
						Changing demand
						Air pollution

(Issue Rating: Extreme High Moderate)

FOCUS AREA I: WATER

This focus area incorporates water supply networks, sewage disposal networks ('waste-water'), storm-water runoff and management, harbours, lakes, rivers, streams, aquifers and springs. It is much wider than simply water supply – it encompasses the life-giving properties and intrinsic importance of water throughout our environment, including in so-called 'receiving environments' such as Te Whanganui-a-Tara (Port Nicholson/Wellington Harbour).

Background

The Hutt River was once a natural waterway, meandering across the Hutt Valley. It provided one of the few large expanses of flat fertile land in the local area, and was therefore highly desirable for settlers. This has led to the Hutt River now being constrained within channels and been subject to contamination and water extraction demands. Like any major city, we also now have comprehensive network and treatment facilities for managing potable water, and waste-water, and for directing storm-water into the harbour.

Industrial and transportation activities in the Hutt Valley create issues associated with pollution to waterways (eg, heavy metal deposits in the harbour). These issues present an ongoing challenge for managing our ecosystems and water health. Though much of the direct responsibility for water quality and supply lies outside the city, principally at Regional Council level, Hutt City Council plays an important role in understanding the current and desired state of its water, and working with others to ensure this is achieved. An important consideration for water is its resilience, particularly for potable supply, where networks will be under pressure from climate change impacts such as sea level rise.

Council will need to continue to work closely with GWRC and Wellington Water to achieve jointly agreed water quality and usage outcomes.

Issue: Quality

Water contamination is caused by factors such as urban runoff, industrial activity and cross-contamination between storm-water and sewage (mainly from sewage overflow into the storm-water system). Salination (the increased salt content) of ground water in the Hutt Valley has been recognised as a potential issue with increasing sea level rise. Contaminated water or discharges can have impacts on the health of ecosystems and community health and wellbeing.

Council can demonstrate **leadership** by ensuring all water quality is monitored and managed to a high standard – potable, stormwater, sewage, as well as waterways, coasts and aquifers. The city can **protect** its water quality by resolving issues and preventing further contamination, and ensuring that water sources are safeguarded. And water quality can be **enhanced** by integrating low impact urban design into management approaches, particularly during upgrades to existing infrastructure, and ensuring that water leaves the city cleaner than it enters it.

Council actions may include modifying our District Plan, or strengthening our Stormwater Plan to embrace activities such as water retention onsite, localised infiltration, or local wetlands where appropriate. Ambitious actions might include going beyond the national and regional water standards, such as advocating to make our waterways swimmable.

Issue: Usage

Demands on water can lead to water shortages, restrictions and impacts on water quality. Demands may be seasonal or weather-related, or driven by trends such as population growth.

Leadership involves Council monitoring, managing and using water efficiently. Water volumes are **protected** if supply is maintained and system reliability is enhanced (eg, through use of alternative delivery or backup systems to increase the level of redundancy), while avoiding overuse of the water resource and significant environmental impacts, such as algal blooms or ecosystem loss. The quantity of our water is **enhanced** when water availability is not threatened, putting pressure on both people and the environment.

Activities we could pursue include promoting local rain-water harvesting or collection, neighbourhood or suburban water provision, and managing water demand.

FOCUS AREA 2: WASTE

This focus area incorporates solid waste and contamination from waste sources, including the resulting pollution and greenhouse gas emissions.

Background

Approaches to managing waste have developed significantly over the last 100 years. Previously, onsite burial, burning or indiscriminate dumping may have occurred, but these days, waste is collected and processed into larger and more robustly managed landfill disposal sites, together with provision of recycling services, and hazardous and commercial waste collection. Council encourages and helps facilitate waste management strategies through our contribution to the Regional Waste Minimisation Plan.

Issue: Production

Includes excess and non-recyclable packaging, and increased production and consumption of 'throw-away' items.

Council demonstrates **leadership** by minimising the volume of waste it produces. The city **protects** its environment by reducing over-consumption and ensuring that production and service delivery produce minimal waste. The city **enhances** its environment by managing waste from source to disposal, fostering closed-loop production (where waste from one process is used as an input to another), encouraging lower impact materials, and through reuse and recycling, including composting.

Issue: Disposal

Landfill activity requires space and careful management to avoid contamination, and appropriate disposal of hazardous and commercial waste. Key elements of waste disposal are to encourage reduction, reuse and recycling. Our relatively small volumes and distance to markets can make effective recycling activities difficult to achieve affordably.

Council **leadership** is demonstrated by continuing to manage landfill to best practice. The city environment is **protected** by waste being channelled to the appropriate disposal method - recycling, composting or landfill. The environment is **enhanced** when most waste is able to be avoided, recycled, composted or reused.

Issue: Emissions

Methane emissions come from the breakdown of organic material within the landfill, or through the composting process.

Council shows **leadership** by continuing to capture all landfill emissions, and diverting green-waste back into the carbon cycle (eg, to use it for growing new plants). The environment is **protected** when the amount of waste in the city is reduced, and greenhouse gas emissions from waste are minimised. And it is **enhanced** when the environmental impact of emissions is understood and managed. For example, we capture, burn and generate electricity from the methane gas produced by the Silverstream landfill.

