Open Space Strategies
Putting their money where your mouth is

Rob Greenaway

Open Space Strategies. How do you come up with such a strategy that is highly likely to get results? In this paper I look at a few essential strategic planning concepts that relate to the management and creation of open spaces. I'll discuss three case studies where strategies have resulted in 'good works'. And finally propose a simple strategic planning framework that is a good start.

But first, as they say, the news. This is just to get you in the right frame of mind. When open space strategies work, it can be very satisfying. Here is an exert from an article which appeared in the Evening Post in September this year:

Waterfront designs applauded

By ANNETTE FINNEGAN

Some of Wellington waterfront's strongest critics have been silenced.

Longtime objectors to Lambton Harbour Management's development work last night applauded future waterfront design options.

The public meeting marked an end to almost 15 months of hostility, animosity and community concern spurred on by the building of the Queen's Wharf retail and events centres - which lobby group Waterfront Watch called "Soviet ablution blocks".

Lambton Harbour's planners showed last night they had listened to concerns and revealed the options Wellingtonians might expect on their waterfront.

Their delivery took a crowd of about 200 in the Iliott Chamber through five waterfront walks, discussing ideas, issues and possible solutions.

Waterfront Watch spokesman Jim Barr, of Mt Victoria, and environmental economist, Cath Wallace, of Vogeltown, praised the planners' work.

"It's fantastic. I'm very impressed," Mr Barr said. "It's extremely pleasing after all the battling that has gone on to see such an imaginative approach."

It was the first positive public meeting during which no criticism of Lambton Harbour was raised and its suggestions were applauded.

Mayor Mark Blumsky, who chaired the meeting, said the presentation was excellent and the waterfront would be worth the wait.

Wellington urban designer Chris McDonald, Sydney-based landscape architect Penny Allan and Wellington City Council urban designer Stuart Niven dumbfounded detractors by offering a series of ideas from ongoing work by the design team and advisers. No final decisions have been made….

I'll be up front about what I mean by an 'open space strategy'. What I really mean is the component of a local authority's long-term financial strategy (as described in the Local Government Amendment Act No.3 1996 (LGA Act No.3)) that applies to whatever resources a local authority has decided are open space.

By the way, that was my definition for open space.

I have got quite excited about long-term financial strategies. Previously there has been no formal, national mechanism upon which an open space planner or strategist has been able to focus as their ultimate goal. I am of the firm opinion that we have now got the ideal end-point for all open space and recreation strategies.

However, I have also been a little depressed by them. It has proven to be a very difficult task, in my experience, to take a pre-existing recreation or open space strategy and extract a long-term financial strategy, without revisiting the original document. Strategies are, in the main, about spending money to achieve management outcomes. So we should always be able to pick up an approved strategy and say, so we need this much money to do these things over this period.

A strategy that exists to guide *ad hoc* decision making in a general direction is not a strategy, it's a policy. A proposal comes in, we look at the policy, if it fits we might allow it and maybe even fund it. The best example of this type of policy, and currently our most effective open space document, is, generally, your district or city plan. Only occasionally, however, does such a plan allow you to operate even slightly proactively. Take for example the following section of the Proposed Christchurch City Plan (Christchurch City Council Proposed City Plan June 1995, Vol 2):

> ***Policy : Environmental compensation***
> ***6.3.14 In limited circumstances, to apply the concept of "environmental compensation" where land of high landscape or natural value is protected or made available for public use, in exchange for urban development rights.***
>
> **Explanation and reasons**
> In some circumstances development may be proposed on land, where there are significant open space or natural values, an example being portions of the Port Hills. The ability to acquire or protect such land in exchange for development opportunities, is an option the Council will explore in appropriate circumstances.
>
> The acquisition or protection of land having high landscape or natural values is often impractical on account of land purchase costs. The use of the concept of "environmental compensation" (public ownership or covenants) for development rights has to be approached with some caution. But does offer a cost effective means to the community of achieving environmental benefits. This may result in development in locations which may not meet all other policy criteria, but any such arrangement must still require permitted development to be sustainable and environmentally acceptable.

I think we all take it for granted that we need to plan for resource provision over the long-term. We're talking 5, 10, 20 years, mostly the latter. But one of the key reasons Audit NZ and central government came up with the LGA Act No. 3 was because we haven't been doing it in a very tight manner. The challenge is there, we have to meet it. But not just because we have to.

This goes double for open space strategies, when compared with strategies that focus on the provision of recreation and sport facilities and services. The programmes prescribed by an open space strategy span from the grand and expensive to the small and cheap. Many - if not most - of the prime benefits of an open space strategy will not be achieved for many years, but the work needs to be done now. In Christchurch we currently benefit from both the grand Hagley Park and the few mature poplars and cabbage trees on Oxford Terrace, the Summit Road - the vision of one man, Harry Ell - and private investors spilling their cafes onto Cashel Street. Only the latter is a recent outcome with some immediate tangible benefits. The remainder are the results of big thinkers, grand schemes and long-term commitment. When we look at the case studies later in this paper you'll see what I mean.

‘Getting their money where our mouth is’ requires that the concepts that we champion appear as funded activities in an approved long-term financial strategy. Strategies that don’t will gather dust. Good strategies that do will have the opportunity to create dust storms, because they will have effectively mapped out a route from where we are to where we want to be, concluded with a decent map, and gained adequate political and community support.

I am of course assuming that a successful strategy will result in some change in expenditure pattern. The acquisition or protection of additional land, the disposal of excess land, co-operative development projects on private land, increased or decreased levels of service for parks and reserves, the redevelopment of urban transport networks, the planting of trees in the inner city, the restoration of waterways and wetlands, the coordination of outdoor events and programmes, the creation of woonerfs (streets designed primarily for pedestrians, featuring a wide variety of traffic calming measures - originally a Dutch phenomenon). The outcome of a good strategy is the development of something good or better.

All we need to do is define what is good. And to define the process by which we will define what is good.

As you can see I do not get hung up on definitions. A strategy to me is a means or a process for getting the right things done.

I’ll take a risk and say that open space strategies are harder to get support for than your average recreation strategy. I haven’t done any structured analysis but I am sure that if you do a public good/private good comparison between the recommended outcomes of a recreation strategy and those of an open space strategy you’ll find the latter has a much higher level of public good. That means there will be fewer individual drivers in the community for the open space outcomes since there will be fewer readily identified personal beneficiaries. But add all the public good benefit together and the net result will be the same. Not that you could ever measure it. As a result, successful open space strategies need visionaries. A John Logan Campbell or two.

What this also means is that if an open space strategy loses momentum, it generally doesn’t just slow down. It stops. It gathers dust. Staff changes occur. Politicians move on. Communities lose interest. So I believe that when we write a brief for an open space strategy the end result is a long-term financial strategy. A long-term defined commitment. Not just a ‘broad statement of how goals will be achieved.’ You have to go all the way. One may not rest or feel that anything has been completed until at least the long-term financial strategy is there. Until someone has put their money where your mouth is.

Engineers often seem to appreciate this, despite themselves. Planners, not so much.

I haven’t finished with definitions. When I marked papers at Lincoln University I found the most dull essays always began with a dictionary definition of terms. However, it often saved later embarrassment, or a low grade, when the writer missed out focusing on the core focus of the topic. Rather like my first bioscience essay on old man’s beard. I spent a week writing about a lichen.

Strategy, by dictionary definition is about killing people as effectively as possible. The earliest strategists were military figures. I would have ignored this definition if I hadn't come across an article in the Harvard Business Review - as you do - titled Strategy as Revolution and written by Gary Hamel (July - August 1996, pp 69-82). Hamel is a business guru, amongst other things.

Hamel has some almost militaristic attitudes towards corporate strategies, and they fit here very well. I like his perspective, see many parallels in my case studies, and I believe some of his opinions will ring bells with many of you. This is inspirational stuff.

