CREATING A SUSTAINABLE SUPER CITY

How to Accelerate Auckland

A guide for the new Auckland Council and Mayor to turn New Zealand’s first mega-city into a greater economic powerhouse – while improving its quality of life and environment

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By the

New Zealand Business Council for Sustainable Development

September, 2010
Our inspiration: Local, national, international expertise

This report is published by the New Zealand Business Council for Sustainable Development. Its member companies provide leadership in sustainable practice and development. This report has been prepared by contributing CEOs and other senior executives among many of our 58 member companies. It draws on their expertise and experiences both here and internationally and is a think piece, providing direction, based on a collection of ideas. It does not represent the policy positions of the Business Council or any of its member companies.

For some members, this includes developing sustainable development advice in as many as 30 countries and implementing it through a multitude of world-leading projects which have changed city and national economies and improved the lives of their citizens.

This report is a think piece bringing together many ideas. It does not represent a policy of the Business Council or its individual members.

Our Aims

The Business Council believes businesses should not only be profitable but also protect the environment and people.

We provide:

- **business leadership** - to be the leading business advocate on issues connected with sustainable development

- **policy development** - to participate in policy development in order to create a framework that allows business to contribute effectively to sustainable development

- **best practice** - to demonstrate business progress in environmental and resource management and corporate social responsibility and to share leading-edge practices among our members

- **global outreach** - to contribute to a sustainable future for developing nations and nations in transition.

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Table of Contents

Creating a sustainable super city 2
The First Four Steps 3
 How to put sustainability into the super city 3
STEP ONE 3
 One Plan for accelerating Auckland 3
 Build the consensus 3
 Call key decision makers to a One Plan summit for three days 3
STEP TWO 4
 Make the Plan 4
STEP THREE 4
 Quarterly Progress Reporting 4
STEP FOUR 4
 City-Central Government Alignment and Sign Up 4
How to make it happen with integrated policy making 4
 The new Mayor should lead, influence and regulate 4
 Assemble a team 4
 Accelerated Development Centre 4
 Assessment tools available internationally 5
Technology changes opportunities 6
 Integrating analysis of policy mixes on urban form 6
 Stop making decisions in silos 6
 Use new planning power 6
 Allow the silent majority to contribute by using the power of “and” 6
 Use prices to make doing the right things worthwhile 7
Background 7
 The new mega city world 8
 What attracts people? 9
 Some facts 9
Super city issues and opportunities 10
 Some issues and opportunities for the super city to investigate 10
 The super city’s levers 10
Some possible answers 11
Transport 13
 Freight 13
Some of the costs 14
 Travel demand management 14
 Congestion/ time of use pricing 15
 Coping with growing freight demand 15
What they say so far – John Banks 16
 Public transport 16
 Spatial plan 16
What they say so far – Len Brown 17
 Rail 17
 Traffic demand management 17
 Spatial planning 17
Greener cities 18
 If Munich can do it – can Auckland? 18
Some local & global initiatives that work 19
Getting the most sustainable and efficient use out of roads 20
What Whangarei could teach Auckland 21
What Canterbury could teach Auckland 22
Buying right: Smarter procurement 23
 Flexing $3 billion+ in buying power to save millions 23
 Smarter procurement consulting services for sustainability 23
What could the Super City save? 24
 Learning from North Shore City Council 24
 They can do it – why not you? 24
Efficiently manage the city’s own energy bills 26
 Lightening the city’s pollution load 26
 E-government 28
 Broadband and the web 29
How to put a smarter city plan in place 30
 Transacting through One Window 31
 Renewable energy – and lowering emissions 32
Promoting sustainable building 34
Waste management 36
 What the candidates say so far: 38
 What Aucklanders say about super city glass recycling: 39
Tourism 40
Coastal environment 42
 The new Auckland super city has 1600 kilometres of coastline. 42
 A framework for reporting cultural sustainability 43
The overall approach 43
APPENDIX 45
 Suggested background reading material 45
Creating a sustainable Super City

The Business Council puts forward a four step programme for the leaders of New Zealand’s first mega city to follow in its first 100 days.

The aim is to achieve long-term sustainable development, which will create new opportunities for:

• economic growth
• higher paid jobs with a future
• higher standards of living while
• improving the environment and
• improving the cultural and social environment.

It matters because an integrated approach to policy and development will:

• deliver the best balance between economic development and quality of life
• make the city more competitive internationally
• identify and deliver efficiencies worth millions to ratepayers
• attract new investment
• attract and keep skilled people and
• produce a more harmonious and safer community.

This report:

• suggests ways to deliver sustainable policy
• identifies some opportunities as a guide for policy makers and
• provides case studies from Auckland and other cities in New Zealand, as well as from cities across the world, to illustrate the major economic and quality of life gains which are possible.

New Zealand’s first and only super city is now competing with others in the Asia Pacific region and 450 mega cities worldwide. It is also competing in a world which will need to:

• ensure an extra 3 billion people live well by 2050 (when the world population will be 9 billion)
• be smart about how it uses natural resources under pressure, and
• compete in a low carbon world, which is emerging as an essential response to manage climate change.
The First Four Steps

How to put sustainability into the super city

Sustainability in Auckland should ensure economic development is matched with preserving or improving the city’s quality of life.

It therefore poses a challenge for the new council in that:

- it requires some level of agreement on what needs to be achieved over time (goals, targets and measures of progress) and
- an on-going means by which multiple goals are managed and monitored.

The temptation is to create yet another committee with sustainability as its purpose and no real ability to influence.

Sustainability progress will only occur when it is integrated into the council’s core processes.

Auckland has already invested in many efforts to build a consensus around a sustainable future. The 100 year scenario work, resulting in the Auckland Sustainability Framework (involving all councils in the region and the Government, assisted by Landcare Research)¹, and the Auckland Regional Economic Development Strategy (AREDS) produced remarkably similar findings. But they did not become the way councils thought about the future – and made decisions consistent with such a vision.

STEP ONE

One Plan for accelerating Auckland

We advise the new Auckland Council to call its new Mayor, councillors business and community leaders to a One Plan summit within 100 days of taking office on November 1.

The summit would produce agreement on what goes into One Plan to accelerate Auckland’s progress.

It should lead to integrated policy making which will help the country’s first mega-city generate hundreds of millions in economic growth and tens of millions in cost savings for ratepayers.

Build the consensus

When business wants wide buy in for a plan, it often uses an accelerated development centre to achieve it.

A number of consultancies have such processes available to use.

Call key decision makers to a One Plan summit for three days

WHO: A group meeting of the Mayor and all councillors and the best minds in business, Non Government Organisations (NGO’s), Auckland’s diverse communities (including iwi, Pasifika, Chinese and Indian communities), academia and consulting should meet to work on a shared vision for Auckland. The Prime Minister, appropriate Government Ministers and Auckland MPs should also be invited.

BRIEFINGS: They should be briefed with extensive pre-reading on issues like economic growth, population growth and diversity, trade trends, comparative data for other mega cities in the region (like Sydney, Melbourne, Perth, Brisbane, Singapore, and Hong Kong), education standards and lifestyle quality, emissions, water and air quality and transport, including congestion.

PROGRAMME:

Day One: Identify the issues and opportunities Auckland faces

Day Two: Look at the solutions and actions needed to get a step change in Auckland’s role as New Zealand’s only mega city

Day Three: Identify who needs to do what and by when to realise the vision.

This vision and consensus building event should occur within 100 days of the new council taking office on November 1, 2010.

¹ http://www.landcareresearch.co.nz/services/sustainablesoc/hatched/overview.asp
As Business Council member Deloitte says for this report: “The super city (Auckland Council) and its associated entities (CCOs) have the scale and position to lead, influence and regulate. As such the Mayor should seek to explore all three areas”.

**STEP TWO**

**Make the Plan**
From this the new Auckland Council, with support from its officials, will decide which parts of the vision it wants to adopt and prepare the plan which includes:
- task list
- participants
- time table and
- key performance indicators.

This should be put together by the Mayor’s Office working with the most senior council committee with control of budgeting and planning.

The annual and long-term planning cycle should also include a review of progress and check that resources available are aligned with the priorities identified. Council committees would be expected to operate within the framework or explicitly identify why it has departed from the overall vision.

**STEP THREE**

**Quarterly Progress Reporting**
The Mayor’s Office should issue a quarterly report on progress. With the spatial plan, these should form the key long-term documents for super city planning.

**STEP FOUR**

**City-Central Government Alignment and Sign Up**
At the start of a new Central Government term the new super city Mayor should propose an updated vision for Auckland with a set of its expectations of central Government for the next three years. This will form the basis for a negotiated agreement between the city and Government to align and maximise the city and country’s sustainable growth.

**How to make it happen with integrated policy making**

**Assemble a team**
According to IBM’s Institute for Business Value and others, no city is an island.

**Administrations** – at city level and elsewhere – are recognising the importance of “perpetual collaboration.”

To deliver the goals a city has set, city administrations will need to work seamlessly across their own organisational boundaries and partner effectively with other levels of government, as well as with the private and non-profit sectors.

The proposed structure of the new city’s social policy forum demonstrates a siloed approach and needs to be more inclusive of ALL the stakeholders who contribute to improved social outcomes in the city – business included.

Many issues that cities face will require significant collaboration among city and national levels of government. In addition to formulating new policies themselves, cities must be able to articulate the challenges they face to influence policies made elsewhere.

**Accelerated Development Centre**
The Mayor and city should consider creating an Accelerated Development Centre, similar to future development research centres supported by companies like IBM internationally, to:
- gather views and policy and implementation options for the new city and plan and
- research what core activities the super city should shed, retain or expand into

**The new Mayor should lead, influence and regulate**
As Business Council member Deloitte says for this report: “The Super City (Auckland Council) and its associated entities (CCOs) have the scale and position to lead, influence and regulate. As such the Mayor should seek to explore all three areas”.

The new Mayor, Auckland Council, its Council Controlled Companies (CCOs) and elected leaders need to join the dots between economic, environmental and social policies.

This will deliver truly sustainable policies and solve the major issues facing the city and its citizens.

It will also save them millions and improve their environment and communities.

Sustainability challenges are significant and interconnected.
• build a shared view of the future for Auckland by having the new council and stakeholders develop one plan for Auckland, including how its progress will be measured
• understand and deliver the goal for Auckland as a global, internationally competitive city while retaining a local feel in our communities.

An example of where this approach is already being put in place is the City of Parma, Italy. It has entered into a strategic initiative with IBM with the aim of creating a Smart City. “This strategic initiative, signed with IBM, allows us to create an Innovation Board.” said Pietro Vignali, Parma Mayor. “This Board has the mission of finding innovative citizen services solutions leveraging new technologies: from info-mobility to security, to social services. We are the first town in Italy to engage in this initiative and this puts Parma in the network of Europe’s most innovative capitals, like Stockholm and London.”

Assessment tools available internationally

To take advantage of how smarter city approaches can help advance strategies, city authorities and stakeholders need to understand how their city is performing today and where progress is being achieved in infusing intelligence into their systems. This calls for a systematic assessment of a city’s position in relation to its peers. Such an assessment can identify and help communicate emerging strengths and weaknesses. It can highlight where real progress is occurring and inform a plan for future improvements. It will help the new city prioritise actions.

This assessment will help gauge the city’s maturity and help inform new development plans. IBM and Siemens have developed assessment tools for this work internationally. Siemens has developed the European Green City Index which measures and rates the environmental performance of 30 leading European cities. It takes into account 30 individual indicators per city. These touch on a wide range of environmental areas, from governance and water consumption to waste management and greenhouse gas emissions. The Index is indicating strong correlations between factors like a city’s wealth and level of voluntary participation, for example, and its sustainable performance.

Siemens says, looking ahead, that cities have an array of options or levers to use.

Good governance is important.

This ensures improvement through a mix of:
• regulatory policy and incentives to encourage business and citizen behavioural changes
• setting efficiency standards
• preserving green spaces
• promoting affordable alternative means of commuting
• using new technology (with the city authority leading the way).

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According to Siemens, simply by improving building insulation, using energy-efficient lighting and appliances, and installing more advanced environmental controls in structures, London could move over one-quarter of the way towards its overall aspiration of reducing carbon emissions by 60% by 2025. Over a 20-year lifecycle, the upfront investments required would be more than paid back in reduced energy bills.

More advanced capabilities can go even further: Amsterdam’s state of the art waste-to-energy plant achieves high levels of energy efficiency that allow it to power more than three-quarters of the city’s households. It can even profitably extract gold and other metals from the resultant ash, while sending just 1% of the original waste to landfill.

Engaging and motivating communities within cities is also critical to delivering increased sustainability. Education and public awareness are important, giving people the necessary information to help them make greener choices. This can come in many forms and go well beyond the basics of publishing advice. For example, a number of cities in the index have rolled out water meters and smart electricity meters so consumers can quantify their own consumption and choose to be more careful about how much they use.

Citizens often lead the way, encouraging city leaders and others to embrace change. In Oslo, for example, early adopters of electric cars banded together and lobbied the city government to waive tolls and parking fees and allow access to the city’s dedicated public transport lanes. Whatever form it takes, this engagement is critical.
Using real time information on traffic, water and energy use, communication and spending patterns can create opportunities for improvements that could only be dreamed about by earlier generations.