Issue: Pollution and contamination

The issue of waste and litter polluting air, water and land has implications for the natural environment and for the health and wellbeing of people within it.

Council **leadership** involves continuing to identify, monitor, avoid and manage contamination from waste. It also involves Council being proactive in the community and acting as a key partner in efforts to reduce waste, streamline production and address use. The environment is **protected** when contamination is prevented and legacy issues (eg, heavy metals) are addressed. And the environment is **enhanced** when effective control, including phasing out of contaminating materials is achieved.

FOCUS AREA 3: TRANSPORT

This focus area incorporates all forms of transport and their effects or benefits for the environment, including motor vehicles, transport by land, air and sea, public and private transport, walking and cycling. It includes the greenhouse gas emissions and air and water pollution caused by many transport activities. It also includes the 'noise pollution' from vehicular transport, including road-surface noise.

Background

Prior to development of roads, rail and public transport networks, the Hutt River was used by both Māori and early settlers to navigate inland, providing access to plentiful food sources. Today, for our size, the city has an extensive network of roading and a high level of service from public transport. However, walking or cycling in Hutt City is limited compared to other regional centres, such as the Wellington CBD (which sees around ten times the percentage of people walking to work than Hutt City). This is despite the Hutt Valley being ideally suited to walking and cycle commuting, particularly with the advent of electric assist bicycles, which can cope with both hills and strong head-winds.

Modern technology has opened up possibilities for encouraging ride-sharing or carpooling activities by private vehicle users. This offers potential for reducing congestion, and provides options for those where active modes may be a barrier or where public transport is not easily accessible.

Issue: Transport emissions

Greenhouse gas emissions from transport activities make up a large portion of the city's total emissions. The emissions from road transport are also used as one of the funding considerations by the New Zealand Transport Agency when co-funding projects.

Council demonstrates **leadership** by modelling low-carbon transport operations within its own organisation – including demonstrating best practice in use of technology to promote 'low-impact' options such as working from home, or attending meetings via video-conference. Council has moved toward smaller vehicles for its own fleet, and made several bicycles and an electric bike available to staff. It has also made commitments to promote and incentivise active transport modes (such as walking and cycling). There are excellent opportunities to increase cycle and walkways and extend public transport services in our city.

The city is **protected** when emissions are significantly reduced, and use of active and public transport is greatly increased. Our environment is **enhanced** when the environmental impact of emissions is understood and managed accordingly. For example, we could improve our understanding of the capacity of our green space to absorb carbon equal to or greater than our emissions.

As well as reducing emissions, active transport by cyclists and pedestrians provides additional health, wellbeing and social benefits. Such activities can also provide local economic benefits.

Issue: Network optimisation

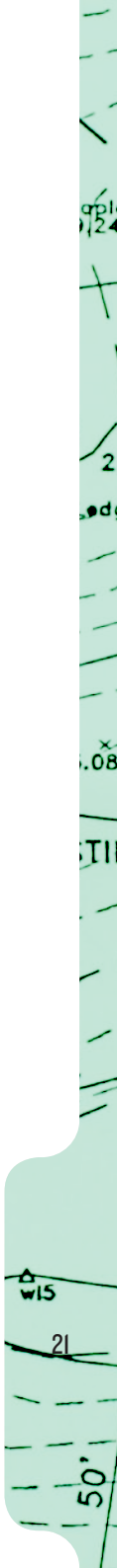
Efficient transport networks and cycle and walkway development are important aspects of making Hutt City an attractive place to current and prospective residents. Provision for active modes is increasingly considered core infrastructure in many cities. There is a need to more effectively balance the provision of facilities for motor vehicles, such as parking spaces, with those required for non-motorised transport options, including walking and cycling. Optimising the number of road trips and distance travelled is another consideration for NZTA when co-funding projects.

Council's **leadership** includes plans for improved and prioritised networks for multiple uses – pedestrians, cyclists and motor-vehicles. This means preparing the way for a change in the vehicle mix. The environment is **protected** when existing and proposed development is designed with a focus on local community needs, and with effective networks which favour active and low impact modes.

The environment is **enhanced** when networks are able to be adapted and are robust to changing uses over time.

The Council's Urban Growth Strategy (UGS) outlines a number of opportunities for improving our transport networks that will enhance mobility, improve resilience to natural disasters, and provide a more enjoyable city to live in. The UGS identifies the opportunities as: continued development of our cycling network, improving the city's connections to State Highway 2, better east-west connections across the southern half of the city, and providing Greenfield infrastructure to spur development. In addition the UGS promotes targeted housing intensification with higher density around transport hubs.

Council intends to develop a comprehensive cycling network that links all key population centres, provides access through the city, and is in alignment with the Great Harbour Way concept. It is investing heavily in developing the network further over the next 20 years, with over $16 million of works planned. Recreational cycling includes both on and off-road modes, as well as cycle tourism which is evolving at pace with part of the New Zealand cycle network running through Hutt City.



FOCUS AREA 4: LAND-USE

This focus area incorporates all land-use activities, including urban, rural, coastal and reserve land, housing and industry. It has strong connections to community health and wellbeing in regard to ease of movement, provision and layout of open space and the natural environment, and provision of resources.