First he believes that strategic planning, as it stands, is not very strategic. Rather it is extrapolative. In his words, "It works from today forward, not from the future back, implicitly assuming, whatever the evidence to the contrary, that the future will be more or less like the present. Only a tiny percent of an industry's conventions are ever challenged…. Perhaps most disturbingly, strategy making is often assumed to be easy, especially in comparison with implementing strategy. But of course strategy making is easy when the process limits the scope of discovery, the breadth of involvement, and the amount of intellectual effort expended. Of course the goal is easy when the its goal is something far short of revolution."

Hamel believes strategy making must be subversive. "What defenders of orthodoxy see as subversiveness, the champions of new thinking see as enlightenment."

It gets better. "The bottleneck is at the top of the bottle…. The organisational pyramid is a pyramid of experience. But experience is valuable only to the extent that the future is like the past. In industry after industry, the terrain is changing so fast that experience is becoming irrelevant and even dangerous. Unless the strategy-making process is freed from the tyranny of experience, there is little chance of industry revolution."

He goes on the suggest that, "The capacity to think creatively about strategy is distributed widely in an enterprise. It is impossible to predict exactly where a revolutionary idea is forming; thus the net must be cast wide…. To help revolutionary strategies emerge, senior managers must supplement the hierarchy of experience with a hierarchy of imagination. This can be done by dramatically extending the strategy franchise."

You will see parallels between this and the Vancouver case study. He's talking inter-disciplinary teams and effective, imagination consultation.

Two last things from Hamel, and I think these are the best.

"Just as a political activist who fails to influence those with legislative authority will make little lasting difference, a strategy activist who fails to win senior managers' confidence will achieve nothing. Senior managers may not have a monopoly on imagination, but they do have a monopoly on the allocation of resources. To bank-roll the revolution, senior executives must believe, both intellectually and emotionally, in its aims. So although the revolution doesn't need to start at the top, it must be understood and endorsed by the top. In the traditional model of strategy creation, the thinkers are assumed to be at the top and the doers down below. In reality, the thinkers often lie deep in the organisation, and senior managers simply control the means of doing."

The case studies bear this out.

And finally. “If nervous executives open up a dialogue and then ignore the outcome, they will poison the well.”

What those last statements allude to, and which Hamel expands on, is that a completed strategy must have buy-in from all those concerned, and if that is the case, implementation should be a breeze.

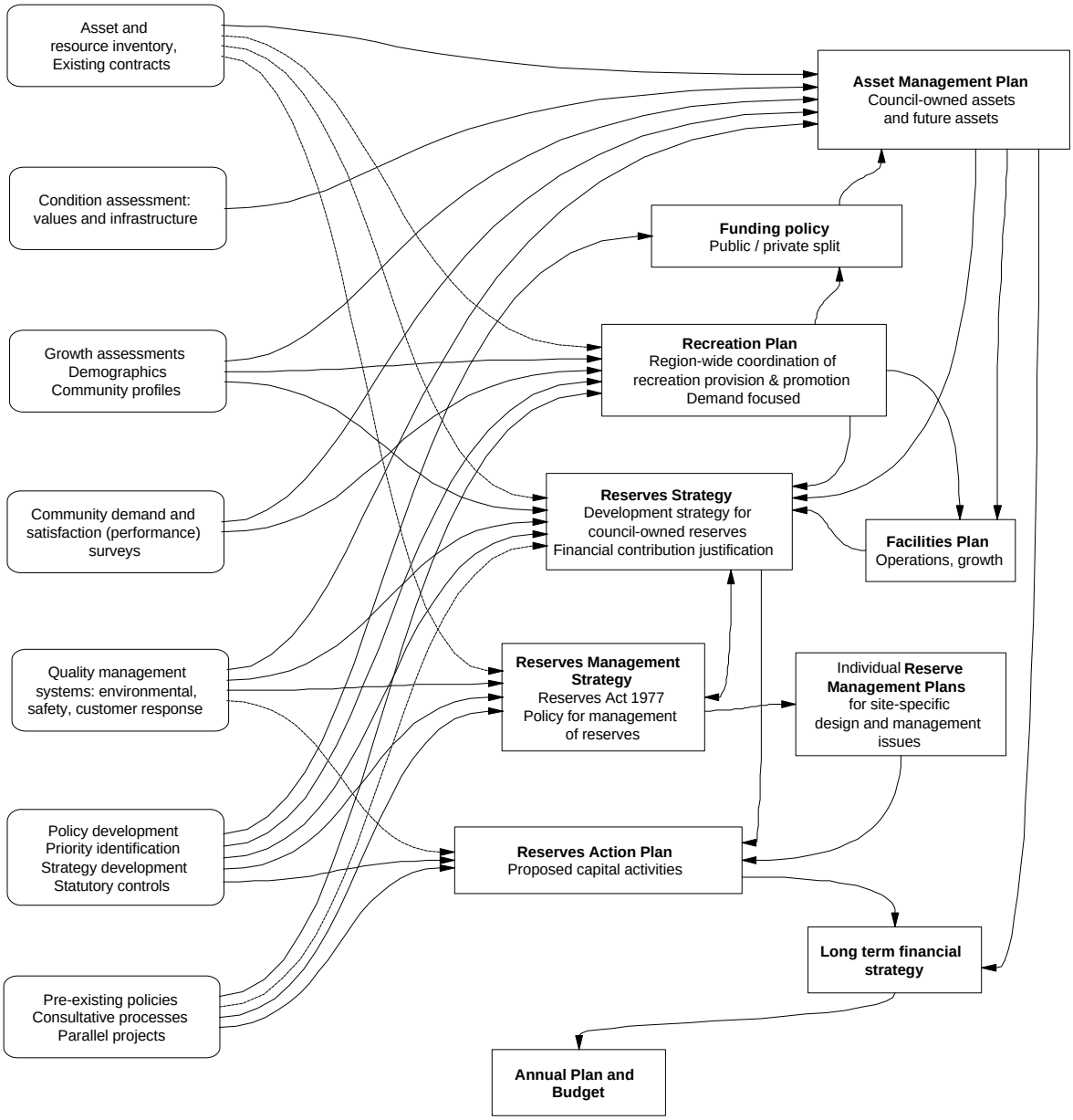
I maintain that implementation is part of the strategy. There needs to be a seamless move from one condition to another.

With that in mind, what is an ideal strategy process for open spaces?

Here’s a generic one that the New Zealand Institute of Management (NZIM) has published.

The only big thing I want to mention is the fact that it begins with an idea and finishes with a financial plan. What the NZIM calls strategic planning goes the whole distance. Otherwise this strategy process is pretty dull, doesn’t go full circle (it doesn’t monitor itself) and I’m sure you’ll find it doesn’t meld well with your reality, which is probably a little more like the following:

Find space for the open space strategy



This is not an uncommon reality. Any new strategy has to fit within this ongoing mish-mash of planning and development programmes. It's not easy.

So what makes for a successful open space strategy? One that begins with an identified need, finds some good ideas or uncovers a desire to makes things better, and ends with a funded project hitting the ground? The following three case studies offer examples of quite different open space strategies, and from those we can extract a few common threads that lead to success.

Case Study One: Elegance in Strategy
America's Highways

This case study is about open space of a kind. It reflects many issues about open space provision that we face today. How to get long-term commitment to a development which, depending upon your point of view may have either huge public good or huge private good benefits. Either way, we intuitively know the result will have value to society. Interstate Highways in this case.