Pervasive new technologies provide a much greater scope for instrumentation, interconnection and intelligence of a city’s core systems. Around the world, leading cities are putting in place smarter systems, such as Galway’s SmartBay advanced water management system, Songdo’s Wired City initiative or Singapore’s eSymphony transport system.

Integrating analysis of policy mixes on urban form

Significant work has been done in the UK and Canada, for example, on addressing transport carbon reduction by integrating all policy packages into a single accessible computer model. In Canada this is revealing cuts in travel demand of 20% and 40% may be achieved through a mix of policies aimed at producing urban form which significantly reduces the demand for private car travel. Establishing policy targets for carbon reduction based on delivering quality of life conditions such as improved air quality and emissions reduction can drive this form of analysis and outcomes for cities.

Stop making decisions in silos

The whole can be greater than the sum of the parts. Decisions until now have often been made in “silos” like economic development, planning, transport, community development. Siloed decision making can produce outcomes which, in retrospect, are seen not to have served our needs well.

In this think piece we cite the example of the Auckland, and Manukau city councils opting to co-mingle paper, glass, plastic and other recyclable material in kerbside collections. This lowers their costs and reduces health and safety issues. However, the value and marketability of the recyclables such as paper and glass is reduced due to contamination. Only 30 to 40% of some glass waste is able to be remade into new glass products. Winegrowers then buy more bottles not made from recycled glass, and the carbon footprint (emissions created during production) goes up. This may result in Auckland wine bottling jobs being exported to Britain.

While this decision helped keep the rates down, it increases costs for an Auckland-based export business, threatening its competitiveness off shore and denying the community and other businesses the opportunities from recycled paper and glass. We understand it is now possible to handle and process smaller glass sizes, to achieve a 75% yield.

Thinking sustainably creates win-win-win outcomes. The Mayor of the new super city in particular has an opportunity to lead integrated policy making across all functions to maximise economic, environmental and social development opportunities.

Use new planning power

Greater Auckland’s Mayor and Council have significant new powers to achieve the opportunities listed above.

As a starting point, the Auckland Spatial Plan is a new document the purpose of which is to contribute to social, economic, environmental, and cultural well-being through a comprehensive and effective long-term (20- to 30-year) strategy for Auckland’s growth and development.

This replaces earlier plans from the regions’ eight existing councils.

It will determine what is preserved, changed and developed.

As part of the process of developing the spatial plan, the Mayor can lead the development of a shared view which will determine the future shape of Auckland.

The Mayor’s office has an opportunity to:

• bring in people who can inform on any issue thought critical for the future
• identify the main issues and what the city should be trying to achieve
• set out the key performance indicators – and the means of getting there (e.g. improved mobility, air quality, economic competitiveness and social cohesion).

This report identifies some initiatives which, if applied at scale, will deliver faster, lower cost, more efficient results for citizens and businesses.

Allow the silent majority to contribute by using the power of “and”

An integrated approach to decision making at the top is needed to make sure decisions are made for the whole region, while allowing people to have a say in their neighbourhoods.

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3 Business Council member Transpacific Industries Ltd
Business Council research over the past four years has consistently found that, for our future, about:

- 5% of people either believe just economic development or preserving the environment alone are all important
- 20% are too busy coping with life to have a view
- 70% want a balance – and believe it is possible to have both economic development – and protect and improve their quality of life.

Usually those with extreme views are most motivated to have their say on city plans. The new city needs to use new social media, polling and other tools to ensure the vast bulk of the population is engaged and its views heard at a time when these views can influence policy.

Use prices to make doing the right things worthwhile

Putting prices on externalities (the costs created by people engaged in various activities but currently born mostly by the community) can provide strong incentives for consumers, ratepayers and business to act more sustainably.

Some examples include:

- traffic congestion charges
- increased pricing for waste to landfills vs. recyclable waste, and
- limitation of air and water pollution and other emissions via pricing schemes.

While measures to price externalities are typically a Central Government intervention, the concentration of issues in Auckland makes local leadership important.

For example, if Auckland had waste-to-landfill charges at Canterbury’s levels, the city could afford a regional composting facility – now common in most high performing cities. This would result in some food waste from accommodation providers, restaurants, supermarkets and the food processing industries diverting from landfills, providing an opportunity to create new recycling businesses and jobs, provided a balance was struck between these new opportunities and others presented by environmentally friendly products being produced by landfills. Overall, sustainable uses for waste streams need to be found.

Similarly, charging water users directly, rather than through rates, reduces consumption, provides reasons to conserve water, report leaks, install rainwater tanks and means less needs to be spent on water infrastructure, for new sources of supply or managing stormwater.

In October 2010 Aucklanders will elect their first super city Mayor, council and local boards.

Business leaders believe the new Auckland Council and its leaders can provide significant leadership and influence to deliver a city with strong economic growth – and a better quality of life.

Chief Executives who are members of the New Zealand Business Council for Sustainable Development, whose companies’ annual sales of more than $50 billion equate to about 43% of gross domestic product – believe this is possible.

In April and May 2010 they invited the then two declared super city Mayoral Candidates, John Banks and Len Brown, to discuss the creation of a sustainable super city.

This report is a guide for them and other candidates and officials on getting the most from Auckland, not only for Auckland but for New Zealand.

It includes some of the two candidates’ thoughts so far, case studies and policy views from Business Council members – to illustrate what is possible if sustainability is put at the core of policy – and applied at scale by the council, Auckland’s citizens and businesses.

These include smart ways to:

- build and manage infrastructure
- meet the city’s transport needs
- improve air and water quality
- boost tourism
- clean up the coastline
- lift productivity, profits and the quality of life across the entire region.

Mayoral candidates John Banks and Len Brown have subsequently invited the Business Council to join the workstreams within their offices if they are elected. It's an opportunity which our CEOs and their highly expert senior executives will accept.

The Business Council commends this report to all super city candidates and officials.
A century ago fewer than 50 cities in the world had more than 1 million people. Today there are 450.

On November 1, 2010, the amalgamated Auckland will become one of them.

According to the IBM Institute for Business Value, because of their growth in numbers and population, cities are taking their place on the world’s centre stage – with more economic, political and technological power than ever before. They are becoming hubs of a globally-integrated, services-based society.

A country’s major city also offers opportunities for scale and scope that should make it a driver for whole country.

Auckland currently lags as a driver for tourism and other exports.

But with greater economic and political influence comes greater responsibility.

Cities like Auckland have a number of core systems, with different networks, infrastructures and environments, to deliver key functions: city services, citizens, business, transport, communication, water and energy.

These systems need to interconnect, to provide optimum performance and efficiency.

As IBM notes: “Each element of this ‘system of systems’ faces significant sustainability challenges and threats”.

A sustainable super city is one which facilitates economic growth, protects its environment and provides social equity and cohesion – delivering a good quality of life.

The threats:

For Auckland there are major sustainability threats.

Like mega city dwellers throughout the world, Aucklanders need:

- clean air and water
- reliable electricity supply
- mobility – for people and freight while putting as little strain as possible on the environment and budgets.

Auckland shares many features of other mega cities and has its own unique characteristics:

- traffic congestion
- air pollution
- low population density
- ageing infrastructure
- pockets of social and other deprivation
- predictions of high population growth
- ageing population
- multicultural population
- significant generator of the national GDP and taxation revenue for Central Government
- public safety and security problems
- 1660 kilometres of coastline, some of it at risk (this figure is not quite specific to Auckland because of our geography)
- inefficiencies in government
- significant annual waste mountains
- huge capital funding needs to build infrastructure faster – to stoke up an economic powerhouse.

Creating a sustainable super city

“The 19th century was a century of empires, the 20th century was a century of nation states. The 21st century will be a century of cities.”

Wellington E. Webb, former Mayor of Denver, Colorado
What attracts people?

People are attracted by better:

• job opportunities
• low crime
• good weather
• good cultural facilities
• a positive attitude to business
• good health and education facilities
• a safe and cohesive society, and
• physical environments and access to nature compared to where they come from.

Some facts

Auckland region (the new super city):

• covers 500,000 hectares
• has more than 1.3 million people
• is New Zealand’s fastest growing region
• has the country’s second youngest population
• will have 340,000 more people by 2016 (compared with 2005) and 440,000 more by 2021 (the equivalent of adding another Greater Wellington)
• possibly 2.3 million people by 2046 (when the Aucklander born today is just 36 years old)
• has 15,000 heritage sites
• has 1600 kilometres of coastline
• a quarter of all of New Zealand’s freight movements
• the country’s busiest sea and air ports.

Says Business Council member Deloitte for this report:

“As the country’s biggest economy, the success of Auckland will impact the success of New Zealand. Therefore, it is imperative that the super city delivers all it can to build the local economy and thereby prosperity. As a multicultural society, Auckland itself has an innovative breed of business people, many of whom have pioneered ideas and developed new ways of doing business which are finding success on the world stage.

“At the same time as all this, sustainability is increasingly becoming an issue both on the global and local stage. There is no doubt that New Zealand lags Europe in particular, and it is this challenge that the Super City can seek to play its part in delivering.”

Compared with New Zealand overall, residents in the council areas becoming members of the super city report much the same quality of life:

How would you describe your quality of life in New Zealand?

All New Zealand:

A. Excellent 15%
B. Very good 40%
C. Good 28%
D. Fair 12%
E. Poor 4%
F. I really don’t know 0%

Sample size 1215, weighted. ShapeNZ, February 2010

Super city residents

A. Excellent 15%
B. Very good 40%
C. Good 30%
D. Fair 12%
E. Poor 3%
F. I really don’t know 0%

Source: ShapeNZ February 2011 Quality of Life survey

But the quality of life concerns of Asians, Maori, Indians and low income earners is an issue for Auckland and the country:

The February 2010 Quality of Life Survey by ShapeNZ for the Business Council found that those most likely to rate the quality of their lives as “fair” or “poor”:

• have incomes of less than $20,000 a year (20% fair + poor rating)
• work in personal and other services (25%), are not in paid employment (22%) or work in communications services (23%)
• are Asian (25%), Maori (22%) or Indian (21%). This compares with 12% of European/Pakehas
• are single parent families with three or more children at home (34%) or have extended families (25%).

“The issue around sustainability is often that it is expressed in terms of congestion, social impacts, waste, greenhouse gas emissions and natural resources usage. To clearly see the importance of sustainability, it is therefore vital to link business success and prosperity with sustainable issues.”
Some issues and opportunities for the super city to investigate include:

1. Auckland is the one New Zealand city which can have the scale and scope to compete effectively with other cities in Australia and the rest of the Asia Pacific region.
2. The super city is designed to make cross regional cooperation easier and most Aucklanders see value in that. But many also feel their neighbourhood identity is threatened by the changes. Creating a cohesive Auckland and getting the balance right is a key challenge for the new structure.
3. Aucklanders, like other New Zealanders, want economic growth and a good quality of life yet they often face council-led barriers when they want to become more sustainable by doing things like installing Wi-Fi and high speed broadband; rainwater tanks, or solar or wind generators at home. These should be permitted (and even rewarded) activities bringing benefits in lower power, water and waste water bills, and income from selling household-generated power into the grid.
4. Auckland does not manage its busiest transport corridors well to get more goods and people to where they want to be without delay. We need to use prices more and queues less to manage congestion.
5. Auckland does not have a public transport system suitable for a low density, diverse city that suffers from severe peak period congestion.
6. Auckland is New Zealand’s main port of arrival and departure. The challenge is ensuring those arrivals stay in the region for longer, and with increased spend. Facilities such as a dedicated cruise ship terminal and a national convention centre will support future growth.
7. Auckland is not proactive in encouraging businesses that have a future in a world where consumers value sustainability.
8. Auckland is not doing enough to adapt to a world where we pay more for energy, waste, water and greenhouse gas emissions.
9. Auckland needs to be more attractive for talented migrants so they can settle and become part of a dynamic learning workforce. In doing this it needs to consider reforming its rigid urban boundaries which make housing less affordable and poorly performing schools which lock some migrants along with other residents into poverty.
10. Auckland’s air quality: We need to aggressively improve air quality by encouraging the retirement of our worst polluting vehicles, helping households move to lower emission heating and investigating a region wide cap and trade scheme for air pollutants coming from business.
11. Auckland needs to embrace a low carbon economy and engage, educate and incentivise its residents, businesses and visitors to do the same.

The Super City’s levers

The Super City can use these levers to boost economic development, jobs and incomes and deliver a higher quality of life:

- the new spatial plan and one plan to replace the existing regional plans and using the core of sustainability as the process for integrating the current ‘silos’ of planning and rating policy
- using development levy rebates or applying new incentives to encourage more suitable buildings and sub divisions
- attracting and growing leading companies (as it did with Air New Zealand and Fonterra. Where are the next ones?)
- attracting and keeping talent – from global chief executives through to new-start up innovative businesses based on a good standard of living and great quality of life
- using local government procurement to support sustainable exporters
- a major international conference facility as a magnet for tourism, education, research and business
- preserve valuable land forms while being flexible on urban boundaries to ensure homes aren’t too expensive
- better use of existing roading infrastructure
- public transport that works in a low-density city
- effective co-ordination of sea and air ports and road and rail corridors
- prices on water, noise, air pollution and water degradation (so users meet the real costs – the externalities – currently shared among all citizens.) This will drive new investment, behaviour change and efficiency
- using pro-active migrant absorption to make Auckland an internationally known city.
which uses it links with China, India and the Pacific. Migrants who settle well, stay and invest and earn more

• manage its waste streams better to cut pollution, costs and develop new recycling-based businesses
• plan for a digital city: one wired to facilitate commerce, increase productivity and drive other cost-saving efficiencies, like reduced commuter times because more people can work from home and cut work-related travel
• sustainably develop its tourism industry to ensure Auckland remains a preferred visitor destination
• continue to invest in business-lead research and innovation and develop our knowledge based export sector
• making long-term decisions on its air and sea ports
• making major performance improvements in its new and existing commercial buildings and homes.