All development has an impact on the environment. The effects can range from minor changes to the use of the land, through to major changes that affect the life-giving capability of the environment. A key consideration is the effect development may have on the function of our natural areas and open spaces and the public's ability to enjoy and benefit from them. A crucial aim is to maximise the performance of the built environment to support high quality of life without sacrificing the natural environment.

In terms of urban land-use it is important to establish what the 'purpose' of the city is, what it provides for its citizens, and how it can function most effectively for its residents, while not diminishing the environment.

Background

Māori traditionally settled at Waiwhetū and Petone, but with European settlement, a vast area of land around the harbour was sold to the New Zealand Company. The quality soils led to a thriving farming and then market gardening community. In the 1920s, the Hutt Valley became the focus of New Zealand's motor-vehicle assembly industry which lasted until the 1980s. During the post-World War II period, urban sprawl gradually led to the loss of prime horticultural land to urban development. This included large scale state housing development.

Land use activities have had a major impact on the environment and appearance of Hutt City. This has included a transition from a forested landscape with natural waterways, to being cleared of much of the original vegetation, with waterways constrained within stopbanks or buried within pipes. Large-scale earthworks, drainage, infrastructure and urban development have transformed our environment, and a wide array of land use activity is now in place across the city – including roading, rail, urban, industrial, residential, stopbanks, landfill, sewage treatment, schools, hospitals, community spaces, and more.

Like most New Zealand cities, Hutt City has become highly dependent on the motor vehicle to get around. This has resulted in urban spaces which are not particularly 'people friendly', and some elements of the urban design has been less than ideal.

Urban form itself, including building scale, quality, and mix of uses can and should be optimised to achieve smart, environmentally conscious design. Such approaches can deliver low energy use, improved warmth, recycling of grey water, maximising opportunities to achieve solar gain and use solar energy, green spaces and sustainable urban drainage systems.

The city's environmental amenity is aided by a range of spaces which support environmental management and restoration, recreation and education. Some of this is owned and managed by Council, while other spaces are privately owned, or managed by the regional council or the Department of Conservation.

Around half of the land within the city boundary is now managed as public open space and we have a varied array of recreational opportunities from the river, beach and hills, through to the wide range of Council-provided sports grounds, playgrounds, pools and community facilities.

These amenities are cherished by our residents and are critical to the quality of life the city provides. They also deliver a wide range of additional benefits such as carbon sequestration, flood mitigation, food provision, and ecological and visual amenity.

Open spaces are important for the community's wellbeing, including human and non-human populations. Our public open space network contains parks, neighbourhood reserves, sports grounds, beaches, streams, bush reserves, gardens, tracks and cemeteries.

The relationship between open spaces and health and wellbeing has strengthened over the last few years. Council is the major provider of public open spaces in residential areas of the city. These spaces allow our community to participate in both formal and casual recreational activities.

Issue: Accessibility and efficient use of space

This issue is about using our available space efficiently and effectively. It includes considering the layout of our communities and the amenities which service them such as roads, footpaths, and availability of open space. We can determine how we would like our spaces to

look and function, such as defining areas where urban intensification is encouraged, or areas where it is to be avoided.

The overall aim is to ensure that our urban spaces are of high quality, fit for purpose, and accommodate choice and diversity. Many cities are beginning to produce Spatial Plans which define the long-term direction that the city wishes to pursue – taking into consideration all of the factors that determine optimum performance, resilience and liveability.

Council **leadership** is borne out through initiating plans for local centres, enabling multiple uses of spaces and facilities, ensuring connectivity and community amenities that support strong neighbourhoods. For example, the District Plan could be used to encourage and require low-impact design and integration with public transport networks. The environment is **protected** when responsible management of resources is undertaken, when changes to land-use are designed for minimal impact on the environment, and when suburban centres and proposed developments offer local services, connectivity, local infrastructure and economic opportunities. Another aspect of protection is our heritage buildings, and balancing the need for safety with retention of important built heritage. The environment is **enhanced** when urban neighbourhoods have identity and provide flexibility for a range of uses.

Issue: Importance of green space

Access and proximity to nature is a key element of defining the 'liveability' of a city. In addition, green space and open space, both public and private, provide habitat, access to recreation, and add to the character of a place.

Council demonstrates **leadership** by evaluating and categorising existing green space, and managing its own open spaces in a low-impact way. Green space is **protected** for multiple purposes, including ecosystems and risk management (eg, flood containment). Green space is **enhanced** and expanded with development of multi-purpose 'green corridors' for habitat, recreation and visual amenities.

Council intends to protect and retain land that is managed as public open space in accordance with Council's 'Reserves Strategic Directions' to help ensure the values of Hutt City's open spaces are not compromised as the city develops. Council recognises the key benefits of our public open spaces are habitat protection, landscape protection and recreation opportunities. However, the combination of Council selling areas of open space, as well as encouraging intensification can have a significant and 'double whammy' impact.

There is also a need to require new development to set aside open space where possible, and to integrate low-impact urban design and water sensitive urban design approaches to minimise the impact of urban activity on the natural environment. Well located and appropriately developed public open spaces help to make intensive urban development more liveable.

Issue: Food supply

A major component of our energy and resource use goes towards the growth, manufacture, transportation and disposal of food. There are multiple advantages to encouraging localised food activity.