First let's talk quickly about 'values' since they crop up all the time in open space planning. The NZ Institute of Management, in one of its publications defines 'organisation values' as, "stable, long term beliefs that are hard to change. Values cannot be proven or disproven - but they can be refuted or substantiated by the actions of key people in an organisation. They define what is 'right' or 'wrong', 'good' or 'bad', 'correct' or 'incorrect'. Organisational values constitute the 'culture' of the organisation, the set of beliefs that people share about what sort of behaviour is 'correct' and incorrect'. When these organisational beliefs conflict with individual personal values, people are likely to psychologically distance themselves from the organisation."

Values are hairy things. Difficult to define, forever changing. Important one day, forgotten the next. They are the Chatham Island black robins of planning. We think we need them, and we definitely do. They are the heart of open space planning.

Back to roads. You'll find this story in Bill Bryson's book, Made in America.

Very early this century the USA was criss-crossed with poor quality dirt roads, tracks and trails. It took the first transcontinental driver 65 days to get from coast to coast. In the previous age of horse-drawn coaches builders were permitted to leave tree stumps to the height of 15 inches in the middle of a completed road! America needed decent highways but central government wasn't going to fund them. In stepped a chap called Carl Fisher who decided to build, off his own bat, a two lane road from New York to San Francisco - the 3300 km Lincoln Highway. It would cost $10 million. He didn't have much money so he asked for donations and raised enough to start the job, but not enough to finish it. What to do? Fisher needed a strategy. He hit on the idea of constructing 'seedling miles'. Fisher would find a section of dirt roughly midway between two cities and pave it. He reasoned that once people got the taste of the smooth concrete they would want more. And they did. Very quickly towns along the route raised their own funds to enable them to connect to that tantalising seedling mile. In 1923 the highway was complete.

Here we have something that Fisher probably believed was a public good - something that would further America (although he probably profited from the increased demand for car headlights, which he manufactured). But he couldn't get enough money to complete it until individuals saw it some degree of private good. He used what we would call a pilot project to raise enthusiasm.

That is a very elegant strategy. Elegant strategies work. Keep the concept of seedling miles and pilot projects in your head as we review the next two case studies.

Case study two

CITY OF VANCOUVER

City Greenways Plan

In 1991 the City of Vancouver commissioned an Urban Landscape Taskforce to improve the city's understanding of the value of the urban landscape and to recommend how to manage, protect and enhance it. They adopted an eight month programme of public consultation and came up with a series of open space concepts that they believed would enhance the city's landscape, sense of community, and ultimately Vancouver's economic well-being (although the latter was not a key consideration). One of their main recommendations was the establishment of urban Greenways.

Greenways are green paths for pedestrians and cyclists, including waterfront promenades, urban and heritage walks and nature trails. Their purpose is to expand the opportunities for urban recreation, to provide alternative ways to move around the city and to enhance the experience of nature and city life. The report developed by the taskforce recommended a number of Greenways be developed within a short period of time, after the creation of a Greenway Strategy Plan and the development of a Greenway Trust.

In 1992 the City of Vancouver adopted the concept in principle and directed staff to asses the level of public interest in the concept via what is described as the 'CityPlan process'. The CityPlan is a coordinated vision for the future of the city, very much like the Wellington City Council's 1997 document 'Our City ~ Our Future'.

Support for the Greenways was gained and in 1993 the city's planning and engineering staff were instructed to pursue the concept further. A series of public workshops were held at the end of that year and additional ideas for Greenways were gained, and a number of potential projects mooted. To facilitate Greenway development an inter-disciplinary coordinating committee was formed, made up of Council staff, members of the original Urban Landscape Taskforce and members of the Vancouver City Planning Commission.

An interesting mechanism was used to define the best locations for Greenways, requiring members of the public to mark their 'desire lines' for moving around Vancouver on a map of the city. One hundred and fifty maps were drawn and digitised. A composite map was developed showing the 'cumulative overlay' of the preferred routes. The composite desire lines were co-ordinated with existing infrastructure to identify the optimal result.

The coordinating committee developed a draft Greenways Plan which was presented to the public at ten community centres and a city mall, attracting 1000 participants. Again, support was strong, although some very minor changes to the

draft were suggested, including using the term Publicways to define routes through commercial areas which were not, in fact, green.

The plan did not set the future locations of the Greenways in stone. It intended for the exact location of the routes to be fixed after further detailed consultation with residents and those affected by a development. For example, the implementation of the first new City Greenway - Ridgeway - involved extensive liaison with neighbours during the design and implementation phase.

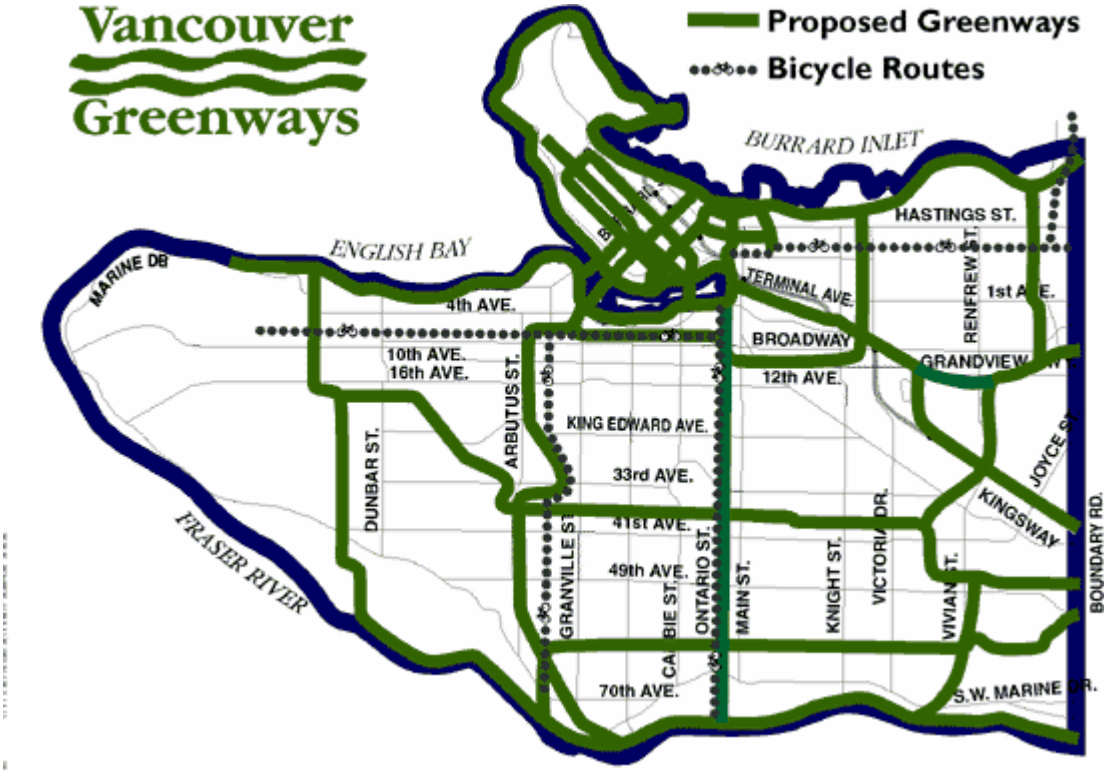
The results of public consultation included a ‘Greenways Ideas Book’ that provided fuel for developments, especially for neighbourhood Greenways, and a legacy of ideas for future consideration. Residents worked directly with a graphic artist to develop the book, rather than what traditionally occurred with a designer drawing up Greenway ideas without much public input.

The City adopted the plan in 1993 and approved $1.5 million for capital works in the 1994-96 Capital Plan. A further $3 million was later granted for the following Capital Plan period.

The Greenways described in the plan make up a core network of 140 km of access ways. Street rights-of-way make up 50% of the proposed network. Existing seawalls and seaside promenades make up another 25%. The remaining routes will be constructed to cross the city and connect to regional trail systems.

Two different types of Greenways have been identified. City Greenways are those major links which are funded entirely from Council’s ‘capital fund’ gathered from general rates. These make up the core of the network.