Some possible answers:

• have priority freight and high occupancy lanes on all major road corridors
• create and consolidate priority regional freight hubs on the city’s northern and southern fringes
• link the airport directly with the CBD by dedicated transit road and rail corridors
• provide a new transport link across the isthmus north to south
• optimise traffic light sequencing across the city to avoid delays
• review the commuter train strategy to see if it really is the lowest-cost, lowest emission form of public transport for Auckland and investigate a mini bus hub and spoke system, linking with major transit corridors offering door-to-door service that most can order by a telephone text message. This home to work or education service will also reduce the need to park cars at your destination
• move to water charging across the whole city, not just Metrowater area to encourage conservation and better on-site use and treatment
• roll out high speed WI-FI and broadband across the whole city
• integrate migrants with work place English teaching, affordable homes and effective local schools
• relax rigid urban boundaries to help lower housing costs while preserving high-value green spaces and co-ordinating major and essential infrastructure roll-outs and funding (Broadband, public transport, three waters and essential services) learning from unconstrained growth in Australia and its current practice of having co-ordinated infrastructure plans that support smart growth. Factors which affect housing affordability, other than boundaries, also need to be considered
• introduce time-of-use congestion charges for users of priority lanes where alternative routes exist, to cut congestion, remove costly bottlenecks and boost mobility and productivity
• require a turnaround programme for under performing schools that parents drive their children away from, increasing traffic congestion
• encourage all schools to have a virtual school bus and stagger educational institution starting times to flatten current traffic peaks
• investigate a public private partnership (PPP) to operate waste transfer stations and landfills in the region similar to the Canterbury model that would enable resource recovery and recycling enterprises
• provide council loans for upgrading insulation, heating or installing storm water tanks, paid back with a rates surcharge
• use the city’s own procurement to lead in supply chain management and support firms innovating to export better sustainable goods and services
• promote competitive feed in tariffs (payments to households and others) who supply wind and solar power into the city’s grid
• accelerate urban regeneration partnerships at existing sites with sustainable KPIs in place – e.g. New Lynn, Tamaki, Flat Bush
• security of water supply – constantly seeking to deliver operational efficiencies and lower life cycle costs in water supply and wastewater treatment and future proofing our supply for Auckland

‘Sizing Up the City: Urban form and transport in New Zealand’, published by the New Zealand Centre for Sustainable Cities includes ShapeNZ research showing 54% of New Zealanders think that urban limits are necessary so that cities develop more sustainably (15% disagree).

By 2 to 1, New Zealanders thought councils (rather than market forces) should have the key role in defining the limits of the city. Many young adults and older New Zealanders have a preference for living in the city, while families with children strongly prefer the suburbs. However, underlying this is a growing preference for mixed use communities where access to work and facilities is easier. The possibility of rising petrol prices is a factor in some people’s choice of where to live.

• look to make major gains from efficiently managing energy: Excluding Watercare Services, the new super city will spend $35 million a year on energy (close to $30m a year on electricity alone). An investment of $500,000 in skilled staff and advice is likely to produce savings of between 10 to 15%, or between $3.5 and $5.25 million a year. Technology changes in energy consuming equipment evolve at a rate of about 10-15% a year. The Auckland Council will also have around 92,000 street lights, an interest in some landfill gas to electricity plants and many other specialist public assets such as swimming pools, water and sewage treatment plants, and public buildings where opportunities for reducing energy costs to the ratepayer continue to become viable as technology advances and we continuously discover newer ways of managing our energy more efficiently.

• enhance Aucklanders’ understanding of sustainable development in the region
• get behind migrant communities’ business associations to develop business and other links (e.g. with China, India, South Africa)
• consider a bylaw requiring any dwelling being sold or rented to have a performance rating. A new residential rating tool, being launched soon, gives consumers information on how well a dwelling performs, including energy and water use and warmth. This will allow consumers to choose healthier and more energy efficient homes and reward dwelling owners who upgrade their homes.

Super city loans for warmer, healthier homes

A July, 2009, ShapeNZ survey of 331 home owners and landlords within super city boundaries finds more than half think their local authority should offer loans for home insulation, paid back through homeowners’ rates.

Should your local authority offer loans to local residents to improve home insulation and heating, to be paid off through the homeowners’ rates?

A. Yes 54%
B. No 27%
C. Don’t know 19%

Getting the best from our migrants and school leavers

There is overwhelming public agreement that skilled migrants have made an important contribution to New Zealand:

• 91% agree on this
• 66% support at-work internships for skilled migrants to help them learn how to work in the New Zealand work place.
• Eight out of 10 believe skilled migrants can add to social diversity and improve New Zealand’s way of life, and
• more believe that the effects of recent overseas migrants entering their own communities have been more positive (40%) than negative (18%)
• there is a marked reluctance (70%) to reducing English language standards for skilled new migrants.

Over 90% backed more flexibility in allowing students skill training outside their school gates,
• 82% support allowing schools to run “Trade Academies” and
• 81% think school-based apprenticeship schemes should be piloted. Several of these proposals were in National’s 2008 employment policy. There is also support for major new investment to improve the qualifications of Maori and Pasifika students.

Auckland is home to the premier university in New Zealand, and together with other tertiary institutions needs to continually drive to strengthen its attraction for students to study in Auckland.

Sample size 372, weighted, ShapeNZ February 2010.
Transport

The Auckland region needs to “accommodate population growth, minimise the effects on the environment and ensure the region is economically successful and enjoyable to live in”.


In 2005 the Auckland Regional Council’s 10 year Transport Strategy noted the region had $11 billion to spend over the coming decade. It recommended spending

- 62% on roads
- 34% on public transport and
- 4% on travel demand

This was to cope with 195,000 more cars and a 25% traffic increase by 2015.

The region had 646,000 private cars in 2001:

- 334,000 were used to drive to work
- 78% of all journeys were by car (compared with 68% in 1981)
- by 2021 the number of extra person-trips a day will grow by 200,000 (over 2001) to reach 600,000
- most trips are to commute from hub centres (like Waitakere and North Shore) to work and study in the CBD, Ponsonby, Newton, Newmarket and Parnell.

Freight

Nearly all of the region’s more than 250 million tonnes of freight transported each year goes by road:

- the two biggest economic sectors, the wholesale and retail trade and manufacturing, which also provide the highest number of jobs (23% and 17% respectively), rely heavily on freight transport
- there are more than half a million freight trips across the region by road every day
- the average trip is 10 kilometres
- the projected increase of freight in Auckland/Waikato/Tauranga region is to double current levels by 2020
- the supply of cities is strongly dependent on movement of containers and Port of Auckland carries New Zealand’s largest percentage of containers.
Some of the costs

Auckland's ARC have done some good work in monitoring NOx levels.

Cause - New Zealand's old car fleet

Nitrogen Oxides (NOx) in Auckland

Exceeds guidelines/standards
- Causes increased lung infections
- Trend steady or increasing
- Expect slow decrease

Vehicles also produce 60 to 80% of the super city's air pollution. An estimated 250 people a year die prematurely from exposure to microscopic particles in emissions in the Auckland region.

The National Energy Conservation Strategy sets a renewable, cleaner fuels target for the region of 2 peta joules - the equivalent of using 16 million litres of bio diesel a year.

So the new Mayor and super city councillors need to look at incentives to:
- change to less polluting, lower-emission fuels
- provide infrastructure for new clean energy sources (including plug-in recharging stations, special parking and other incentives for the coming electric vehicle fleet)
- policies for the super city and its CCOs to exercise their multi-billion spending power to buy sustainable products and services (for lower cost over their whole life, and better environment, social and economic outcomes)
- encourage central Government to provide incentives to take the older diesel trucks, buses and cars out of the Auckland fleet
- press central Government to only allow importation of used vehicles which meet the current Euro standards, or equivalent, for new vehicles
- move the public transport bus fleet to cleaner fuels
- dramatically reduce the number of trips taking children to and from school. (Half the trips during the morning peak are less than 5 km. 18% are for less than 2km, 64% are by car – and most to drop children off at school). Programmes to walk children to school reduce congestion at least cost, involve more people in their communities and are healthier for children
- apply traffic-light co-ordination management region wide to reduce congestion and pollution
- support intermodal logistics and freight management solutions to manage the current and projected volume of containers being moved through the Port of Auckland.

Travel demand management

While Auckland has enjoyed some new travel demand management tools, like lights controlling motorway on ramps, signs reporting trip times and motorway events, web traffic cameras, an integrated traffic management system and projects like the Northern Bus way, the question of road pricing has been largely left to one side.

Some years ago the Energy Efficiency and Conservation Authority (EECA) commissioned a study on co-ordinating traffic lights across the region. It found the benefits were massive, but the politics across seven cities were too difficult. With one city now, let’s get on with it.

The region is literally “running out of road” – yet some of its roading network does not run anywhere near its optimal capacity.

Pricing can have a major influence on reducing or shifting demand, and reducing congestion. Tolling and congestion charges have been successful in Singapore, London, Stockholm and Oslo:

- Singapore introduced the world’s first significant road pricing initiative to control entry into its central business district in 1975. On-board tags are used to identify vehicles
- zone charges reduced congestion in London by about 30% and in Stockholm with time of use charges by 25%, while both cities enjoyed a 10-20% cut in fuel use and road accidents

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6 National Energy Conservation Strategy
7 Megacity Challenges, GlobeScan, MRC McLean Hazel, sponsored by Siemens.
• charging brought in net revenue of 174m pounds in 2006-2006 for the London Transport authority while in Stockholm it boosted inner city retail by 6% and generated new revenue streams\(^4\)
• Orange County, California, and Melbourne and Sydney have toll roads.

Setting charges to affect congestion at certain times is different from imposing toll zones. Zonal charging was earlier considered by Government officials for Auckland and was received negatively.

Coping with growing freight demand

Auckland needs to pursue time-of-use road pricing, also known as congestion pricing.

This is a way to lower traffic peaks and use our roads more effectively. If toll road users at peak hours are charged more, those with a choice will use the road earlier or later than the peak. While roads are paid for through licensing fees, road user charges and petrol levies they don’t help us manage congestion at a particular time it occurs.

If we have congestion it makes sense to ensure the road is being used by those for whom it has most value at that time.

Electronic management also means charges can be altered or removed as soon as congestion eases. It has been shown that congestion pricing dramatically changes the times at which some people travel, because the travel is not necessary at peak times.

Not every road user will pay, only those who chose to use the tolled and faster lanes during the times congestion pricing is being charged.

Auckland needs to consider trialling innovative ways to provide residents with personal mobility equivalent to their current use of a car.

Coping/time of use pricing

The super city needs policies so it can cope with growing transport and freight demand, and raise enough extra capital to complete major new initiatives earlier than 15 years from now. Policies like:
- extending rail for freight use, keeping some trucks off the roads
- an on-demand mini bus system to pick up people from where they are and deliver them to main corridors and public transport systems (road and rail) so they can complete journeys to final destinations within two to four transfers. (Unless you can achieve 30,000 people moving in one direction in an hour rail is inferior, on cost and environmental grounds, to buses or mini-bus systems for commuters)
- more use of dedicated freight lanes
- tolled access to dedicated freight and bus lanes use for high-occupancy private vehicles
- a second harbour crossing (bridge or tunnel)
- new road traffic demand management measures to allow the region’s freight lifeline to flow efficiently and at far greater volumes, specially during peak periods
- complete major new transport infrastructure investments earlier and fund them through special long life 30-year bonds and new Public Private Partnerships (PPS)
- encouraging the take up of electric vehicles.

At the moment, most vehicle makers expect the petrol or diesel electric hybrids to be the prevailing transitional technology as the energy density of diesel and petrol cannot yet be matched by electric batteries.

By the end of 2010, General Motors will have the Chevrolet Volt “plug in” hybrid car in full production in the USA. Also, Nissan will have their Leaf electric vehicle being produced in Japan, with production to begin in several other countries within the next two years. A factory in Tennessee is being re-tooled to produce up to 150,000 Leaf all-electric cars per year for the US market, starting in 2012.

These two companies are investing billions of dollars in those projects and are taking a massive gamble that their product will sell in large numbers.

Nissan has been predicting that all-electric cars will represent 10% of global car sales by 2020, but other automobile manufacturers and consultants foresee a much smaller global market share for electric vehicles.

In the US, one of the “drivers” for production of electric cars is a requirement by the Air Resources Board in the State of California that for model years 2012 to 2014, the largest car makers by volume in California must sell when combined, about 60,000 plug-in hybrid vehicles and all-electric cars.