Council **leads** by supporting local food production on public and private land. The city **protects** our environment by ensuring urban agriculture and home food growing are important aspects of city life. The city is **enhanced** when locally produced food is encouraged and fostered. Council supports the development and marketing of local food growing activity and supply, including through schools, communities, and through its Green Gardener service. Council could encourage the removal of fences and walls between private properties, to remove the barriers between activities, encourage shared gardening, and strengthen community connections.

In 2011 Bristol City in the United Kingdom assessed their level of food dependency and found that they have a high level of dependence on food from outside the district and that there are considerable effects of food production on resources and ecosystems. They recommend a 'food systems planning' approach which involves strategic integration of agriculture and food into the way that cities are designed, planned and managed. Such an approach can address issues relating to the environment, employment, local economy, education, training, health, climate change, social justice and inclusion.

FOCUS AREA 5: BIODIVERSITY

This focus area incorporates the health and wellbeing of our natural and semi-natural environment, including ecosystems, flora and fauna and open space. Work that Council undertakes on land it is responsible for is aligned to national strategies for biodiversity and plant conservation.

Background

Pre-human vegetation consisted of conifer, broadleaf, pockets of native beech forests, and tōtara and kahikatea, together with extensive wetlands with nikau palm. The forests teemed with bird-life such as weka, saddlebacks, kiwi, huia, takahē and moa. Other wildlife in the vicinity included tuatara, bats, wētā, fur seals and sea lions. Upon settlement, land clearance, drainage and changed use altered ecological systems and caused significant habitat and species loss. The introduction of exotic plant species, mammalian predators and farm animals led to a decline or local extinction of a range of native species.

Though today there are only remnants left of the pre-human forests, Hutt City is unique in having such a large proportion of land area held in public ownership (20,000 ha or around 50 per cent of the total area of the city), in the form of public open space. The bulk of this is managed as conservation areas or regenerating bush. This land significantly contributes to the visual, recreational and biodiversity values of the city.

Issue: Protection and enhancement of species and habitat

Our unique land and water-based native ecosystems are threatened by pollution, introduced species, predation, depletion, competition, fire-risk, reduction in available habitat, land development, stormwater and wastewater management, natural hazards and climate change.

Council can demonstrate **leadership** by taking a proactive role in identifying, planning and protecting key areas. The city's biodiversity is **protected** when critical areas are effectively managed and monitored and responses are altered to adjust to changing risks. Council and community initiatives are undertaken to improve habitat/biodiversity in identified high value areas, and human/nature connections are strengthened. Our biodiversity is enhanced when we value ecosystem services – such as purification of water and air, soil conservation, carbon sequestration, nutrient dispersal and cycling, and seed dispersal and pollination. It is also **enhanced** when we re-introduce native or locally extinct species and when restorative programmes, such as riparian planting, are applied.

Issue: Invasive species

Some introduced animal and plant species have caused extensive damage to our native flora and fauna. Council can demonstrate **leadership** by taking a proactive role in monitoring and managing the impact of pest species. The city can **protect** its biodiversity by managing, mitigating or avoiding significant impacts and by eliminating major pest threats, by working in partnership with key participants or communities. Biodiversity is **enhanced** when appropriate management, including strict controls where appropriate, on high risk invasive species are in place, and when ecosystems are managed in a way that allows them to improve over time.

Issue: Coherence and connectivity

The ability for our public open spaces to thrive, particularly the ones that have important ecological functions, is a key consideration for environmental wellbeing. We need to ensure that these spaces, of high biodiversity or ecological value are literally connected through 'ecological corridors'.

We need to consider the size, shape and nature of these corridors, and what is required to sustain viable ecological communities at either end and throughout. Proximity to other natural sites to form linkages or migration routes, and the proportions of native vegetation or forest cover must also be considered.

Council has an overarching strategy for reserves management ('Reserves Strategic Directions') with further detail set out in the 'Urban Forest Plan' and 'Bush Reserve Management Plans'. These documents guide the way Council manages land and habitats on Council land.

Council **leadership** includes plans for suitable connectivity of flora and fauna and community amenity. The city **protects** its biodiversity by identifying and investing in the development of key connections and identifying how to fill the gaps in our network. **Enhancement** occurs through ongoing development of biodiversity connectivity and coherence across the city to develop a viable, connected web of natural areas.

FOCUS AREA 6: ENERGY

This focus area incorporates energy used to heat, cool, and run our houses and power our business and industry. It includes the greenhouse gas emissions from energy production and combustion, as well as the 'embedded energy' included in goods and services. The energy sector is often the focus of discussions on 'green technology' to drive the economy, including renewable energy. Similarly, there may be opportunities for such development in the local economy.

Background

Much of the energy used for heating and power by early settlers was generated from the burning of vast tracts of forest that were felled to clear the land. Nowadays, the bulk of our electricity production is imported from outside the city. Though the national grid consists of up to 70 per cent renewables, there are inefficiencies due to transmission losses. Other sources of energy include gas, coal and diesel. Air pollution from home heating and industry can be a problem in some areas.

Issue: Efficiency

This involves using energy wisely, avoiding energy waste and choosing low energy options. Energy efficiency and conservation usually provide cost reductions, improved health and reduced carbon emissions. Council has for some years provided the Eco Design Advisor service to inform residents about energy efficiency options in their homes.