The ‘second tier’ of routes is described as Neighbourhood Greenways. These are small scale developments which are primarily a local undertaking, and instigated by community effort. Council funding is based generally on a 50/50 split, with support in kind and volunteer effort being counted in the community’s contribution. Council can also gather specified rate contributions from an area benefiting from a site-specific development to fund that development. The viability of Neighbourhood Greenways is treated on a case by case basis.



Michael von Hausen, currently Senior Landscape Architect of the City of Vancouver Planning Department, was a key mover in the implementation of the Greenway programme from 1993 to 1995. At the time he was Senior Planner of the Greenways Plan. I phoned him just prior to the conference to see how the Greenway concept had developed. At the time I was only aware of the original Urban Landscape Task Force report, which raised the concept back in 1992. The Greenway concept seemed the most exciting open space concept in the report, and also the most challenging, since it appeared to require the coordinated input of a wide range of disciplines - planning, engineering, policy, public consultation and so on. For that reason, I assumed that either it would have been an incredibly difficult task to achieve, and that little would have happened since the report had been tabled.

I was right on one count. It had been difficult, but a great deal has been achieved.

Michael was handed the Greenways concept as a project by the Director of the City's Planning Department in 1993, and describes the period between then and 1995 - when long-term funding was approved - as an 'uphill battle', albeit a successful one.

His role, and that of the Coordinating Committee was one of taking the concept of Greenways and turning it into a pragmatic strategy with all the community, political and financial support needed to make the concept a reality

The key success factors he has recognised include:

- Gaining the involvement and commitment of senior members of a range of disciplines, especially the engineering team, and all other constituency groups,
- Gaining 'constituency support' from both the community and the politicians,

- Using successful pilot projects to offer evidence of potential future successes,
- Treating the Greenways as an infrastructural asset, not a cosmetic addition to the city,
- Not getting hung up at too early a stage on fiscal issues, but holding strong to the tenet that ‘good ecology is good economics’ (that is, the less hard infrastructure a city requires, the cheaper the asset is to install and maintain, and the more effective the amenity resource),
- Allowing the process to evolve incrementally and to gain appropriate footholds,
- Maintaining the integrity of any information provided by consulted parties.

The latter concept was effectively achieved with the ‘desire line’ process. The development committee was able to show the composite desire line map alongside their recommended Greenways and illustrate the effectiveness of the consultation.

In addition, the concept of Greenways was highly compatible with the city’s ‘Environmental Agenda’, as the Greenways provided alternative methods for moving around the city and set priorities for pedestrians and cyclists. The city also operates a separate cycle route plan which overlaps with the Greenways in places.

Michael reports that the development and advancement of new ideas in a bureaucracy is a very hard task. The concept did not fit within the existing culture and so there was some strong resistance. Either the concept was hit hard or often ignored. The role of the advocate was essential if the idea was ever going to make it to the funding stage.

In Michael’s words: “Most people had trouble with the definition initially. I think many people were not convinced as they did not know what these Greenways were, especially where they were located on streets, but as the definition became clearer, so did the support. It is a gradual process, very much aided by pilot projects. It is now part of the City's and each neighborhood’s "currency" for future planning.

Michael discovered that adopting the role of the diplomat was very necessary. “You have to argue from the viewpoint of the ‘other party’,” he says. “To achieve your outcome you have to understand and respond to others’ interests. In the words of an Italian diplomat: ‘Diplomacy is having the other person get your way’.”

As a result of adopting an interdisciplinary approach, the Council has ended up with a Greenways branch in the City’s engineering division and a dedicated Greenways planner in its planning division (Allan Duncan).

The City publishes a range of information about the Greenways programme (and a blueways concept for their waterways and coast) on the Internet.

In summary, the Vancouver Greenways appear to have been successful for several reasons:

- The original Urban Landscape Task Force had good political support from inception. The Mayor of the day, Gordon Campbell, was the convenor and Moura Quayle, chair of the original Urban Landscape Taskforce, continued to actively support and lobby for Greenways during the development of the plan.
- The taskforce based their recommendations on current preferences, identified by consultation, and the momentum created of a number of previous studies. As a result it seems that the concept had perfect timing.

- The vision was stated clearly, and in an inviting manner.
- The project quickly gained an advocate who was willing to steer the exercise for a number of years, and to take risks.
- A high level of communication was maintained with all concerned. It doesn't appear that the idea ever went quiet.
- Multi-disciplinary teams were involved. No one 'kept the concept to themselves'.
- The implementers - particularly the city engineers - were part of the team from almost the beginning.
- Successful pilot projects could be referred to as examples.
- By the time budgets were calculated there was clearly identified political and community support for the programme. Some expectations had been raised and delivery was expected.

Case Study Three: Christchurch City Council Land Drainage Unit
Natural Asset Management Plan for Waterways and Wetlands

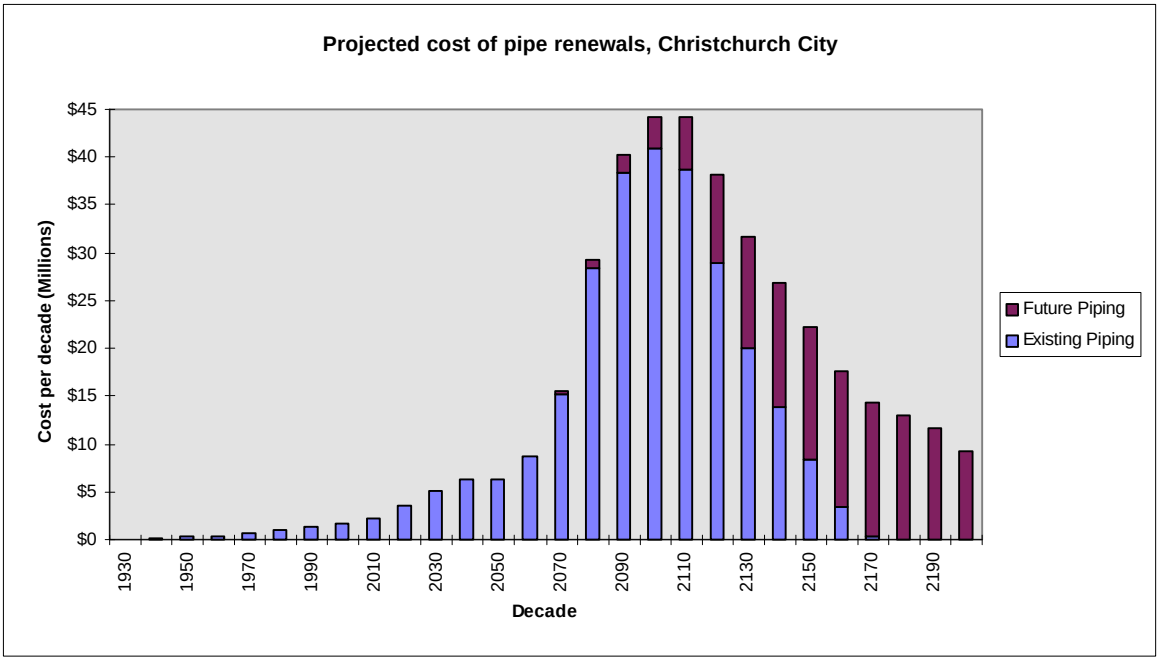
In 1996 the Land Drainage Unit of the Christchurch City Council was required to develop an asset management plan for the maintenance, operation and renewal of its drainage network and the city's waterways and wetlands. The requirement coincided with a belief that the traditional approach to managing these assets required a significant re-think. The team quickly realised that their asset management plan needed to be, in reality, an asset management strategy, as it would require the adoption of a new approach to managing the drainage system. This would involve a whole range of cost implications. The asset management strategy could not be merely extrapolative. It had to identify and gain support for a whole new vision.