Portugal, the Netherlands, UK and Ireland have been chosen as launch venues for the Leaf, in part because of government incentives (typically worth NZ$9,000 per car).

These countries were also picked because of plans to offer a re-charging infrastructure for electric cars.

Christchurch City Council and Nissan have signed a Memorandum of Understanding over providing a recharging infrastructure for electric vehicles.

Auckland and other cities need to factor in a future with a potentially large electric fleet of both cars and trucks. Auckland has both the scale and capacity to deliver infrastructure to enable it to be an early adopter of electric vehicle fleets.

\(^4\) A Vision of Smarter Cities, IBM Institute for Business Value executive report.
“Since we landed a man on the moon the population of the world has doubled. There is a very realistic expectation that a majority of the children born at Auckland hospital today will live to more than 100. We owe it to ourselves and we owe it to the globe to make a difference.”

What they say so far – John Banks

Super City Mayoral candidate John Banks, speaking to Business Council CEOs on April 21, 2010, on creating a sustainable super city:

Public transport

60% of North Shore residents don’t work on the North Shore – they live there and work elsewhere. This is the second most spread city in the world bar LA (Los Angeles), there are more cars in Auckland than any other city in the world except LA per capita. People don’t live within cooee of a railway station.

“We have to get people out of their cars and into public transport… integrated public transport.

“We have to complete our motorway network. But never let it be said that the Northern Bus way wasn’t a success. This dispels the myth that middle class citizens will not catch a bus. I catch a bus - $3.50 from the Britomart out to Mission Bay... not a bad ride.

“I am committed to sustainable transport choices including:

- the electrification of rail
- the inner city rail loop that will make the CDB accessible to 370,000 people by train trips of 30 minutes or less
- a third harbour crossing which I foresee being a tunnel. But also access for cyclists and pedestrians across our existing harbour bridge.

“And I’m prepared to join in a partnership with you for a greater Auckland that recognises your strengths and your love of the place and builds on a sustainable Auckland around a spatial plan that we need to be committed to.

Spatial plan

“We need that spatial plan and in my office at the super city mayoralty will be someone very smart that knows more about this than I do, that will be overseeing the implementation of that spatial plan. So that we can protect the south, so that we can protect the northern borders, for what they are. They add a lot of value to (our) tourism product.”
Super City Mayoral candidate Len Brown, speaking to Business Council CEOs on May 26, 2010, on creating a sustainable super city:

**Rail**

*Three key projects that I want us to run out and soon:*

- Firstly, CBD rail to the Airport. I want to see that infrastructure in place. We are going through the designations now, the early stages of – for me, we need to bring that project forward, deliver it in seven years.
- Secondly, inner-city loop. To finally connect up our suburban rail network. It’s been a long time coming, plans are well poured, we need to deliver that with pace also.
- Thirdly, electric rail, Pukekohe through to Orewa – straight through the harbour.

**Third harbour crossing**

(New harbour) tunnel or bridge? The North Shore people say tunnel, most of the work thus far is tunnel. I am interested in your feedback on that. It needs to happen – 7-10 year time frame. Steven (Joyce, Minister of Transport) is talking about the fact that the bridge will not be sustainable in 15 years. Why wait? If we’re going to move as a city, if we are going to internationalise ourselves and be the spearhead of a country into the international market place, the concept of tying the whole region together with a great rapid rail system is critical to that. It’s a $4.5 billion project, give or take. We’ve got some decisions to make about how we fund that. My view is that we can do through PPPs (public private partnerships) if the community is comfortable with that. I want to hear your feedback on that.

**Spatial planning**

“I want to use spatial planning to better layout our city, link workers to their places of business, and students with their classrooms. Getting our urban form right is critical to increasing people’s positive perceptions of our city. I want to see consolidation of business and residential around primary transport routes to encourage the better utilisation of resources, and more public transport usage. We are seeing that in Newmarket with the major transport developments, here in Britomart Peter Cooper has got extraordinary plans for intensification development of a commercial, retail, residential hub. Down here in the CBD area, in Papatoetoe and Manurewa, it’s the same in the South, and Bob and Waitakere City Council have got a $200 million to $400 million project to intensify around their public transport hub in the New Lynn town centre. This is the way for us to go forward. Up, down, but also acknowledging that at some point we need to stretch out and continue our growth.”

**Traffic demand management**

“I can see smarter traffic demand management. We’ve just opened a new traffic op system on the Shore. It is brilliant to see that. Now we’ve got 100 cameras around our motorways giving us complete 5 minute updates in terms of traffic movements. I wished I’d had my GPS on this morning – it would have helped me somewhat. We can take that technology and extend it well beyond where it is at the moment: Every car’s GPS system connecting into every car’s GPS system, and commercial traffic.”
Greener cities
If Munich can do it – can Auckland?

Business Council member Siemens, an international leader in delivering solutions to create sustainable cities, says:

“Climate protection must begin in the cities. Seventy-five percent of the energy used worldwide is consumed here and 80 percent of greenhouse gases are emitted. Half the world’s population already lives in cities today; it will be 60 percent by 2025. As the company with the world’s largest environmental portfolio, environmental research activities with a budget of about 1 billion to date, and about 14,000 “green” patents, we will do our part to meet this global challenge.”

Siemens’ study on making the Bavarian capital of Munich a sustainable city found:
• Munich can cut its CO2 emissions by up to 90 percent by mid-century without impairing the quality of life for its inhabitants. Using a specific model urban district, the analysis concretely demonstrates how the transformation to a virtually carbon-free metropolis can be accomplished in terms of infrastructure and technology. Key levers for cutting CO2 emissions are high-efficiency energy applications, in particular in buildings; infrastructure modifications in the areas of heating, electricity and transportation; and a transition to renewable and low-carbon energy sources wherever possible.
• a major city like Munich can not only meet but also exceed the target, set by EU environmental ministers, of reducing annual global greenhouse gas emissions by 50 percent to less than two tons per person by 2050 compared to 1990.
• the study also shows that transforming a city into a virtually carbon-free urban environment will be a major challenge – one that can only be mastered if achieving this aim is a top priority for all participants: decision-makers, bureaucracies, utilities, urban planners and, particularly, investors and residents. Hep Monatzeder, the city official responsible for climate protection, looks at it this way: “To achieve our ambitious CO2 goals, Munich residents will have to be supported and encouraged, for example, by financing and remuneration strategies as well as by targeted information campaigns to invest more consistently in efficient and low-carbon technologies and to increase the use of eco-friendly means of transportation”
• Monatzeder adds: “It will be one of our key responsibilities as government leaders to make the advantages and financial benefits of energy-efficient technologies even more transparent and to remove existing impediments to their successful implementation.”

Munich: The right collaboration, policy mix on infrastructure, transport and energy could deliver 90% carbon emissions reduction by 2050. (Photo Maveric2003)

a “Sustainable Urban Infrastructure: Munich – Paths toward a Carbon-Free Future.”
10 Further information on the study “Sustainable Urban Infrastructure: Munich – Paths toward a Carbon-Free Future” is available on the Internet at www.siemens.com/sustainablecities.
Some local and global initiatives that work

Other sustainability initiatives have already delivered economic and social value for the super city and other cities:

From Business Council member IBM:
Interconnection creates links among data, systems and people in ways not previously possible. In 2009 more than 1.6 billion people use the Internet. Soon the world will be populated by more than a trillion connected things such as cars, appliances, cameras, roadways and pipelines, collectively creating an ‘Internet of things’.

Intelligence – in the form of new kinds of computing models and new algorithms – enables cities to generate predictive insights for informed decision making and action. Combined with advanced analytics and ever-increasing storage and computing power, these new models can turn… mountains of data… into intelligence to create insight as a basis for action. For example, statistical models with time-dependent data feeds to predict traffic flows can be used to adjust and optimise congestion pricing according to need. 11

A new generation of solutions is emerging and can be applied against virtually any of a city’s core systems.

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CASE STUDY: STOCKHOLM

Dynamically priced, time-of-use, congestion charges for cars entering Stockholm, reducing inner city traffic by a quarter while boosting inner city retail by 6% and generating new revenue streams.

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11 How Smart is Your City, IBM Global Business Services report 2009.
As society becomes more urbanised, the challenge of balancing the needs of different transport users becomes more complex.

Most urban arterial transport corridors are multi-modal - the road space is shared between public transport and private vehicles. Auckland’s roads and public transport are both publically funded, but are we asking the right questions to get the most sustainable and efficient use out of the road network?

CASE STUDY: BECA
How a swipe card could see bus lanes move more people than car lanes

A recent pilot study conducted by Beca and ARTA found that about 50% of all peak travellers on Auckland’s Dominion Road are using public transport. But how well do we understand the positive contribution public transport is having on our road network? The research project started with car-centered performance metrics, and developed these to look at the efficiency of the corridor to move “people” (rather than just looking at cars). This involved creating a synergy of data from a variety of sources including ticketing information, GPS and road volumes.

The result was a method for assessing the efficiency of the corridor as a whole, as well as the contribution made by both public and private transport to its overall efficiency.

From this it was possible to demonstrate that:
- public transport contributed significantly to the utilisation of the study corridor
- often more people travelled on public transport than in cars
- by providing people the option of public transport, it is possible to improve the operational capacity of arterial roads and in doing so benefit all road users
- the single largest drain on the throughput of the corridor was the boarding and alighting times for public transport.

If this were to be reduced (e.g. through a swipe on - swipe off system) the bus lanes on Dominion Road would actually be more efficient in moving people than the adjacent car lane.

In the right environment and with the right funding, public transport could be helping move more people more efficiently than would ever be possible with cars alone.

The project team is keen to look at other corridors. It has expressions of interest from Christchurch and Wellington to see if it is possible to use the new performance metrics to study the operation of multi-modal corridors in those cities.

New Zealand owned and Auckland-based Beca has a substantial Asia Pacific footprint, employing over 2,400 staff in 20 offices across the world.

Working in four key markets, Industrial, Infrastructure, Buildings and the Public Sector, Beca designs and supervises projects delivering engineering services, planning, project management, applied technologies and valuation services, architecture, GIS and surveying, cost estimating and asset management. In the last five years, Beca has won more than 60 awards and is ranked 74th in the Top 200 International Design Firms in the 2008 Engineering News Record Magazine.

Recent projects include the Marina Bay Sands in Singapore, Sky Tower in Auckland and Macau Tower in China, Victorian Desalination project in Australia and the Victoria Park Tunnel in Auckland.

The Auckland Regional Transport Authority (ARTA), in conjunction with its partner Thales and its funders the New Zealand Transport Agency (NZTA) and the Auckland Regional Council (ARC), has signed a contract to deliver a super transport ticket for Auckland. The ticket will be Auckland and New Zealand’s first, true multi-modal transport ticket. Rolling this out could improve the efficiency of bus lanes.


PAGE 20

Creating a sustainable super city
Develop a more sustainable motorway network – with lower costs

Long-term operating and maintenance costs of motorways can be reduced. The Auckland Motorway Alliance (AMA) was formed in October 2008 to maintain and operate Auckland’s 220km network of motorways. Led by the NZ Transport Agency, the AMA also includes Fulton Hogan, Opus, Beca, Resolve Group and Armitage Systems Ltd. The AMA has created operation and maintenance guidelines for planning, design, construction and handover of capital assets. These are a vital tool to improve the provision and maintenance of infrastructure and to develop a secure, safe, efficient and resilient transport network.

Meeting design standards does not necessarily equate to adopting the best sustainable outcomes. So these important new guidelines are educating planners, designers and construction personnel in better outcomes. By integrating whole-of-life principles into the process, a more sustainable long-term outcome is ensured. This approach leads to a more efficient motorway network, reduced economic costs, and increasing economic productivity and growth in New Zealand.

How to avoid the bridge strike which cost $400,000 to fix and cut two communities for six weeks

A new campaign to cut the number of over-height loads hitting Auckland motorway bridges has cut the number of incidents from 24 a year to just one since December 2009. Bridge strikes pose a high safety risk for road users. Severe strikes can cause major loss in motorway network efficiency and impose high costs on communities. In late 2009, a significant strike at Orams Road Bridge on the Southern Motorway cut a vital link between two communities for six weeks and cost around $400,000 to repair. Community members reliant on the bridge also faced heavy costs. The traditional approach has been to armour bridges. This does not decrease the number of strikes. The AMA has developed a bridge strike campaign putting prevention ahead of protection. Information and a simple height measuring device to be kept in each truck, so drivers can easily check their load height before travel were developed.

Projects such as these are supporting the efficient and safe movement of freight and people - critical to our growing city and economy.

What Whangarei could teach Auckland

The new super city could look at what Whangarei is doing to use the resource management process to improve results for the community. There is growing recognition in New Zealand of the relationship between growth management, sustainable land use patterns and social wellbeing, facilitated in part by amendments to the Resource Management Act 1991 (RMA) and Local Government Act 2002.

Whangarei has tried a community-focused approach to urban form and development. Whangarei District Council, together with Beca Planning, recently completed a significant revision of the Urban Form and Development chapter of the Whangarei District Plan. It:

- establishes a strategic policy framework for a sustainable, district-wide growth pattern
The planning frameworks under the control of the Super City allow it to apply significant influence. Through these plans the growth and development of our city will unfold. Embedding sustainability and sustainable thinking into these plans has the effect of directing private investment through influence rather than through regulation. – Deloitte for this report.