Council demonstrates **leadership** by setting an example, identifying and addressing issues in its own operations – both new and existing. For example, Council is considering the installation a highly efficient 'ground-source' heat pump as part of the renovation of the Civic Buildings. The city is **protected** when major energy users are identified and available improvements are made, when significant transmission losses are identified and resolved, and when health and wellbeing issues related to cold, damp homes are addressed. The environment is **enhanced** when local and renewable energy generation is the preferred option – including possibilities such as energy from waste, or off-grid or self-sufficient suburbs. Council could also require or incentivise energy efficiency standards, in partnership with key business sectors and central government.

Issue: Emissions

Emissions from energy form a large component of total city emissions.

Council demonstrates **leadership** by selecting low emission options for its operations. For example, cities around the world are moving toward LED street-lighting which has lower energy requirements. The city environment is **protected** when reduction, efficiency and conservation activities become the norm. The city environment is **enhanced** when materials used in building, goods and infrastructure do not increase emissions.

Issue: Changing demand

Energy demand may alter in any direction and affect both the price of energy and environmental outcomes.

Council demonstrates **leadership** by identifying and improving its own energy footprint, and works with high energy users to identify and reduce their demand. Citywide **protection** occurs when energy demands and uses are understood and addressed and when the environmental impacts of energy generation and transmission are minimised. The city environment is **enhanced** when alternative energy including concepts such as combined heating, cooling and power systems are encouraged.

Issue: Air pollution

Burning of wood and coal, treated or wet timber can have health and wellbeing connections related to air quality.

Council demonstrates **leadership** by identifying and avoiding energy use which contaminates the air. The city is **protected** when dirty energy is identified and curtailed. The city environment is **enhanced** with effective control, including phasing out materials that cause unacceptable pollution.

FOCUS AREA 7: RISK AND RESILIENCE

This category includes natural hazards, climate change impacts and risk management in areas of issues such as resource shortages and economic shocks.

Council has the ability to plan and develop appropriate land-use zoning based on risk or hazards. Some of the issues associated with hazards have been clearly brought home following the Christchurch earthquakes, where land has been abandoned and core economic activity has relocated away from the CBD. This suggests a real need to be proactive, and use long-term risks and hazards to transition to a preferred future state. The city also needs to consider multiple or cascading risks. For example, if resources become less available, fuel more expensive and then a major natural disaster occurs. Strengthening our resilience has a strong link to improving health and wellbeing.

Interest in all aspects of resilience has increased recently – both in New Zealand and internationally. This has being driven by major events such as the Christchurch earthquakes (as mentioned), the Japanese tsunami, and an increase in high impact storms. On a smaller scale, awareness of local food dependency has increased, with Council support via initiatives such as the Green Gardener service, supporting community gardens and Enviroschools.

Our approach to responding to risks and building resilience

Although we are still aiming to deliver on the goals of this strategy (lead, protect, enhance), this category cuts across all the others, which means we need to look at how each issue here relates to each issue in the other focus areas.

Identify risks: This involves understanding the level of risk to, and resilience of, our environment – how resilient are we? We need to understand the effects of a range of risks on property and infrastructure, economic, social, cultural, and environmental and community values.

Engage and collaborate: It is critical to broaden the discussion around resilience, increase understanding and work closely with others to define preferred solutions. In regard to leadership, we could, for example, aim to set up a Mayor's task-force on resilience – covering natural hazards, climate change, resource shortages and economic shocks.

Plan proactively for greater resilience: This involves outlining risk/resilience scenarios and their impact on both the city's and Council's operations, developing a risk management approach, and adopting a set of risk management principles.

Continuously adapt: Adjust our systems and processes to allow for ongoing change and uncertainty, building our diversity, independence, modularity (ability to roll out solutions at a variety of scales), seek continual feedback, and apply no-regrets approaches.

In addition, some further principles which relate to avoiding or mitigating risks, increasing resilience, and assisting land-use management are:

- Protect people – prevent death or injury, and ensure public health.
- Create liveable communities – in which people can live, work and use the land without ongoing stress or fear of natural hazards or other risks.
- Create and maintain a resilient, built environment – including infrastructure and lifelines, which take into account the risks from natural hazards so that it can operate effectively while still being affordable.
- Implement an adaptive management approach – which allows for improvements in the understanding of hazards, and the effects of climate variability. The risk associated with different hazards will reduce over time by taking a broad-scale, adaptive approach over the longer-term. The ability to respond to changes in the nature and extent of risk, ease transitions, and provide the level of safety desired by the community is essential.
- Take residual risk into account – it is important to address the entire risk spectrum when managing the effects of natural hazards. Whatever event is planned for, there could be a larger major event. The risk from these major events also needs to be recognised and managed. Some risks are intolerable.
- Avoid exacerbation of risk in other places – new development and hazard management measures will not exacerbate risks or effects elsewhere. This applies at all scales, from localised 'property to property' effects, through to the community or district scale.
- Increase understanding and community awareness of underlying natural systems and processes – this is crucial in managing risk and ensuring community safety. Increasing community awareness is essential to help people take risks into account when undertaking development.
- Control land use activity based on risk – controls should depend on the characteristics of the risk in that area, and its effects on environment, people and assets. The risk is dependent on local geography and exposure. Controls will depend on the nature of the risk, and may include avoidance of new, or restrictions on, existing development or specified design standards, to avoid or mitigate negative effects.