The background is a long story. Management philosophies for the city's wetlands and waterways have changed substantially over the past century, as has their appearance. The Christchurch Drainage Board, which managed the city's waterways and sewers from 1875 until 1989, had a very clearly defined focus for waterway management - to drain the city of surface waters. In the late 1800s Christchurch had the highest level of mortality of any New Zealand centre. Most deaths were due to the water-borne diseases typhoid, diphtheria and dysentery. Flooding was also a regular problem. The Drainage Board focused on the creation of fast draining water channels - straight and with few obstructions. The city's original cover of flax, raupo and fern quickly disappeared.

While the activities of the Canterbury Drainage Board have ensured that the frequency and effects of flooding in Christchurch are significantly reduced, it has created a very large number of structures that require costly maintenance and, eventually, complete replacement. These structures include concrete and brick

pipes, concrete and block lined culverts, timber drains and a variety of retaining walls for river and stream banks. Their cost of replacement will be mostly borne by future generations.

These structures have also allowed us to place roads and buildings very close to waterways. This has forced waterways into tightly confined channels, supported by expensive engineering structures. When drainage was seen as the main function of waterways, this treatment served its purpose. However, it now means that the city risks becoming trapped within a cycle of installing, repairing and replacing a very large number of structures and vast lengths of concrete and brick pipe. The chart below illustrates the likely costs of replacing just the pipe network. The cost is immense and it indicates that the city must develop means of exiting from the 'utility trap'.



By the time the functions of the Board were absorbed by the Christchurch City Council late last decade as a result of local body amalgamation, most, if not all significant flood mitigation requirements for the city had been completed - the Woolston Cut on the Heathcote River being the last.

With these major works complete, and a more comprehensive resource management focus being adopted at a national level, the city's waterway management style began to evolve. The Christchurch City Council, through the Land Drainage and Parks Units, adopted a more comprehensive resource management style when it gained responsibility for the city's waterways. This is exemplified by a number of projects on the Woolston Loop and the manner in which Corsers Stream was developed. With drainage seen as only one component of the functions of a waterway system, the result of drainage works would never be the same.

Corsers Stream functions as a true environmental asset and an effective drainage system.

A waterway would have previously been piped or managed in a very utilitarian fashion.

A strategy was required to identify:

- What was the existing status of the waterway and wetland system,
- How the city would like to see the waterways and wetlands managed in the future (a vision or set of strategic goals),
- What treatments, activities or mechanisms were required to achieve the vision,
- How much would it cost to achieve the vision,
- What priorities should be set on each activity (which actions were ‘critical’ to the achievement of the vision) and on each waterway (where should we start?),
- What target should be set for achieving the vision.

Two main resource groupings were chosen: waterways and wetlands; and utilities. These were further subdivided into asset groups which shared some common characteristics. It was anticipated that at later stages of the process, detailed data relating to specific assets would be collected, and that early asset groupings would need to be sufficiently robust to accommodate logical subdivision. A conscious decision was made to fully understand planning and information requirements before embarking on detailed data collection.

The system worked because:

- The level of knowledge about the assets amongst key staff was high,
- The Unit consciously avoided being bogged down by detail,
- External consultants sought a high level of clarity in the assumptions made and maintained a close eye on how the data would ultimately link with a justified long-term financial strategy.

The following table shows some of the concepts that identified the features of each asset group.

	Engineering Solutions (Utilities)		**Natural Solutions (Waterways and wetlands)**
Waterways	Private ownership Minimum setbacks Hard edges Straight Increased channel capacity Silt dredging		Covenants, public and private ownership Coordinated (inter-unit) Buffer strips, Natural vegetation Flood storage Sinuous Flood peak reduction
Wetlands	Flood storage		Rehabilitate / Enhance / Protect Water quality
Springs	Control		Rehabilitate Protect Maintain charged aquifer
Riparian areas	Steep sides Minimum land use Engineering driven		Land protection Wide berms, buffer strips Natural vegetation Landscape driven
Retention areas	Little focus on retention - more on increased channel capacity Minimum land use		Flood peak reduction Treat as wetland Water quality, Habitat
Amenities	Controlled / limited access Formed, isolated recreation opportunities		Open access Natural habitats Variety of longitudinal recreation opportunities Coordinated (inter-unit)
Information / management	Physical measures Engineering design criteria Capital works		Community consultation Habitat assessment Environmental indicators Multi-disciplinary design teams Catchment planning

Plan or Strategy?

The Land Drainage Unit was faced with two key demands for asset management: cost accountability and the identification of long term strategies for managing, in an holistic manner, a varied and changeable resource. The decision was made early on in the process to develop an asset management process that would:

- Represent all data in an easily understood and accessible manner,
- Quickly identify strategies that would identify and then gain council and community support,
- Consider all elements of resource management, especially social and environmental,
- Illustrate the need to move away from a utilitarian focus for resource management,

- Fulfil the need to present a comprehensive long-term financial strategy,
- Gain the support and involvement of the staff who are to implement the plan,
- Ensure that both risks and opportunities were given equal billing in the asset management programme,
- Give a clear ‘valuation’ of the waterway and wetland resources in terms that allowed the setting of work priorities and the analysis of efficiencies, but which would not cloud the programme with nebulous concepts of market and non-market valuation for natural resources.

The Land Drainage Unit realised early in the process that the ‘asset management plan’ would be as much an ‘asset management strategy’.

Critical assets

The concept of identifying critical assets varied for the utility and waterway and wetland assets. The former focused on assets, which if they failed or remained at a low condition, would cause serious problems with flooding, for example. While drainage remained a key utility focus for waterways and wetlands, the need to manage the resources for a wider range of values was evident. The question was asked, for example, could an ecological asset ever be considered critical? And if so, how critical?

The Unit decided that if an ecological resource couldn’t be ‘critical’ then it would be very difficult to justify expenditure on ensuring these assets survived when competition existed for expenditure on hard assets, like roads, sewerage, etc.

The Land Drainage Unit was previously aware of the ongoing compromises to their ability to manage their resources sustainably due to demands for, for example, piping of waterways, encroachment on waterways in new and existing subdivisions, and increased run off from land developments. Many of these impacts were recognised in the city plan.

‘Lost opportunity’ became a measure of criticality for natural assets. It was necessary to identify the optimal condition for a variety of management outcomes and resources, and to assess what activities were ‘critical’ to ensure the opportunity to achieve that outcome was not lost forever. The activity of ‘land protection’ was identified as a critical activity for natural resources, and a budget item in the long-term financial strategy.

Identifying existing levels of service

Identifying with the concept of sustainable management is pivotal to the process of managing natural assets. Sustainability is an essential level of service issue. The data to support this precept is readily available, and was easily transferred into the asset management programme for waterways and wetlands. The Proposed Christchurch City Plan was an essential source for identifying the social and environmental outcomes of resource management. The need to focus on social and environmental outcomes (landscape, ecology, heritage, etc) - over engineering results (retaining walls, bridges, weirs) became apparent.

For example, the following outcomes are sought by the proposed plan. The question was how do we achieve these results, and describe and justify the expenditure in a measurable manner.