What Canterbury could teach Auckland:

Auckland’s mayors are investigating a scheme to take food and garden scraps from every home in the region and turn them into fertiliser. In recent years it has proved difficult to achieve alignment of purpose between the seven TLAs on a regional solution for organic waste. The super city presents the opportunity to resolve this.

Manukau City Mayor Len Brown is leading a working group backed by all of the Auckland councils looking at the possibility of an organic waste collection similar to one recently commissioned in Christchurch.

Manukau City Council waste manager Patricia Facenfield is watching Christchurch City’s new composting facility in action.

A “three bins” system to collect garden and kitchen scraps from Auckland homes will be presented to the new Super City mayor once elected.

A $22 million composting facility was commissioned in Christchurch in 2010. A PPP involving Canterbury councils, led by Christchurch City and involving private operators, its facility converts about 65,000 tonnes of organic waste each year into fertiliser for crops and gardens.

Food and garden scraps - which make up about half the waste of an average household - give off methane, a greenhouse gas, when they are left to break down in landfills.

Rob Fenwick, who is chairman of the Government’s Waste Advisory Board and whose company Living Earth, of which he is a director and shareholder along with Transpacific Industries Ltd, built and operates the Christchurch plant, said under the Waste Minimisation Act (2009) composting is important for several reasons:

- it reduces the volume of waste to landfill
- it lessens greenhouse gas emissions (organic waste generates methane in landfills)
- compost is highly beneficial in restoring organic matter to productive soils such as Pupekohe’s market gardens [MfE State of the Environment Report 2005].
Flexing $3 billion+ in buying power to save millions

Sustainable procurement can become one of the new super city’s most powerful tools in:
• making millions in savings
• reducing environmental harm
• directing investment into services and products which are better for the environment and the community
• influencing other businesses towards a more sustainable future, reflecting the buying power of the new council and its potential impact on the sustainability elements of the supply chain.

The Royal Commission on Auckland Governance reported that in 2008/09 the eight Auckland councils had budgeted to spend almost $2 billion in operating expenses and more $1.25 billion in capital expenditure. If the new super city focuses on sustainable procurement – based on buying goods and services on their actual whole-of-life and other costs, rather than just day-one price – it will enjoy millions in financial and other benefits.

According to Business Council member GSB Supply Corp Ltd, the country’s leading vehicle buying specialist, if a GPS device were deployed on all central and local government tool-of-trade vehicles, the total cost of ownership over their lease life they would be cut by more than $50.2 million. GSB describes this as “completely doable”.

Smarter procurement consulting services for sustainability

Best private sector practice for major projects has much to teach government. While lowest cost tendering does work well for buying products that can be precisely specified (like light bulbs), they work far less well when what constitutes quality is hard to quantify. For that reason the private sector has developed best-practice for procuring for major projects which consists of:
• seeking proposals saying what is being sought, without specifying a particular solution
• seeking a group of suppliers, able to meet 70 to 80% of likely requirements, to join a panel for three to six years, with an opportunity to continue membership based on performance
• the purchaser to have the option to go elsewhere to check pricing, or where it is believed the panel of pre-qualified suppliers may not have the needed skills
• suppliers on the panel are encouraged to come forward with innovations, confident that 40 other bidders will not be asked to quote on supplying a panellists’ innovative solution. Such a process will encourage innovative lower-cost and more effective solutions
• the stable relationship encourages panellists to employ for upcoming client needs – providing more stable employment and quality.

Buying consulting services with small value day one price only tenders increases costs long-term because the cost of repeatedly submitting tenders is too high for many competent contractors. The cost of hiring and firing the staff to handle the “Manhattans” of work flow are reflected in contract prices. Having won with low-price bids, contractors are then forced to cut corners to be profitable. This increases the whole-of-life cost of the services provided if they have higher operating or maintenance costs.
What could the Super City save?

Learning from North Shore City Council

How to avoid a 1% annual rates rise:

Why not apply a North Shore City initiative region wide?

In September 2008 North Shore City Council invested in FoundationFootprint™, a web based carbon, energy and water management system from Revolution ID. The major driver for this investment was to capture, report on and manage their carbon emissions to an ISO:14064 standard and increase the level of visibility across their electricity accounts. Within the first three months, the refunds and savings identified by the software were enough to pay for itself which meant that every cent saved from that point on was pure savings.

In 2009 Michael Field, North Shore City Council's procurement and sustainability manager, had over 60 sustainability related initiatives in place from contract renegotiations to clean tech investments and simple process changes. Using FoundationFootprint™’s Return On Investment Manager to track many of these programs it was estimated that the initiatives resulted in savings for the council of $1.2 million, or an avoided increase in rates of 1 per cent a year.

Following the success of account transparency and invoice accuracy and realising significant savings for the council’s energy spend, other expenses are now being put through FoundationFootprint™ including gas, fuel and mobile phones. Businesses and governments which have introduced sustainable procurement report between 8% and 30% efficiency improvements – which go straight to the bottom line. Applied across New Zealand, this could save central Government alone more than $1.6 billion a year.

The new Mayor should ensure, in preparing budgets, that the best sustainable procurement policies in place in the region – notably led by North Shore City Council - are adopted and applied by the Auckland Council and its CCos. Doing so will deliver ratepayers and citizens major financial, environmental, health and other benefits.

They can do it – why not you?

- North Shore City Council expects to save 15% on its paper and graphic design tender, and has already reduced the operational costs of its vehicle fleet by 30% over five years
- Accor Hotels cut its power bill by 8% across its New Zealand hotels by switching to long-life light bulbs – saving $5.2 million a year
- IBM reduced the University of Auckland’s IT infrastructure energy bills and space needs by 50% and improved storage use by 15%
- Inland Revenue has saved $100,000 by cutting paper use, $337,000 through improved energy management, and $4510 in petrol costs through purchasing seven Toyota Prius cars. It also reduced domestic travel by 13% over six months
- Wellington City has a sustainable business programme, eMission, which aims to help businesses (mostly small to medium sized enterprise) measure, monitor and reduce energy, greenhouse gas emissions, waste and water, making them more sustainable. Matched with sustainable procurement criteria in the super city, these measures could help drive major beneficial change.

“Green Procurement is smart procurement – it means improving the efficiency of public procurement at the same time using public market power to bring about major environmental benefits locally and globally.”

- European Commission definition
Some smarter things from the North Shore City Council could go super city wide:

1. **Seaweed diversion:** Some councils are responsible for removing all seaweed from the beaches, generally after major storm surges. For North Shore City (NSCC) this is 800 tonnes a year. This was historically sent to landfill. However, NSCC formed a collaborative relationship with an industrial composter, EnviroFert, and negotiated a new contract. As the seaweed is a raw material to them and they will generate income from the sale of the compost / fertiliser once it has degraded, NSCC was able to obtain a substantially reduced ‘tipping fee’ for this, equating to an average saving of $80,000 per year. This is worked out on last year’s landfill tipping fees, which will only increase over time, so the saving is ongoing and will actually increase. There is the additional bonus that this has gone from a ‘waste’ item to a ‘resource’ item.

2. **Gas burner management units:** One of these units was installed at the Takapuna Aquatic Centre, as they have a gas boiler to heat the water for the pool. Gas boilers usually lack any form of ‘intelligence’ from a technological perspective. They therefore heat and cool at a set cycle, whether it is required or not. The Gas Burner Management Unit is installed and measures the actual temperature of the water, which decreases the heating cycle frequency, therefore reducing the gas usage. Basically it means that the boiler only goes through a heating cycle when it actually has to.

3. **Diversion of organic waste:** About 40% of North Shore City’s waste is organic. It is now diverted to a worm digester, avoiding landfill fees.

4. **Contract renegotiations:** Thousands have been saved by renegotiating council energy, printing, and stationery contracts but these will probably already be covered off in the supercity transition.

5. **LED:** Office lighting is reducing maintenance and power bills.

6. **Staff education:** Office posters and staff education promote power-down screen savers when staff are away from their desks, switching off monitors and over night, lights off at night, using the energy saving features of printers and photocopiers, reduced lift use (each lift uses the same amount of energy per year as 7 average homes, so reducing the usage can deliver fairly significant savings) and doing regular energy and waste audits to ensure behavioural changes are being maintained.
Business Council member and energy efficiency management specialist, Energy and Technical Systems Limited, says an investment of $500,000 a year in skilled staff and advice is likely to produce annual savings of between $3.5 and $5.25 million a year.

Excluding Watercare Services, the new Auckland Council will spend about $35 million a year on energy (close to $30 million on electricity alone). According to the New Zealand Energy Management association, technology change in energy consuming equipment evolves at a rate of about 10-15% a year. The Auckland Council will also have around 92,000 street lights, an interest in some landfill gas to electricity plants and many other specialist public assets such as swimming pools, water and sewage treatment plants and public buildings where opportunities for reducing energy costs to the ratepayer continue to become viable as technology advances.

Lightening the city’s pollution load
The only New Zealand transport company with carboNZero status, Urgent Couriers, says its decision to go carbon neutral has:

- cut fuel use by 60% (and rising) by changing to a more modern, lower emission fleet
- seen the use smarter technology; a GPS system has improved fleet efficiency, which in turn lowers kilometres travelled and fuel used
- provided contracted drivers with more sustainable incomes because of lower bills and greater efficiency.

The firm is also offsetting remaining emissions by purchasing verified emission reduction credits. The company now emits less carbon per dollar of turnover. Its surveys show its stakeholders accept and endorse its carbon neutral status and attracted new customers.

Says Urgent Couriers’ Managing Director, Steve Bonnici: “Companies shouldn’t think it’s too difficult or expensive to implement a GHG emissions reduction plan; no matter what the nature of the business or amount of emissions, it makes good business sense, and it’s good for the environment as well.”

Looking ahead to Auckland’s Super City
The super city’s procurement policies should recognise those who not only perform competitively – but lower pollution and increase incomes through sustainable practices, including the use of smart technology.
What 75 out of 100 New Zealanders want you to do on sustainable procurement:

A ShapeNZ national survey of 3,300 New Zealanders on sustainable procurement policy in April, 2009 finds:

• 75% of New Zealanders believe whole of life value buying should be extended to regional and local government (8% oppose, 16% don’t know)

• 88% of Act voters support this extension, along with 79% each of National and Labour voters and 89% of Green voters

• 85% of Business Managers and Executives support the extension, along with 76% of Business Proprietors and Self Employed and Professionals and Senior Government Officials

• those with the highest purchasing power on behalf of their organisations most support the extension: 87% of those with purchasing authority of $50,000 to $100,000, 79% of those with authority $100,000+

• the strongest supporting sectors for an extension are Government Administration or Defence (86%), Transport or Storage (82%) and Manufacturing and Communications services (each 81%).
Business Council IBM’s Smarter Cities research concludes: “The opportunity presented by smarter cities is the opportunity of sustainable prosperity. “Pervasive new technologies provide a much greater scope for instrumentation, interconnection and intelligence of a city’s core systems.”

Around the world, leading cities are putting in place smarter systems, like:

- Galway’s SmartBay advanced water management system
- Songdo’s Wired City initiative or
- Singapore’s eSymphony transport system.

Becoming a “smarter city” is a journey, though, not an overnight transformation. The super city must prepare for change that will be revolutionary, rather than evolutionary, as they put in place next-generation systems that work in entirely new ways.

Cities must also take into account the interrelationships among the systems they are based on, as well as the interactions among the challenges they face.

Smarter cities make their systems instrumented, interconnected and intelligent

Pervasive information and communication technology means that there is much greater scope for leveraging technology for the benefit of cities:

- instrumentation, or digitization, of a city’s system means that the workings of that system are turned into data points and the system is made measurable. By 2010, there is likely to be 1 billion transistors, the building block of the digital age, for every human being. The pervasiveness and low cost of existing devices and sensors, like gas, electricity and water meters, offer the ability to measure, sense and understand the exact condition of virtually anything. Add to that new sensors and devices that offer further data gathering possibilities, such as RFID tags (more than 33 billion RFID tags will be active by 2010 – five for every inhabitant of the planet).

These can now be embedded across key city systems as a first step in addressing and solving many of the challenges cities face, ranging from improving library services to maintaining sewage systems:

- interconnection means that different parts of a core system can be joined and “speak” to each other, turning data into information
- intelligence refers to the ability to use the information created, model patterns of behaviour or likely outcomes and translate them into real knowledge, allowing informed actions.

Smarter cities transform their systems and their “system of systems”.

A smarter city is one that uses technology to transform its core systems and optimises the return from largely finite resources.

By using resources in a smarter way, the new super city can also boost innovation, a key factor underpinning competitiveness and economic growth.

Investment in smarter systems is also a source of sustainable employment.

Cities have limited resources. To deliver on the range of ambitious goals they have, cities must take account of the interconnected challenges they face and the interrelated systems they influence.

This is a journey for cities, not an overnight transformation. But the first step requires a shift in thinking and a break from the past.

**Business:** Cities must balance complex regulatory requirements with the need to minimise unnecessary administrative burdens.

Cities depend on their business systems for their prosperity.

Less efficient administrative systems can cost as much as 6.8 percent of GDP in some economies.

One study shows a 25-percent reduction in administrative costs – like time spent filling out forms – could yield savings of up to 1.5 percent of GDP. In the EU this would be 150 billion Euro (about NZ$ 300 billion).