- Considering the consequences of the risk is critical, along with the likelihood of a particular event occurring.
- Socio-economic disruption at individual and community levels are important considerations – the utility and amenity of land will be considered in addition to people's safety and damage to buildings.
- The cumulative effects of risk should be considered, including the likelihood of being affected over the longer-term, and the cumulative effects of repeat events or a more dynamic risk profile.

Issue: Natural hazards

Flooding

The Hutt River has a long history of flooding. Within months of the first immigrants arriving at Petone in 1840 it was flooded by the Hutt River. However, within 40 years most of the forests which covered the entire floodplain had been cleared to make way for development. For thousands of years these forests had controlled the river alignment, the processes of erosion and sediment and nutrient transport, and the force of the river in flood. With settlement and development, the Hutt River was altered from meandering across the floodplain to being contained within stopbanks and channels. River modification, including shingle extraction continues to alter the character of the Hutt River today.

Today, around 70,000 people live on the floodplain of the Hutt Valley, and it is estimated that $6 billion[1] in assets are at risk from flooding. The cost of a breach in one of Lower Hutt's stopbanks has been put at as much as $1.7 billion. Greater Wellington, Upper Hutt and Hutt City councils jointly developed a 40-year blueprint for flood protection in the Hutt Valley in 2001, in close collaboration with the community. The resulting 'Hutt River Floodplain Management Plan' is designed to be reviewed every 10 years, or earlier, if flood hazards change.

By 2040, upgrading of the Hutt River stopbanks to protect against a flood of 2,300 cumecs, or a 1 in 440 year event is due to be completed. However, with climate change, the likelihood of significant flood events of any given level is expected to significantly increase in frequency over time. So, a current one in 440 year flood event on the Hutt River has the potential to become a one in 50 year occurrence by the end of the century.

Regional Council analysis included in the 'Floodplain Management Plan' has indicated a 'probable maximum flood' for the catchment of 7,000 cumecs. Options for protecting Hutt Valley communities against floods include enhancement of natural catchment vegetation and urban forest cover (ie, slowing down the rate of water flow through the catchment), structural methods (eg, stopbanks, riverside planting, increased retention or storage capacity) and non-structural methods (such as education, flood warning systems, or introducing new planning rules).

Current trends to reduce impacts such as flood risk are towards using natural systems (or 'soft engineering' solutions). For example, less constrained river systems, or re-establishing dune systems to address coastal erosion.

Earthquake, tsunami, liquefaction and landslide

In 1855, a magnitude 8.2 earthquake, the most powerful ever recorded in New Zealand, hit the lower North Island, permanently altering the landscape of the Wellington region and affecting its subsequent urban development. A tsunami generated by the earthquake caused elevated water levels in Wellington, crossing the Kilbirnie isthmus, and flowing part-way up the Hutt Valley. The newly exposed strip of shoreline between

1 Victoria University, Climate Change Research Institute: http://www.stuff.co.nz/dominion-post/news/hutt-valley/7872436/Plan-now-for-future-floods-urge-scientists

Wellington and the Hutt Valley was subsequently developed as a key road and rail route. The force of this earthquake also caused uplift in the region which helped drain the swampy lower reaches of the Hutt Valley and Wainuiomata rivers.

The Esplanade at Petone is expected to be subject to subsidence in the event that the Wellington fault line experiences a major rupture, indicating that some relocation of services and infrastructure in that location would be appropriate.

Issue: Climate change

Over the next 30-40 years, Hutt City will need to make significant adaptations to address climate change impacts. Increased temperature means that on average, two or more extra weeks of drought are expected annually by mid-century for much of the North Island, with new record high temperatures. Extreme precipitation events (rainfall intensity and possibly frequency) can also be expected, and result in increased incidence and levels of flooding, erosion and landslides. The impact of these changes is likely to be greatest in areas with high vulnerability such as those already prone to flooding or drought. Each suburb will be exposed to its own unique set of issues.

The rate of sea level rise is now around 3mm per year, and we can expect an increase in the frequency of extremes of high tides and their associated risks.

As development has occurred, total exposure to environmental risks has continued to increase. In some cases, this is due to increasing exposure to existing risks, such as increased intensification of development in flood-prone areas. In other cases, it is due to an increase in the risk itself – such as increased risk of damage from storm surge caused by sea level rise. Council will need to ensure that a sufficient level of preparation and funding is in place to assess ongoing risks and to take action as necessary.

Issue: Resource shortages

It is now widely accepted by mainstream agencies that depletion of fossil fuel resources is likely to have significant ramifications for economic stability, transport affordability, and availability of goods and services over the next few decades. New Zealand is more exposed than many other countries to these effects due to our reliance on imported goods and long distance transport. A key impact of burning fossil fuels is the release of greenhouse gases, so seeking replacement energy sources addresses both the diminishing resources and one of the major contributors to climate change.