NATURAL ENVIRONMENT GOAL	Maintenance and enhancement of the quality of natural resources and their ability to meet the needs of present and future generations.
OBJECTIVE: WATER	2.2 Maintenance and enhancement of the quality and availability of the City's water resources, and of the natural values and public accessibility of waterways and their margins.
Policy: Wetlands	2.2.6 To conserve the remaining wetland areas within the City.
Policy: Aquatic Habitats	2.2.7 To enhance the City's waterways as habitats for fish and other aquatic species and plants.
Policy: Waterway Margins	2.2.8 To enhance the margins of waterways in terms of their natural, amenity and access values.
OBJECTIVE: NATURAL FEATURES AND HABITATS	2.4 The protection and enhancement of key elements and processes, comprising the City's natural environment.
Policy: Ecosystems and Habitats	2.4.4 To maintain and enhance the integrity and diversity of natural ecosystems and habitats within the City.
Policy: Extended Protection	2.4.5 To further extend and protect natural ecosystems and habitats (relates to creation of buffer areas).
OBJECTIVE: PORT HILLS	2.7 Maintenance and enhancement of the distinctive landscape and natural characteristics of the Port Hills.
Policy: Acquisition and Covenants	2.7.7 To promote greater protection of the natural character of the Port Hills through gradual land acquisition or the protection of important natural features through covenants on private land.
OBJECTIVE: ENVIRONMENTAL AWARENESS	2.9 Greater awareness of environmental issues, particularly those relating to the value of significant natural environmental assets within the City.
Policy: Natural Features and Habitats	2.9.1 To encourage greater public awareness of important natural features and habitats within the City, particularly waterways, the coast and their margins, the Port Hills and indigenous grasslands.

In contrast, other asset management plans developed for infrastructural assets focused more closely on asset outcomes; features of an asset like pot holes per square metre - rather than examining the final social and environmental advantage of the asset management activity. While this may be more difficult to achieve for some assets, the results will always be more meaningful to councils and communities.

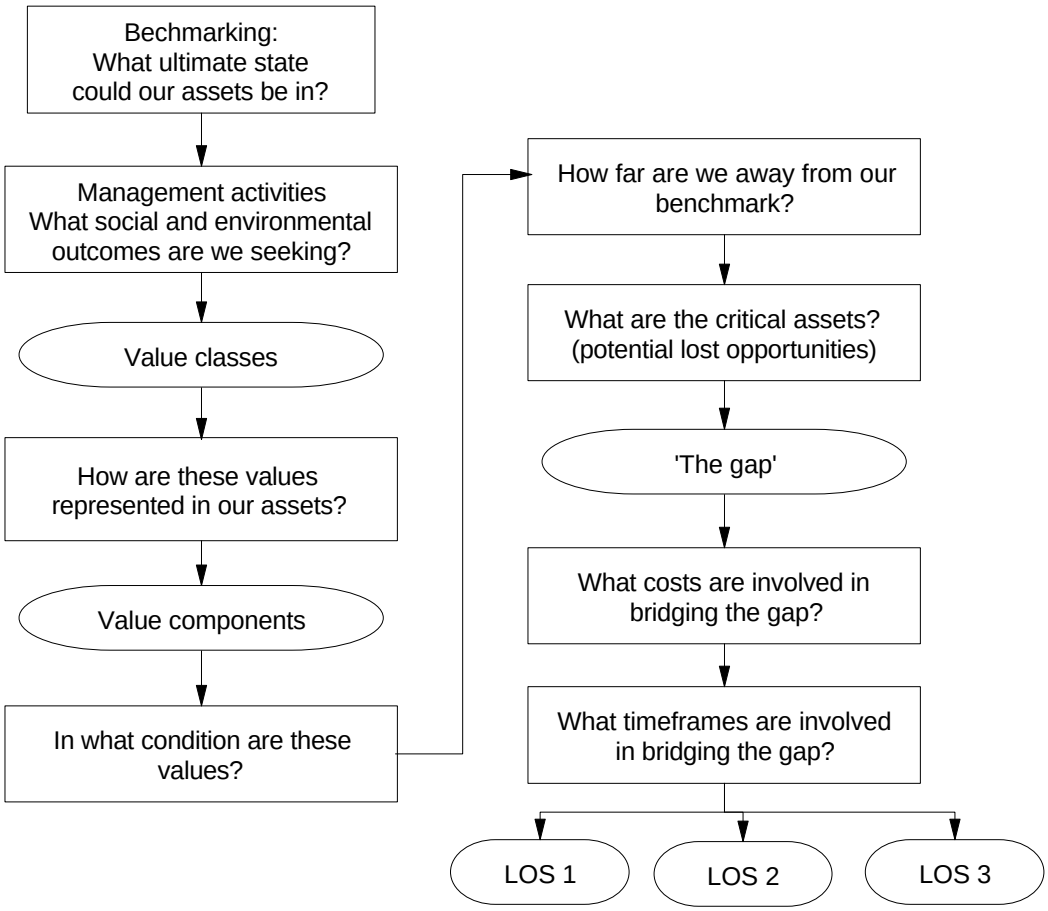
The value-based approach

The Land Drainage Unit sought an asset condition assessment procedure that satisfied the diverse needs of an holistic management focus, and a targeted and accountable resource management system that allowed level of service issues to be readily understood. The term condition was considered in two ways: First, condition in terms of the distance between the status quo and some ideal state (the benchmark); and second, in terms of the current physical condition of the asset.

Assessing the latter is a time-consuming process. Until the Water Service Unit knew what to look for in terms of physical condition, there was no real option to carry out this process. It was assumed that physical condition assessment procedures would evolve from the process of identifying exactly what it is that the unit manages for, and what elements of the resource should be checked for condition status.

The benchmarking process was therefore pursued first. In fact, the final structured asset condition testing is only beginning now, and a set of condition assessment tables have been prepared for carrying out this exercise. It is clear that the condition assessment tables could not have been developed any earlier in the exercise.

The following flow chart illustrates the process used (an LOS is a defined Level of Service).



The benchmark process was achieved via a structured workshop with council officers and a range of knowledgeable individuals from the city, including landscape architects, iwi representatives, ecologists, engineers, parks planners and so on. The Unit systematically identified just what the waterway and wetland system could deliver in its ideal state.

From this emerged a number of ‘values’ that the resources are managed for. These values generally cost money to achieve (such as planting trees for landscape, recreation and ecological values), and yet it is difficult to identify how much they are ultimately worth. Intuitively we know that a high quality landscape is of greater worth than a low quality one, but we cannot accurately say by how much. As a result it is difficult, and often misleading, to affix a dollar value to the benefit gained as a result of an improvement to a natural asset. This is the crux of a natural asset management plan: we might know how much activities cost, but not how much they are worth.

The values were grouped into the following categories:

Landscape, includes; character, aesthetic quality (including sight, sound and smell).
Heritage, includes; historical sites (structures or remains).
Ecology, includes; the processes and inter-relationships that affect native and exotic vegetation, fish, water quality, birdlife, invertebrates, etc.
Recreation, includes; active and passive recreation, play, and the structures that support these activities.
Cultural, includes: awareness and appreciation of the resources, a spiritual dimension, and educational activities.
Drainage, includes; flood control.

These values are what ‘give value’ to the natural assets that the Land Drainage Unit manages. The values can be improved, maintained or protected by carrying out development and maintenance programmes.

Each asset group was assessed for the degree to which it is managed for these values. This was referred to as the ‘value component’. A resource may be managed, for example, for 80% ecological values and 20% recreation. This process made the management objectives for any asset explicit.

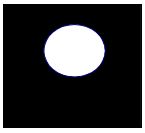
Each asset group was assessed for how each component value was from reaching its benchmark. This was described as ‘the gap’, and was measured as a percent.

The activities required to bridge the gap were identified and costed.

Different levels of service were developed based on the costs and timeframes to achieve the social and environmental outcomes required.

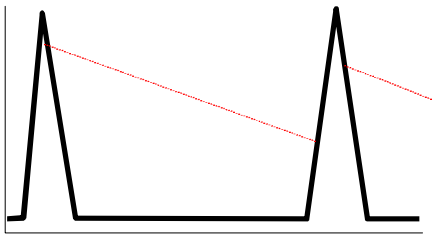
A very visual system was developed to represent this collection of data. The following gives some idea of the data presentation for three asset management options. Each shows how a treatment of an asset achieves a variety of social and environmental outcomes for one site.