Business Council member, eco-housing company ebode reports:

“Change is required across a range of policy areas. They need to begin at administrative level. In one recent case ebode was forced to abandon its policy of working only with electronic documentation. Auckland City Council requires all building consent applications in hard copy, with two or more copies required. Unbelievably, these many hundreds of pages were then scanned back to electronic format during the consent’s processing!”
Broadband and the web
Cities face challenges in meeting ever greater demands for connectivity. The online population has grown by almost 350% since 2000. Super city residents should enjoy the benefits of tapping into a worldwide network of information. In March 2009, average speeds for those with broadband varied from 4.6 megabits per second in Asia to 1.1 megabits per second in Africa. As the citizens of Tokyo and Yokohama prepare for gigabit-per-second connectivity, city managers must begin planning for a terabit world. (In Auckland browsing speeds for the best internet service providers (ISPs) reached 6.7 megabits per second, according to the Ministry of Commerce’s Monitoring Report for the quarter ending December, 2009). Performance varies with distance from chosen measuring sites.

New Zealand’s cities need to make sure they actively help and speed the roll out of fibre and other networks which improve broadband access.

How to get a third more working from home
Business Council-commissioned ShapeNZ research covering 983 residents within new super city boundaries shows broadband access at home could have a significant impact on commerce and travel demand.

- 61% of those with home broadband already report some reduced travel need (20% greatly reduced)
- 33% would use greatly increased broadband speed to telework/ work from home
- 21% would use greatly increased speed to run a business.

Do you have broadband internet access at home?
A. Yes 83%
B. No 17%

Broadband use in the home has
A. Greatly reduced the need to travel 20%
B. Slightly reduced the need to travel 26%
C. I travel the same, no impact 35%
D. Slightly increased the need to travel 2%
E. Greatly increased the need to travel 1%
F. Don’t know/ Not Applicable 16%

If the speed of your household or business broadband service improved significantly, what things would you use it for that you don’t now?
A. Shopping on line 29%
B. Teleworking / working from home 33%
C. Entertainment 42%
D. Gaming 23%
E. Running a business 21%
F. None of these, my internet speed is fast enough as it is 25%
G. N/A, broadband is not relevant to me 8%
H. Other (please specify) 4%

The flexibility of your working arrangements (such as working from home)
A. Greatly reduced 3%
B. Slightly reduced 4%
C. No impact 40%
D. Slightly increased 18%
E. Greatly increased 18%
F. Don’t know/ Not Applicable 17%

Flexibility of working arrangements (such as employees working from home)
A. Greatly reduced 1%
B. Slightly reduced 3%
C. No impact 26%
D. Slightly increased 20%
E. Greatly increased 10%
F. Don’t know/ Not Applicable 40%

“It has been estimated that a US$30 billion investment in smarter broadband communication, healthcare and energy systems grid could create almost 1 million jobs in the United States alone. Imagine the possibilities across all the world’s cities, including Auckland.”
- IBM Smarter Cities research

ShapeNZ October 2008 respondents 3786 nationally, 983 within super city boundaries. Weighted by age, gender, personal income, employment, ethnicity and party vote 2008 to provide a representative population sample.
How to put a smarter city plan in place

Many issues that cities face will require significant collaboration among city, state and national levels of government. In addition to formulating new policies themselves, cities must be able to articulate the challenges they face to influence policies made elsewhere.

<table>
<thead>
<tr>
<th>System</th>
<th>Pre-requisites</th>
<th>Management</th>
<th>Smarter systems</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>City services</td>
<td>Local government expenditure Local government staff</td>
<td>Coordinated service delivery</td>
<td>E-government Application and use of ICT for service delivery and management</td>
<td>Efficiency and effectiveness of public service delivery</td>
</tr>
<tr>
<td>Citizens</td>
<td>Investment in education, health, housing, public safety and social services</td>
<td>Joined-up management and coordination of service delivery</td>
<td>Application and use of ICT and smart tech for human and social services</td>
<td>Education, health, housing, public safety and social outcomes</td>
</tr>
<tr>
<td>Business</td>
<td>Access to finance, administrative burden, barriers to trade, business real estate</td>
<td>Joined-up and efficient regulation and administration of the business system</td>
<td>ICT use by firms, new smart business processes, smart tech sectors</td>
<td>Value added, business creation, innovation</td>
</tr>
<tr>
<td>Transport</td>
<td>Investment in transport infrastructure and public transport. Quality of basic infrastructure.</td>
<td>Joined-up governance of transport system</td>
<td>Use of smart traffic technologies. Congestion pricing</td>
<td>Congestion levels; Accessibility within and to city; Energy intensity of transport system</td>
</tr>
<tr>
<td>Communication</td>
<td>Investment in communication infrastructure</td>
<td>Coordinated regulation of communication system</td>
<td>High-speed broadband, Wi-fi</td>
<td>Communication system quality and accessibility</td>
</tr>
<tr>
<td>Water</td>
<td>Investment in water infrastructure; access to clean water; access to sewage</td>
<td>Regulation and governance of water system</td>
<td>Use of smart technologies for water management</td>
<td>Water use; Water waste/loss;</td>
</tr>
<tr>
<td>Energy</td>
<td>Investment in energy infrastructure</td>
<td>Coordinated regulation of energy system</td>
<td>Presence of smart grids; use of smart metering</td>
<td>Energy waste/loss; Reliability of energy supply; Renewable energy</td>
</tr>
</tbody>
</table>

Source: IBM Institute for Business Value analysis

Table 1: Sample criteria and factors for assessment
Transacting through One Window

Auckland Council will be responsible for consents processes; it is expected that a single process for each type of consent will apply across the entire city.

The Auckland Transition authority has considered the issue of consolidating the Super City’s back office – re-engineering and automating planning, rating, finance, administration, human resources and service delivery.

E-Government capacity should be developed to deliver more online service and create a “one window” service through which businesses and people can access and use services.

Efficient electronic management of services, including resource consent applications, can increase service speeds, lower costs – and help keep and attract new businesses and grow jobs.

Other work city leadership should ensure progress includes:

- consistent processes for building, licensing and resource management across the region
- simplifying and harmonising by-laws and regulations – making them easier to understand and reducing the need for costly expert intervention.
The Super City should adopt a comprehensive policy to lower its greenhouse gas emissions. This will have significant affects on planning and other decisions affecting business and citizens. Business Council member and specialist consultancy firm SKM suggests this approach:

### Policy/Activity Category

<table>
<thead>
<tr>
<th>Key for Tables</th>
<th>Descriptions of Policies/Activities by Sub-Category</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Target setting</strong></td>
<td>(a) CO2 reduction targets</td>
</tr>
<tr>
<td></td>
<td>(b) Future shares/amounts of renewable electricity or energy for all consumers in city</td>
</tr>
<tr>
<td></td>
<td>(c) Future shares/amounts of renewable electricity or energy for government operations and/or buildings</td>
</tr>
<tr>
<td></td>
<td>(d) Future shares or absolute numbers of buildings or homes with renewable energy installations</td>
</tr>
<tr>
<td></td>
<td>(e) Future shares/amounts of biofuels for the government vehicle fleet and/or for public transport</td>
</tr>
<tr>
<td></td>
<td>(f) Other types of targets, for example to become fossil-fuel free or “carbon neutral”</td>
</tr>
<tr>
<td><strong>2. Regulation based on legal responsibilities and jurisdiction</strong></td>
<td>(a) Urban planning and zoning that encourages and integrates the local generation, distribution and use of renewable sources of power in the local jurisdiction—including planning and zoning for public transportation and electric vehicle infrastructure</td>
</tr>
<tr>
<td></td>
<td>(b) Building codes and/or permitting that applies to, or incorporates, renewable energy in some manner. Examples: mandates for solar hot water and solar PV installations, zero-net-energy homes, shading legislation, and mandated design review/scoping of opportunities and potentials for renewable energy.</td>
</tr>
<tr>
<td></td>
<td>(c) Tax credits and exemptions within tax systems: for example, sales, property and fuel taxes, permitting fees, and carbon taxes.</td>
</tr>
<tr>
<td></td>
<td>(d) Other regulation, including municipal departments mandated to promote or plan for renewable energy, mandates for biofuels use in vehicles or biofuels blending, and mandatory carbon cap-and-trade.</td>
</tr>
<tr>
<td><strong>3. Operation of municipal infrastructure</strong></td>
<td>(a) Local government purchasing (and joint-purchasing with other municipalities or with private sector) to integrate renewable energy into government operations. Includes renewable electricity, biofuels, and bulk purchasing for market transformation programs.</td>
</tr>
<tr>
<td></td>
<td>(b) Local government investment in renewable energy for government buildings, schools, vehicle fleets, and public transport.</td>
</tr>
<tr>
<td></td>
<td>(c) Public utility regulation, including tariff regulation, renewable energy targets, feed-in tariffs, interconnection standards, net metering, and portfolio standards; also designates private utility policies of these types</td>
</tr>
</tbody>
</table>
4. Voluntary actions and Government serving as a role model

<table>
<thead>
<tr>
<th></th>
<th>Demo</th>
<th>Grants</th>
<th>Land</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(a) Demonstration projects, including participation in national pilot and demonstration projects. Often done with private sector.</td>
<td>(b) Grants, subsidies, and loans for investments in renewable energy by homeowners or businesses.</td>
<td>(c) Using local government land/property for renewable energy installations (leasing/selling/permitting). Can also include deals that require developer promises for renewables and efficiency.</td>
<td>(d) Examples: joint ownership of private projects, city-financed investment funds, bond issues, and green certificates and trading.</td>
</tr>
</tbody>
</table>

5. Information promotion, and raising awareness

<table>
<thead>
<tr>
<th></th>
<th>Info/promo</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Includes public media campaigns and programs; recognition activities and awards; organization of stakeholders; forums and working groups; training programs; enabling access to finance by local stakeholders; enabling stakeholder-owned projects; removing barriers to community participation; energy audits and GIS databases; analysis of renewable energy potentials; information centers; and initiation and support for demonstration projects.</td>
</tr>
</tbody>
</table>

Power price deals for solar:

SKM cites the use of power purchase agreements (PPAs) and similar leasing instruments to finance residential solar power installations in the United States. Homeowners pay a deposit on their solar equipment, then pre-purchase power at a set price for several years. They enjoy lower power use, lower costs, while paying off their solar system. In California in 2009 there were about 10,000 new home solar installations using PPAs, which drive about 60 to 80% of home solar installations nationwide.
Green Building:
Auckland has an opportunity to become renowned for green buildings and clean technology solutions. However, the retrofit of existing residential and commercial building stock is inhibited by split incentives; transaction costs; access to capital.

Housing:
The super city’s new leaders should look to visionary ways to develop new environmentally responsible communities – while also making them highly desirable.

For example, the new Hobsonville Point development, on Auckland’s upper Waitemata Harbour, is setting the benchmark for sustainable housing, with the first precinct of 660 new homes about to be constructed on the 167 hectare site.

A coastal community 25 minutes from central Auckland, Hobsonville Point aims to reduce the volume of town water use per person per day to 100 litres (compared to 180 litres in the Auckland Region). A coastal community 25 minutes from central Auckland, Hobsonville Point aims to reduce the volume of town water use per person per day to 100 litres (compared to 180 litres in the Auckland Region). Applied city-wide principles being used at Hobsonville could have a major impact on managing future water demand and lowering costs, for the super city and homeowners.

In partnership with residential property developer AVJennings, Hobsonville Land Company (HLC) initiatives include:

- rain tanks at each home, collecting roof water for use in toilets, the laundry and gardens. The tanks are sized to provide 75% of the water used in these areas – a huge saving in a community that could eventually have around 3,000 homes. The relatively small 3000L or 5000L tanks will fill quickly and regularly with Auckland’s usual rainfall. They mean homeowners will have water even if town supplies are restricted.

- rain tanks are also part of the low impact storm-water design approach, ensuring less water runs off each section, lowering storm-water volumes and reducing impacts downstream. All Hobsonville Point storm-water will also be treated before being discharged into the sensitive Upper Waitemata Harbour.

- all homes will have water efficient (3 Star or better) toilets and showers, resulting in lower water and power bills HLC and AVJennings are also minimising energy use through good design and technology. The greater Auckland region uses more than 141 million cubic metres of water and produces 133 million cubic metres of wastewater per annum. Any reduction in these can only be a good thing.

- Hobsonville Points first residential release sub-division: homes will have rain tanks meeting all their toilet, laundry and garden needs, cutting water and other costs to homeowners and the super city.

Photovoltaic power, rainwater collection, solar hot water systems, passive solar heating and high-rated insulation are included as standard features in every house being built by Business Council member ebode.

The sustainable housing company says: Although most Auckland residents would agree that installing energy-saving components in new build housing should be actively encouraged by local government policy, ebode is concerned that very few schemes exist to support sustainable construction.

ebode specifies rainwater collection systems as standard in all homes and retrofits older properties through its associated company Heritage Design Group. The current Auckland Council policy, which only offers rebates to developers seeking to subdivide existing land, provides no financial incentive for companies involved with renovating existing stock, or for those specifying these systems for new-build projects on existing sites.