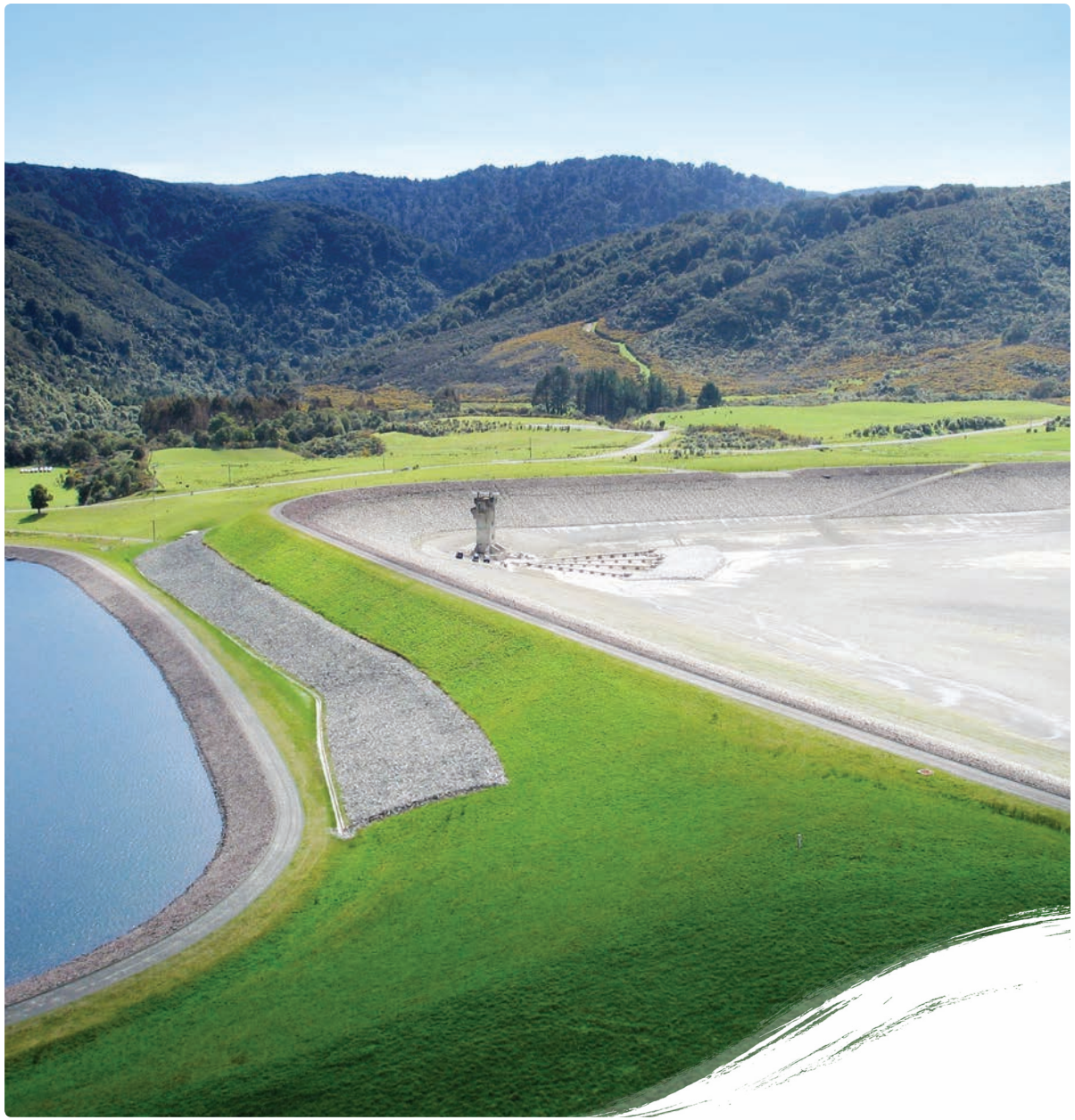
Similarly, the energy used in powering our buildings may not be sustainable. These issues can be addressed through investing in larger scale and local renewable energy, and preparing for peak oil, with its flow-on effects on transport, production, plastics, and other goods and services. One leadership step could be to convene a 'Mayor's taskforce' and empower people to provide for their own basic needs – food, shelter, energy, waste treatment, etc.

One of the key resources we rely on is food. If our access to markets or suppliers is constrained, we are potentially vulnerable and challenged in meeting our own basic needs. This suggests that a greater level of localised food independence is needed, thereby increasing our resilience – socially, economically, culturally and environmentally. For example, there may be an opportunity in the Naenae mall area, which was originally established as a community co-operative, to look at the extent to which Council and the community could re-establish local activities in a new and modern form, such as operating farmers' markets or selling local and specialised goods and services.

Issue: Economic shocks

The economic climate can have both positive and negative impacts on the environment. The combination of an ageing population and low levels of migration for example, can expose the area to the effects of a declining labour force. National and international issues can also constrain local economic growth, affect people's prosperity and effect social and environmental outcomes. For example, the Global Financial Crisis had a marked effect on the economy from about 2007 onwards and notable changes also occurred amongst environmental indicators around this time. For example, the amount of fossil fuels burnt for energy by households, industry and for transport reduced. However, it also provided a stimulus for continued economic growth including for non-renewable activities such as coal or oil exploration and extraction.