Piped waterway



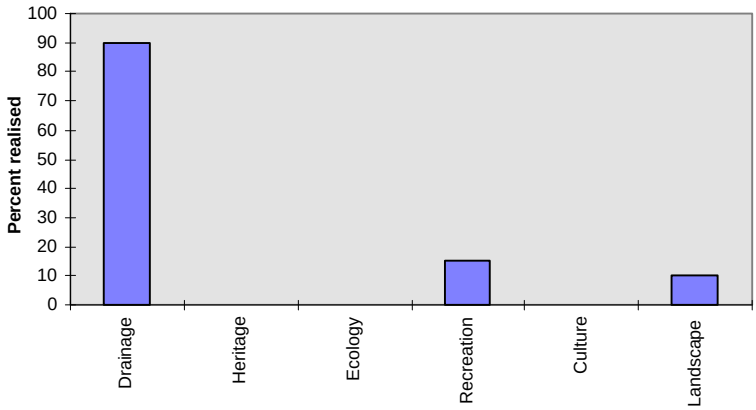
Piping

Development cost: $500 to $1300 per metre

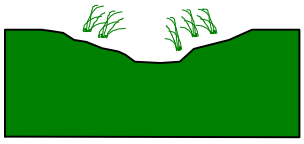


Replacement: 150 years

Values realised - Piping

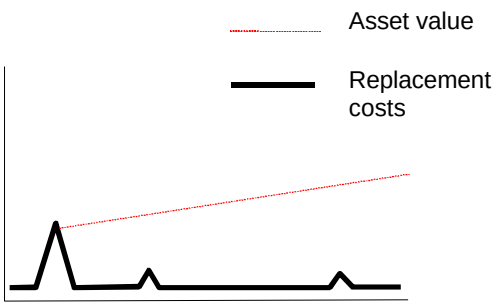


‘Natural’ waterway



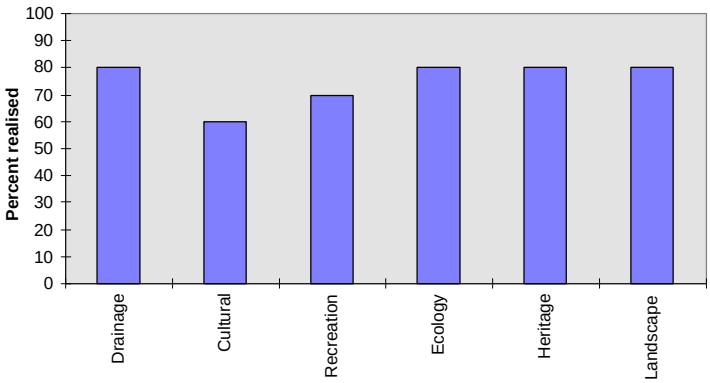
‘Natural’ Channel

Development cost: $30 to $1000 per metre



Renewal: perhaps never

Values realised - 'Natural' Channel

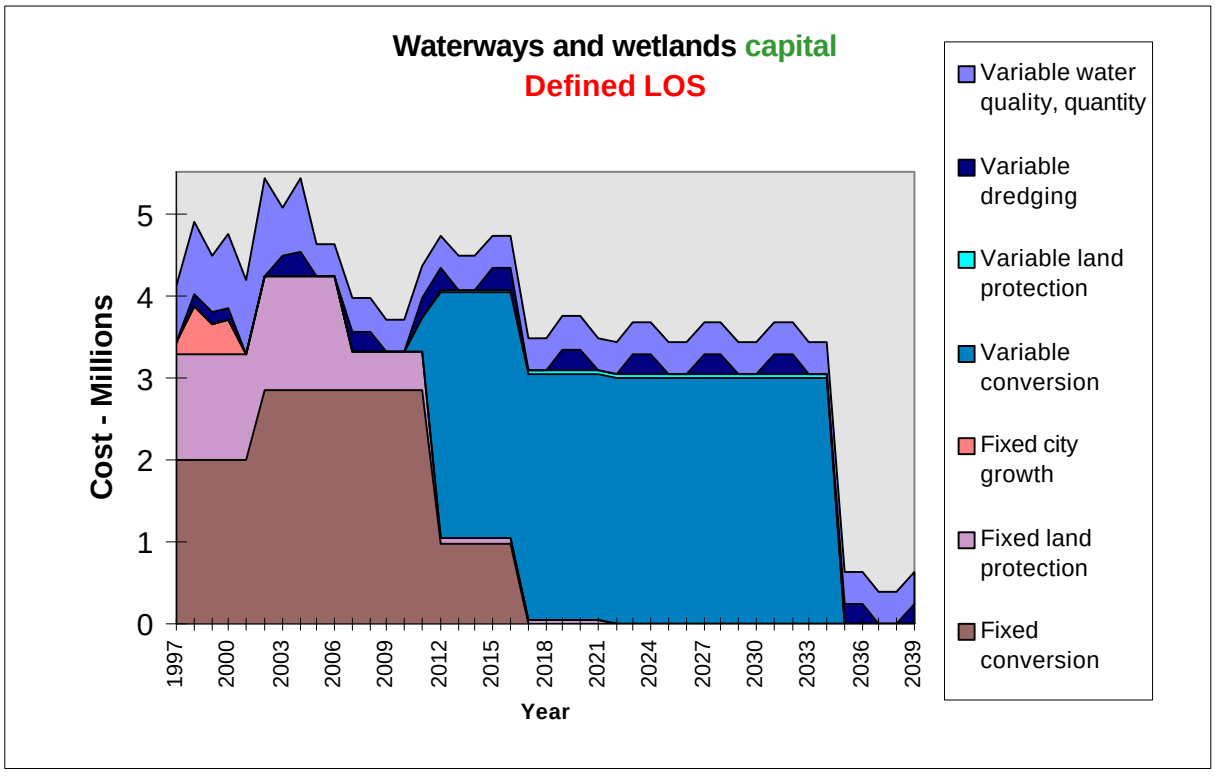


Level of service and cost options

The term ‘restoration’ was used to describe the activity of moving from an existing condition towards a benchmark condition. This involves focusing on the management of the ‘values’ previously identified: landscape, recreation, ecology, heritage and culture. Restoration may involve planting, regrading, bank protection, joint management programmes with iwi and residents, interpretation and so on.

To achieve restoration (and the values identified), the protection of land resources is often necessary, through purchase, covenant, reserve, etc.

It was necessary to develop a series of broad level of service options that represented the outcomes of different rates of expenditure on both restoration and land protection. Two options were adopted for these activities in each resource grouping: the activity was either ‘fixed’ for critical assets (where an opportunity may be lost if the activity is not undertaken within a fixed period), or ‘variable’ for non-critical assets. The level of service options then related only to what period should the variable activities be carried out. The following chart gives an example.



The provision of visuals to illustrate the outcomes of these levels of service options were essential.