There is no local government support for installing these sustainable solutions like photovoltaic electricity generators, solar hot water systems and using passive solar design, allowing homes to harness the sun’s renewable energy and reduce reliance on city’s electricity grid.

No waste: ebode’s design values mean that it does not specify materials that contain toxic preservatives, glues or colour finishes that could potentially release Volatile Organic Compounds (VOC’s) into the home. This allows a ‘no-waste’ policy to be successfully implemented on site, with almost all excess materials safely disposed of through recycling. Once again, there are no economic benefits for businesses investing in the responsible management of construction materials other than avoiding landfill costs.

What if nil-waste practices were applied on every home construction site throughout the super city?
Sustainable commercial building:

**Turn buildings into attractive business partners**

The super city’s commercial buildings and how they’re designed and managed have a significant impact on the super city’s energy and water use, transport demand, visual appearance and attractiveness to investors and the workforce. Economic, environmental and social gains are possible if the super city focuses on encouraging sustainable building and upgrading existing commercial buildings.

**Case Study: BNZ**

The Bank of New Zealand’s new corporate offices at 80 Queen Street, Auckland, which have a NZ Green Building Council 5-Star rating for sustainable design, are part of a move to more efficient and sustainable building design in New Zealand and worldwide.

For BNZ, which is committed to being carbon neutral by September 2010, the building initiative is one of many which has seen it impose sustainable conditions globally on 56,000 suppliers to the NAB group.

**Its new Auckland corporate office:**

- restores a previously contaminated site
- avoids light pollution
- reduces energy use
- deploys dry heat technology to reduce the risk of legionnaires disease
- cut construction waste to landfill by 50%
- uses solar controlling glass and efficient chillers and boilers are used to cut energy needs
- uses CO₂ monitors to ensure sufficient ventilation while its occupied
- delivers a 50% improvement in ventilation
- has good visual connection to the outdoors, low noise levels, environmentally friendly paints, adhesives and carpets to ensure a high quality internal environment
- is fitted out with materials and furnishings with low environmental impact
- uses waterless urinals, low flow taps with motion sensors, low flow showers and lowers water demand with roof-collected rainwater being filtered and used to flush toilets.

BNZ is also encouraging staff to use environmentally friendly transport and provides bicycle parks for staff and visitors. It uses Auckland best practice for its transport planning.

**BNZ is also:**

- piloting a recycling initiative, reducing its waste to landfill by 84%
- introduced double-sided printing of credit card statements, saving over 5 million sheets of paper a year
- increasing the use of video conferencing to cut down staff air travel, introduced a PC switch-off time in the evenings and installed timer switches for lights in meeting rooms
- in 2007, it cut the number of reports printed by 885,000 pages and is aiming for a further million fewer pages.

Policies which help apply practices like this at scale, will help achieve significant benefits – and affect the multi-million dollar projects to provide water, waste, energy and transport infrastructure, while improving the environment and making workplaces healthier and therefore more competitive. The city also becomes more globally competitive and attractive for investors and workers.
Waste management

The way in which the super city manages its waste can have a ripple effect – positive or negative – on jobs.

Auckland is served by three landfills (Whitford, Redvale and Hampton Downs, in the Waikato), down from six in 2002, The Whitford and Redvale landfills meet Ministry for the Environment (MfE) Class A standards and avoid leaching. About 85% of the two city landfills’ methane gas is captured and used to generate electricity – putting 14 megawatts back into the grid. Landfill operator Transpacific Industries, a Business Council member, says there are plans for Redvale alone to produce about 20MW in the next 13 years.

According the MfE the city is responsible for more than 1 million of the 3.2 million tonnes of waste estimated to be going into the country’s landfills.\(^\text{14}\)

About 1.87 million tonnes of this national waste stream is recyclable – and of this about 443,897 tonnes is recovered (48%). By assuming that 10% of households nationwide use recycling bins, the MfE estimates it costs $52 per tonne to collect waste for landfill.

Set-up costs range from $2 million to $30 million for landfills with annual capacities of 10,000 tonnes to 500,000 tonnes.

However, reducing waste to landfill and landfills’ impacts on leaching, gas emissions, air and water pollution are significant, ranging up to $467 per tonne, depending on waste type.

Table 19: Total external benefits (avoided costs) of recycling

<table>
<thead>
<tr>
<th>Externality</th>
<th>Low value ($/tonne)</th>
<th>High value ($/tonne)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoided disamenity impacts (all waste)</td>
<td>1</td>
<td>8.94</td>
</tr>
<tr>
<td><strong>Avoided greenhouse gases</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper</td>
<td>25</td>
<td>42</td>
</tr>
<tr>
<td>Organic</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>Timber</td>
<td>19</td>
<td>32</td>
</tr>
<tr>
<td>Avoided leachate (organics, used oil)</td>
<td>1</td>
<td>37</td>
</tr>
<tr>
<td><strong>Direct consumer benefits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper, plastic, glass, metals</td>
<td>44</td>
<td>383</td>
</tr>
<tr>
<td>Organics</td>
<td>44</td>
<td>383</td>
</tr>
<tr>
<td>Tyres</td>
<td>0</td>
<td>278</td>
</tr>
<tr>
<td>Oil</td>
<td>0</td>
<td>467</td>
</tr>
</tbody>
</table>

Waste management

The recycling policy adopted by the new super city and its leaders is critical to keeping and growing jobs in carbon-content sensitive export businesses here.

Case Study: Glass
A wasted opportunity which could export city jobs

- glass is 100% recyclable - 100 tonnes of old glass will make 100 tonnes of new glass.
- recycling is important environmentally – to reduce landfill and CO2 emissions and ultimately cut waste overall. No other packaging material can do this.
- it can all be done in New Zealand - we do not need to export our waste to Asia
- there is not enough recycled glass in the NZ market currently to allow Owens Illinois (OI), the company with a new glass furnace at Onehunga, Auckland, to use as much recycled glass as is possible. In fact, there is a shortage of recycled glass in the New Zealand market with the introduction of the third glass furnace in Auckland
- Auckland and Manukau councils, Tauranga, Christchurch, Timaru, and Queenstown have opted to comingle paper, glass, plastic and other recyclable waste in kerbside collections. This lowers their costs and avoids health and safety issues.
- however, current co-mingling cuts the quality of the recycled materials goes down – reducing the recovery rate for glass to just 30 to 40%. With newer systems this can go up to 75%
- kerbside glass sorted by colour has a recovery rate of 98%
- people are also abusing the system by putting organic waste in the bins
- the amount of collected paper suitable for recycling is also lowered by commingling
- the result is lower collection costs - and a large pile of rubbish at the end of the process that goes to landfill. This is not recycling.
- compaction rates in the waste trucks are critical. Most contractors compact at rates which breaks the glass and allows it to be cross contaminated by other wastes. It also cuts the recovery rates of other wastes affected by this, like paper. With improved sorting and handling systems it would be possible to increase the yield of thinner glass sizes to 75%. This involves investing in more optical recognition technology and assessing the most cost-effective ways of achieving this.

Impacts:
Efficient glass recycling lowers the emissions content of glass products. Wineries are now doing sophisticated emission content measurements in order to win and keep valuable export contracts for major supermarkets and other retailers, specially in Europe.

If the carbon content of their bottles cannot be kept competitive, by efficient recycling here, then wine may be bulk-exported – and bottled closer to the end market.

Answers:
- compact rates can be lowered to stop glass breaking and aggravating contamination caused by waste co-mingling
- investigate other possible options, including separate kerbside collection of glass to co-exist with co mingled collection of paper, aluminium, steel and plastic
- Use the right equipment to sort glass by colour, making it suitable for the best end use market – glass making. It is important that this is part of any commingling agreement.
- lower CO2 emissions
- lower energy usage
- less solid waste to landfill, and
- a proper life cycle that is never ending.

The benefits of doing this are enormous:

How to accelerate Auckland
What the candidates say so far:

John Banks, to Business Council CEOs, April 21, 2010:
“My approach to sustainability is predicated to two deeply held convictions. I don’t like waste, I don’t like waste. When you go to bed at night after eating the dog food as a kid, you don’t like waste. When you wake up in the morning hungry, you live your life protecting against waste. “
On glass recycling: “Visy is opening a first glass new recycling plant. I hear your concerns. I hear you.”

Len Brown:
“We will be delivering some very, very strong messages about environmental sustainability and go forward for the new Auckland Council. So, in terms of recycling, (we will have) a very strong focus on ensuring a comprehensive recycling, with the possibilities that we can drive out of that. So, I’ve listened to your message and that will be taken and be a part of the review of the contractual arrangements that we have with ((waste recycling contractors). We certainly want to get everything we possibly can out of the three tranches of that recycling and I think yours is an appropriate message that I will not allow it to be lost. “

“50% of the waste that goes to our landfills is green (and organic) waste, and it’s been brilliant to allowing the development of co generation power through methane to electricity, but I don’t want those co generation units to be the primary reason for our alternative power supplies on the basis that it is putting more green waste to landfills. It’s creating discharge. My view is that I would like us to do a serious green waste recycling strategy. We have done all the work, and it’s another one of those projects for Auckland. So, continuing strong focus on getting the best that we can out of recycling, the present inorganic that we have, and then a further step up to green waste recycling to take 50% out of our landfills, and really start making some progress in terms of a reduction of our carbon discharges.”
- Speech to Business Council CEOs, May 26, 2010
What Aucklanders say about super city glass recycling:

This ShapeNZ survey of 570 people living within Super City boundaries was conducted in July 2010. The maximum margin of error on the weighted sample is +/- 4.7%.

Councils should ensure that 100% of the glass they collect is suitable for melting into new bottles and jars

| A. Strongly agree | 46% |
| B. Agree | 34% |
| C. Neutral | 16% |
| D. Disagree | 1% |
| E. Strongly Disagree | 1% |
| F. Don’t know | 1% |

Councils should recycle all the glass they collect in New Zealand

| A. Strongly agree | 48% |
| B. Agree | 35% |
| C. Neutral | 10% |
| D. Disagree | 2% |
| E. Strongly Disagree | 1% |
| F. Don’t know | 4% |

Sending glass collected from my household overseas is acceptable

| A. Strongly agree | 9% |
| B. Agree | 24% |
| C. Neutral | 26% |
| D. Disagree | 22% |
| E. Strongly Disagree | 15% |
| F. Don’t know | 3% |

Recycling 30 to 40% of collected glass into new bottles and jars is acceptable to me

| A. Strongly agree | 16% |
| B. Agree | 21% |
| C. Neutral | 21% |
| D. Disagree | 26% |
| E. Strongly Disagree | 14% |
| F. Don’t know | 1% |

Co-mingling of recyclable materials should stop

| A. Strongly agree | 18% |
| B. Agree | 26% |
| C. Neutral | 32% |
| D. Disagree | 14% |
| E. Strongly Disagree | 5% |
| F. Don’t know | 7% |

Co-mingling of glass, plastic and other materials is acceptable to me

| A. Strongly agree | 6% |
| B. Agree | 21% |
| C. Neutral | 31% |
| D. Disagree | 24% |
| E. Strongly Disagree | 13% |
| F. Don’t know | 5% |

Co-mingling should continue but in ways which increase glass recycling rates

| A. Strongly agree | 10% |
| B. Agree | 46% |
| C. Neutral | 22% |
| D. Disagree | 10% |
| E. Strongly Disagree | 7% |
| F. Don’t know | 5% |

I don’t care how councils dispose of the materials they collect from my household

| A. Strongly agree | 6% |
| B. Agree | 9% |
| C. Neutral | 12% |
| D. Disagree | 28% |
| E. Strongly Disagree | 43% |
| F. Don’t know | 2% |

I am surprised that up to 70% of glass collected in some areas is not being remade into new bottles and jars

| A. Strongly agree | 30% |
| B. Agree | 46% |
| C. Neutral | 17% |
| D. Disagree | 2% |
| E. Strongly Disagree | 2% |
| F. Don’t know | 3% |

Landfill gas – to biofuel?

The waste industry is now investing in research into turning landfill gas into an alternative fuel for domestic use.

The private sector, which initiated projects to turn landfill gas into energy ahead of any national requirements, is now looking at scrubbing the gas to improve its methane concentration to use as a vehicle fuel. In the United States two local authorities are running bus fleets on landfill gas.

Some competition among firms with different eco-friendly uses of the green and organic waste raw material can be expected.
According to Business Council member Tourism Auckland:

- New Zealand’s tourism industry is worth $21.7 billion a year and has been built on a promise of “100% Pure”
- Auckland is unique: besides its significant contribution to regional gross domestic product, it is New Zealand’s major interface with international visitors.
- The majority of international visitors begin or end their visit to New Zealand via Auckland, and more than 34% of international visitor nights are spent in Auckland.
- We need to grow:
  - visitor arrivals
  - visitor nights
  - visitor spend and
  - reputation.

It is therefore especially relevant for the new Auckland Council to embrace the development and implementation of policies that incentivise the tourism industry to operate sustainably, and for Auckland’s behaviour to set the scene for the visitor sector across the entire country. The global visitor sector is placing an increasing priority on sustainable development. The Auckland Council has a unique opportunity to enable sustainable business practice within the visitor sector: a principled industry and responsible hosts.

It is essential the tourism industry deliver on visitor expectations of sustainable services and best practice.