Acknowledging that economic, social, environmental and cultural outcomes are interrelated has led to the development of holistic monitoring systems that consider these aspects together. Systems of this type provide a more useful measure of people's wellbeing than Gross Domestic Product (GDP), which only measures economic activity. The Wellington Region Genuine Progress Index (WR-GPI) is a holistic monitoring system that has been used for a number of years on a regional basis, and could potentially become a greater influence on our activities. The index can inform the community about which activities provide resilience (such as education, labour force participation, physical activity), and which are particularly vulnerable to national and international shocks (e.g. employment, energy consumption, landfill waste). The effect of policy changes will show up in the index over time. Options for reducing our exposure to risks of failure in financial markets – such as local economies, local currencies, time-banking, and sharing of resources – are gaining increased attention and traction.



APPENDIX I: FOCUS AREA SUMMARY

This section provides a summary table for each focus area, outlining the key responses across each of the three Strategic Goals.

The summary tables are colour coded as follows:

	Goals
	Focus Area
	Issue
	Response

ENVIRONMENTAL GOALS		COUNCIL DEMONSTRATES LEADERSHIP IN ENVIRONMENTAL STEWARDSHIP AND SUSTAINABILITY	THE CITY EMBRACES ENVIRONMENTAL PROTECTION AND COMMUNITY RESILIENCE	THE CITY CONTINUOUSLY ADAPTS AND ENHANCES ITS ENVIRONMENT
Focus Area	**Issue**	**Responses**		
Water	Quality	Council monitors and manages water quality to a high standard	Issues are resolved and further contamination is prevented	Low impact urban design is integrated into management approaches and water leaves the city cleaner than it enters
	Usage	Council monitors, manages and uses water efficiently	Adequate supply is maintained and redundancy enhanced while avoiding overuse	Multiple supply options are pursued and water availability is not reduced
Waste	Production	Council minimises volume of waste produced	Over consumption is reduced and products and services produce minimal waste	Waste is managed from source to disposal
	Disposal	Council manages landfill to best practice	Waste is channelled to the appropriate disposal method – recycling, composting, landfill	Most waste is able to be recycled, composted or reused
	Emissions	Council captures landfill emissions	The amount of waste in the city and exposure to emissions pricing is reduced	The environmental impact of emissions is understood and managed
	Pollution and contamination	Council identifies, monitors, avoids and manages contamination from waste	Contamination is prevented and legacy issues (eg, heavy metals) are addressed	Effective control, including phasing out of contaminating materials
Transport	Emissions	Council selects and promotes low emission transport options	Emissions are reduced and use of active and public transport is increased	The environmental impact of emissions is understood and managed
	Network optimisation	Council plans for improved networks for multiple uses – vehicles, pedestrians, cyclists	Existing and proposed development designed with effective networks which favour active and low impact modes	Ongoing adaptive network design and management
Land-use	Accessibility and efficient use of space	Council plans for local centres, multiple uses, connectivity and community amenity that support strong neighbourhoods	Suburban centres and proposed developments offer local services, connectivity, local infrastructure and economic opportunities	Urban neighbourhoods have identity and are flexible to allow for alternate uses
	Importance of green space	Council evaluates and categorises existing green space	Green space is protected for multiple purposes, including ecosystems and risk management (eg, flood containment)	Green space is enhanced and expanded with multi-purpose 'green corridors' for habitat, recreational and visual amenity
	Food supply	Council supports local food production on public and private land	Urban agriculture and home food growing are important parts of city life	Locally produced food is encouraged and fostered in the city

ENVIRONMENTAL GOALS		COUNCIL DEMONSTRATES LEADERSHIP IN ENVIRONMENTAL STEWARDSHIP AND SUSTAINABILITY	THE CITY EMBRACES ENVIRONMENTAL PROTECTION AND COMMUNITY RESILIENCE	THE CITY CONTINUOUSLY ADAPTS AND ENHANCES ITS ENVIRONMENT
Focus Area	**Issue**	**Responses**		
Biodiversity	Protection and enhancement of species and habitat	Council identifies key areas and species, and plans for protection in conjunction with key partners	Critical areas of the city are effectively protected and monitored and responses altered to adjust to changing risks	Value ecosystem services and re-introduce native or locally extinct species
	Invasive species	Council monitors and manages the impact of weeds and pest species in conjunction with key partners	Significant impacts are managed, mitigated, or avoided, and responses are co-ordinated	Strict control or elimination of high-risk invasive species
	Coherence and connectivity	Council plans for suitable connectivity of flora and fauna and community amenity	Key biodiversity connections are identified and invested in	Development ensures biodiversity, connectivity and coherence across the city
Energy	Efficiency	Council identifies and addresses issues in its operations	Significant transmission losses are identified and resolved	Local energy generation is preferred
	Energy emissions	Council selects low emission options for its operations	Reduction, efficiency and conservation including renewables	Materials used in building and infrastructure do not increase emissions
	Changing demand	Council identifies and improves its energy footprint	Citywide energy demands and uses are understood and addressed	Alternative energy including combined heating, cooling and power systems are encouraged
	Air pollution	Council identifies and avoids energy use which contaminates the air	Dirty energy is identified and curtailed	Control, including phasing out of materials that may cause pollution
Risk and Resilience	Natural hazards	Continuously adapt		
	Climate change	Engage and collaborate		
	Resource shortages	Plan proactively for greater resilience		
	Economic shocks	Identify risks		

making our city a great place to live, work and play

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