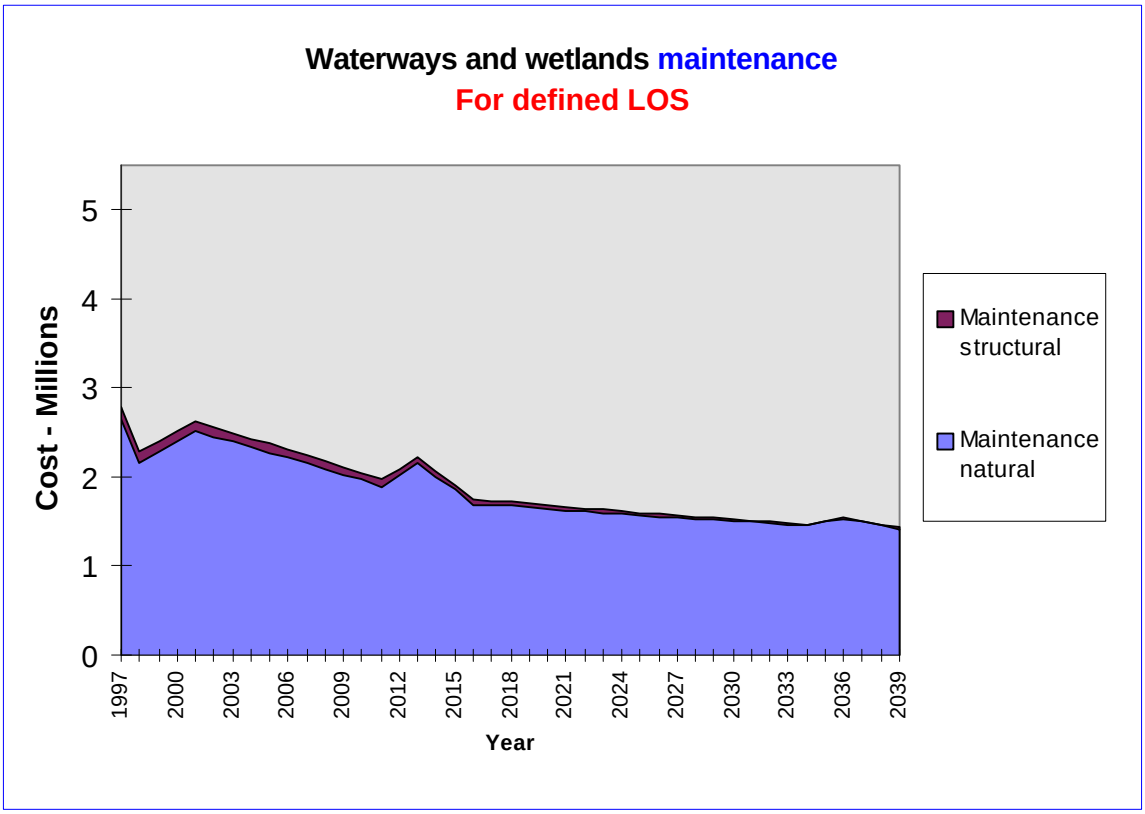
Costs and timeframes

The concept of sustainability in asset management meant that the cost areas of renewal and operations and maintenance for natural assets should be showing a reducing cost over time. If the unit was seen to be carrying out management

activities that increased renewal and maintenance costs, then the management options would clearly be at fault.

A spreadsheet was developed to calculate the impact 'bridging the gap' would have on these cost areas. Costs were extrapolated from past experience.

The following example illustrates in dollars what sustainability means. The chart is based on a particular chosen level of service for restoration and land protection.



Conclusion

The key result of the asset management process has been the identification of what the Land Drainage Unit is managing its assets for: creating sustainable asset conditions that realise social and environmental values, at a declining annual cost in the long term (the very long term).

The Land Drainage Unit knows what values it is managing for and is now able to systematically collect data that will enable it to make clear management decisions in terms of where it undertakes work, what activity it involves, what outcomes are expected, and what priority level the work is at.

Most importantly, the Unit now sees itself as performing a multi-dimensional role. This has required an examination of its basic organisational structure so that its members' skills are directed towards achieving the wide range of necessary outcomes. The Unit's basic design manuals must now be revisited so they target the management of values, as these are now its measurable outcomes.

A considerable benefit is that Unit now has the political backing to achieve this transformation. The strategy process encouraged the Unit to re-think its direction, with the benefit of a captive political audience, and a loose structure around which it could develop an appropriate waterway and wetland management system.

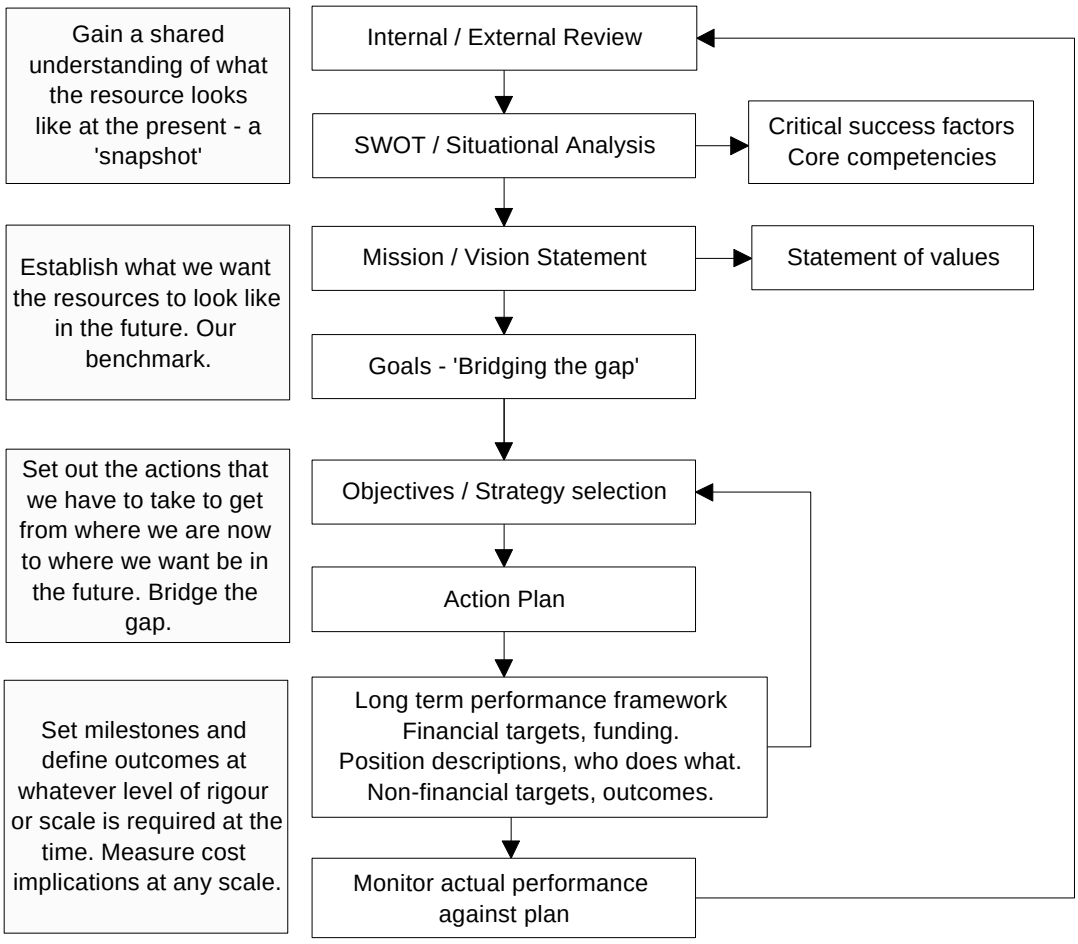
Critical success factors to the success of the strategy to date included:

- All concepts were timely and in accord with the objectives and policies of key guiding documents.
- A wide inter-disciplinary team was involved.
- Successful pilot projects pre-existed the strategy.
- Data representations were very visual and easily understood. The concepts were very simple.
- A forum for assessing the strategy existed in the form of the asset management programme being undertaken by Council.
- Team leaders had a firm belief in the vision.
- Implementers were part of the team. In fact, they led the project.

So what is a good framework for a good strategy?

As far as I am concerned, for an open space strategy to achieve anything - and form a happy marriage with a long-term financial strategy - it must have internal and external stakeholder support which has been gained through some sort of credible strategic planning process.

Here is an approach ‘that does’. It isn’t right. It isn’t entirely wrong. It’s something to base an approach on and to modify to suit your environment. It is founded on one of those photocopied things you find in a bottom draw and play with over a few years. I apologise if I have played with someone’s baby here.



Strategy development and implementation is, however, a live, dynamic process. It’s not just a system.

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