Tourism and transport: Auckland’s visitors use public transport and often require mixed mode transfer options.

- Policy should support a flexible approach to infrastructure development, allowing visitors to mix transport modes, like allowing bikes on buses and trains, a greater network of public services and active transport solutions. Given the demographic of the aging traveller and the significant number of people with disabilities world-wide, all transport options need to be accessible. Local residents seeking alternatives to private car use will also lead to reduced green house gas emissions and improved air quality which ultimately reduces pressure on health services. Procurement of vehicles for public transport and supporting infrastructure should allow for leading edge bio-fuel and renewable energy sources as an alternative to our existing reliance on fossil fuels. This “low carbon economy” approach to transport also puts Auckland in better position under the Emissions Trading Scheme.
Tourism and organic waste: Hoteliers and food and beverage providers are challenged by the lack of service for organic waste disposal, a significant proportion of waste from the sector. Better services, or more enabling policies, will reduce waste to landfill and its associated environmental concerns.

New builds and refurbishments: The tourism industry will benefit from legislation enforcing (or enabling) sustainable new builds. For example: low maintenance claddings, heat recovery ventilator systems, passive ventilation, solid timber cabinetry, modular design, solar water and under floor heating, energy efficient appliances and tap ware, thermal massing, photovoltaic panels, double glazing and composite joinery, recycled wool insulation, under floor insulation, grey water recycling, composting sewage systems, timbercrete walls and chimneys, rain water harvesting.

Given the demographic of the aging traveller and the significant number of people with a disability all accommodation and activity options need to incorporate accessibility. By green-building, businesses cut costs long term, to become more economically sustainable and maintain a competitive edge internationally.

What the candidates say so far:

Banks:
“We are only going to sell Auckland as a truly great destination when we clearly understand that what we have been given is our best possible gift that we can give to visitors. What have we been given? Well we’ve been given the beautiful beaches and the wonderful Gulf Islands for starters. 45,000 years ago we were given Maungawhau and we need to protect that and look after it, because they’re not coming for the Gucci shop. They are coming because open space, fresh air, two of the greatest harbours in the world described by Hobson 20 March 1840 as “the greatest harbour on earth”. And we’ve got to protect it, and we’ve got to clean up the beaches and we’ve got to look after the environment, and we’ve got to clearly admit, as I have on many occasions, that we haven’t done well enough. And that’s why I love this organisation (Business Council), that’s why I admire you as role model New Zealanders because you’re bringing to the table your commercial experience and your love of the city together to make it a better place so Tourism Auckland can promote it to the rest of the world.”

Brown:
So they arrive down the bottom of the gangplank, loh…. Where is Auckland? I can sense it’s in the vicinity, but there’s nothing there to greet them, not a box, not a reception desk, not even someone with the intention or the initiative that the entrepreneurial spirit can give them a map of Auckland and take them in a rickshaw and run them around the place. So, we will have an intense focus on tourism. We should be having, like when people have when they go to Sydney, Melbourne and Brisbane … it’s a stay, it’s a destination, why do they go anywhere else? So, we have got some serious rebuilding to do” (in terms of the international ferry terminal and a convention centre).

“There’s not many people north, south, east, west nowadays who will take the opportunity on a Friday night to come into Auckland’s CBD to enjoy this as you should, as a retail Mecca. It is our heartland, and if we’re not doing it why should the tourists do it. So, (this is) most assuredly going to be the economic focus of this Auckland Council.”

To achieve economic growth in Auckland, the region needs a robust tourism industry.
To enable development of tourism a long term sustainable approach to business is essential.
Cawthron estimates that improving the health of Auckland’s estuary areas by improving stormwater infrastructure would be valued by the community at approximately $1 billion over 25 years.

The new Auckland super city has 1600 kilometres of coastline. How much would cleaning it up be worth?

The Cawthron Institute, says cities have an undeniable impact on waterways and coastal environments. Stormwater and silt are affecting water clarity and conditions on beaches, while also having a range of ecological impacts.

How much a council or government should spend on mitigating those effects is a difficult question to answer, unless you know how much the community values the natural environment.

Cawthron Institute recently assessed for the Auckland Regional Council what people value in their coastal environment, from the inner harbour to the outer beaches, and what environmental and financial compromises they were prepared to make to improve these areas.

The things Aucklanders value most are not traded in the market: water clarity, underfoot conditions on beaches, and ecological health.

Once estimated, these values indicate the level of benefits that the community is likely to receive from upgrading stormwater systems and other infrastructure to mitigate the effects of urban and industrial development.

This is an ecological leap forward for infrastructure management, which has traditionally focused on cost-benefit analysis from an engineering perspective.

Cawthron estimates that improving the health of Auckland’s estuary areas by improving stormwater infrastructure would be valued by the community at approximately $1 billion over 25 years.

Since improvements to water clarity and underfoot conditions in estuaries would flow on to inner harbour and outer harbour beach areas in the long term, the total value to the community would be very much higher.

This study, the first use of this method for a regional council infrastructure project, provides the new super city with the basis to assess how community well-being would be enhanced through infrastructure projects that improve the environment.

The super city’s new leaders should consider how these results might be applied in formulating policy.

Len Brown to Business Council CEOs, May 26, 2010:

Says he will:

- Give priority to fixing a stormwater/wastewater network that is sadly in need of repair
- Describes Waitakere’s twin-water project as leading edge, and Manukau’s major efforts to pond stormwater and plant trees to clean the catchment draining into the Otara and Tamaki estuaries.
- Wants to complement catchment cleansing work region wide with a million-tree-a-year planting programme involving school children, with 500,000 trees each provided by the council and business. “We could go well beyond that. I have a very strong commitment to cleaning our water.”
Deloitte advises

Sustainability is increasingly becoming an issue both on the global and local stage. There is no doubt that New Zealand lags Europe in particular, and the Super City can seek to play its part in meeting this challenge. The issues around sustainability are often expressed in terms of congestion, social impacts, waste, greenhouse gas emissions and natural resources use. In the last 15 years the greatest increase of any ethnic group has been those of Asian origin, rising from 5.5 per cent of the population in 1991 to 18.9% in 2006. Pacific peoples comprised 11.9 per cent of the Auckland regional population in 1991, 13.3 per cent in 2001, and 14.4 per cent in 2006. The ARC’s Auckland Monitor report says: “The relatively new combination of cultures, languages, traditions and skills in Auckland has bought a new vibrancy to the region, much of which is reflected in cultural events and traditions; however, at the local level there are ongoing challenges to ensure cross-cultural understanding and social cohesion.”

How to achieve cultural enrichment – and economic growth

The challenge for many indigenous organisations and businesses is how to balance aspirations for cultural enrichment, like retaining strong elements of traditional culture such as values, language and knowledge, with more modern elements of advancement, growth, commerce and economic development. Business Council member Landcare Research has developed a framework to assess and measure cultural sustainability, including setting key performance indicators. If the super city is to achieve build socially and economically upon its various cultures, then a framework for achieving and reporting on this is needed.

The overall approach

A framework for reporting cultural sustainability

The future population make up – including cultural ethnicity - are going to profoundly affect Auckland’s future. The population is becoming increasingly diverse. The number of Aucklanders born overseas grew from 23% in 1986 to 36% in 2006. The region is home to more than 150 ethnicities. While 67.6% of New Zealand’s population were European in 2006, in Auckland it was 56.5%.

In the last 15 years the greatest increase of any ethnic group has been those of Asian origin, rising from 5.5 per cent of the population in 1991 to 18.9% in 2006. Pacific peoples comprised 11.9 per cent of the Auckland regional population in 1991, 13.3 per cent in 2001, and 14.4 per cent in 2006. The ARC’s Auckland Monitor report says: “The relatively new combination of cultures, languages, traditions and skills in Auckland has bought a new vibrancy to the region, much of which is reflected in cultural events and traditions; however, at the local level there are ongoing challenges to ensure cross-cultural understanding and social cohesion.”

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Sustainability is increasingly becoming an issue both on the global and local stage. There is no doubt that New Zealand lags Europe in particular, and the Super City can seek to play its part in meeting this challenge. The issues around sustainability are often expressed in terms of congestion, social impacts, waste, greenhouse gas emissions and natural resources use. To clearly see the importance of sustainability, it is therefore vital to link business success and prosperity with sustainable issues. Some of the examples below indicate a slightly different perspective making the link clear:

- Airlines are increasingly using methods including winglets and zonal dryers on a number of aircraft: Winglets make the aircraft more aerodynamic. Zonal dryers reduce moisture build up. Both have the effect of making the aircraft more fuel efficient. The classic sustainable way of looking at this is to say it has reduced carbon emissions from fuel burn, which it has. However, it also means fuel costs are cut.

- Many businesses are redesigning processes to reduce water and electricity use. Again, the classic sustainable way of responding to this is to celebrate the reduced use of a natural resource, and saving of more coal, gas or other power sources for another day. However, it also reduces costs on the business.

Both examples can be seen in a fairly narrow sustainable way: Save money, reduce waste. However, wider sustainability issues are also impacted. Relieving pressure on natural resources such as water means that there is less pressure on the water network, farmers, and local communities dependent upon water sources for their livelihood or even existence. It may reduce or delay the requirement to invest in capital projects to expand the water network. The same can be said of electricity, or reduced landfill requirements, or social costs of dealing with these things (like resource consents, new roads).
There are many opportunities for this to continue.  
**Some include:**

- **solar sale and leaseback** - enabling existing houses to be cash neutral from installing solar water heating and requiring new build houses to have solar water heating which is charged to the homeowner either on purchase, or over (say) 10 years until it transfers ownership. Good securitized cash flow for a business and reducing total energy requirements.
- **subsidized or free Wi-fi across the city** - so people can work from anywhere, reducing congestion, and inefficient transport.
- **integrated into transport links** - reducing travel time, enabling people to work en-route via internet access.
- **grey water use** - subsidised, or required in building codes to reduce the amount of water treatment required and the use of drinking water for things like washing and toilets. This cuts the cost of treating drinking water and reduces pressure on waterways.

**Deloitte says:**

The Super City (Auckland Council) and its associated entities (CCOs) have the scale and position to lead, influence and regulate.

**So the Mayor should seek to explore all three areas:**

1. **Leadership** - given the size of Auckland Council there are plenty of opportunities to embed sustainability into core activities.
   a. Taking heed of the recommendations in the *Business Council’s guide to sustainable procurement* would be a great start and would likely have a ripple down effect with the providers to the Council.
   b. Producing a comprehensive and holistic CSR report would also demonstrate the importance of the issue and would show Auckland businesses what can be achieved with the right direction and leadership.

2. **Influence** - the planning frameworks under the control of the Super City allow it to apply significant influence. Through these plans the growth and development of our city will unfold.
   a. Embedding sustainability and sustainable thinking into these plans has the effect of directing private investment through influence rather than through regulation.
   b. Consideration should also be given to the broader issues of sustainability including cultural and social. Through the events run and the activities sponsored Auckland Council has the ability to shape the place in which we live, not only the physical environment but the opportunities we have as a community to get together and to develop the culture of Auckland.

3. **Regulation** - as the plans themselves are put into local bylaws and regulations there is the opportunity to further extend the reach of sustainability. Whether this be in the built or the natural environments. The regulatory lever cannot be under-estimated and equally cannot be over-used. To ensure support from business and community Auckland Council will need to use a combination of all three levers discussed here, leadership, influence and regulation.

**Banks:**

“Auckland City Council will not address sustainability alone. I don’t have all the answers. I don’t know as much about this subject as you do. I admit that, but I am prepared to learn. And I’m prepared to join in a partnership with you for a greater Auckland that recognises your strengths and your love of the place and builds on a sustainable Auckland around a spatial plan that we need to be committed to.”

**Brown:**

“I really just don’t like to focus on the environment – what I am looking for and what I’d like to see our city really reach out for and focus on is the perfect synergy of the three pillars that build great cities. Strong social cohesion and social equity, environmental sustainability and principles of an eco city, and thirdly strong powerhouse economy that is sustained by those two other great pillars. We find that perfect mix and I think that we could really deliver to our communities something special as a legacy for generations ahead.”
Suggested background reading material
(Please note, the list is not exhaustive)

2. Curitiba, Brazil - public transportation
   www.youtube.com/watch?v=vvkSITFXG4g
3. London, UK – sustainable city study www.siemens.com/entry/cc/features/urbanization_development/all/en/pdf/study_london_en.pdf or view online at: www.siemens.com/entry/cc/en/urbanization.htm enter site; click on red ‘click here’ icon, use menu at bottom of screen; select studies and references then London case study
5. Christchurch City, New Zealand – sustainable energy strategy
6. California, USA – renewable energy technologies and policy proposals
   www.law.berkeley.edu/files/In_Our_Backyard_Dec_3_2009(1).pdf
7. Water Demand Management – A framework for Councils
   www.beaconpathway.co.nz/further-research/article/a_framework_for_councils
8. Seattle, USA – saving water partnership www.savingwater.org/
9. Territorial authorities – Waste
10. Local Government – procurement
12. Local Government – Carbon Neutrality Framework for local government
13. A framework for reporting cultural sustainability
    www.landcareresearch.co.nz/sustainability/sustainability_details.asp?Sustainability_ID=120
14. Reducing greenhouse gas emissions www.carbonzero.co.nz