Heritage Management: Principles for an Asset Management Approach

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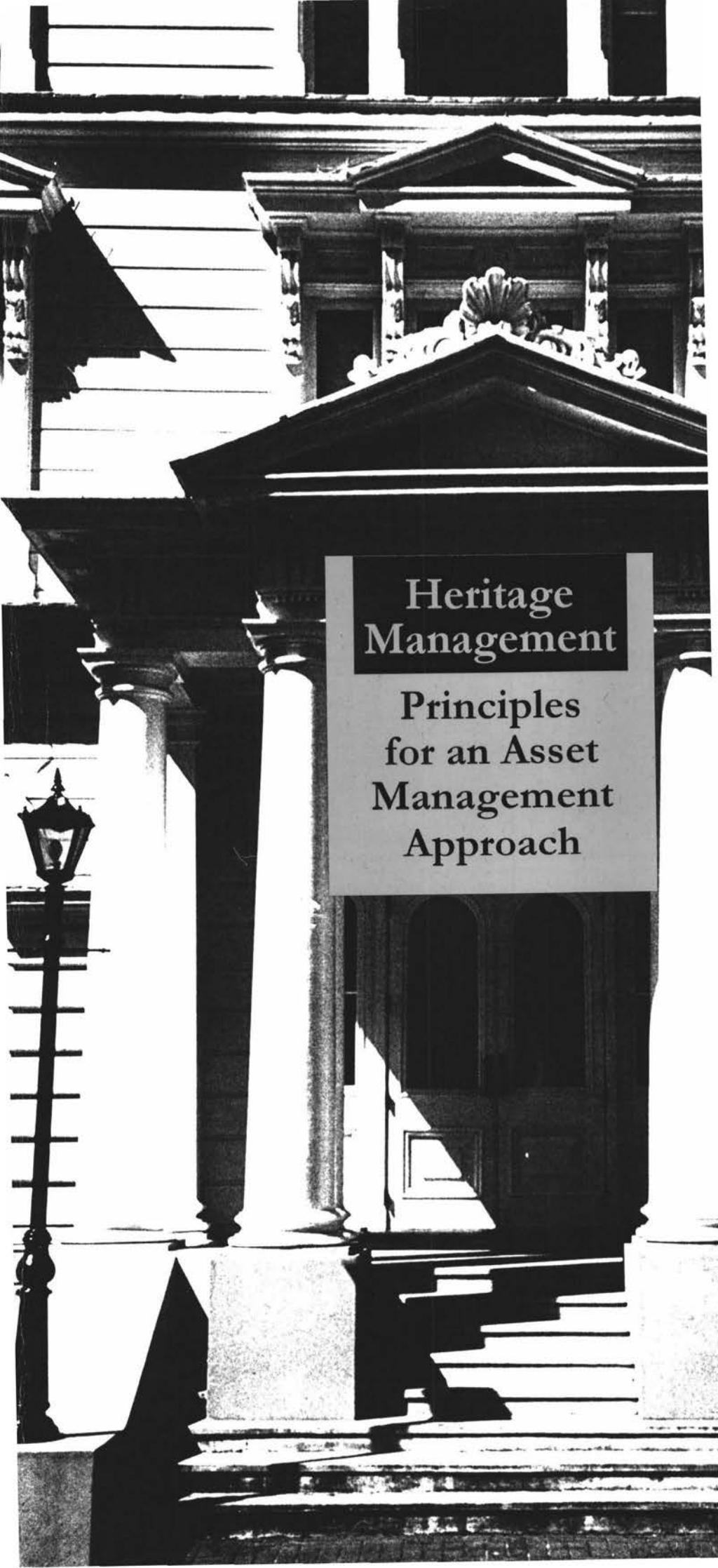
Heritage Management

Principles for an Asset Management Approach

Abstract

The recent Government reviews of heritage management in New Zealand have highlighted a number of problems that are contributing to a continued loss of our heritage resource. These problems include: inadequate central government leadership and local government administration; conflict of commercial and community interests; inadequate funding; and physical deterioration of heritage places as a consequence of poor knowledge and management practices. Although policies in various government agencies are designed to address these issues, the results demonstrate that policies have largely failed in their implementation. In response to these problems, this dissertation investigates and develops a new approach for heritage management drawing on the asset management plan and proposes a series of principles to adapt the plan to improve heritage management.

A literature review of heritage management identifies the causes of heritage place loss, and reviews current approaches to heritage management. This is followed by an appraisal of asset management as a potential framework for heritage management. The asset management plan is compared with heritage management objectives to determine whether the plan can be successfully adapted. Three heritage asset management plans are investigated to reveal issues specific to heritage place management. These issues are analysed in conjunction with the plan methodology set out in the *New Zealand Infrastructure Asset Management Manual* to guide the development of a series of heritage principles. The principles are reviewed by five experts to evaluate their feasibility for underpinning heritage asset management plans.

It is shown that a new approach to heritage management needs to be adopted to protect heritage places. Many agencies currently implement asset management plans and have the ability to apply the methodology to heritage management. Some agencies have already begun to adapt the asset management plan for heritage. If heritage asset management plans are to address current heritage issues adequately, they need to incorporate sustainable management objectives, full lifecycle management and long-term strategies to secure resources. The principles proposed in this dissertation are designed to promote a comprehensive and consistent approach to the preparation of heritage asset management plans. If widely implemented as a management tool by central and local government agencies, the heritage asset management plan could provide the basis of an integrated, structured and long-term process for heritage management in New Zealand.

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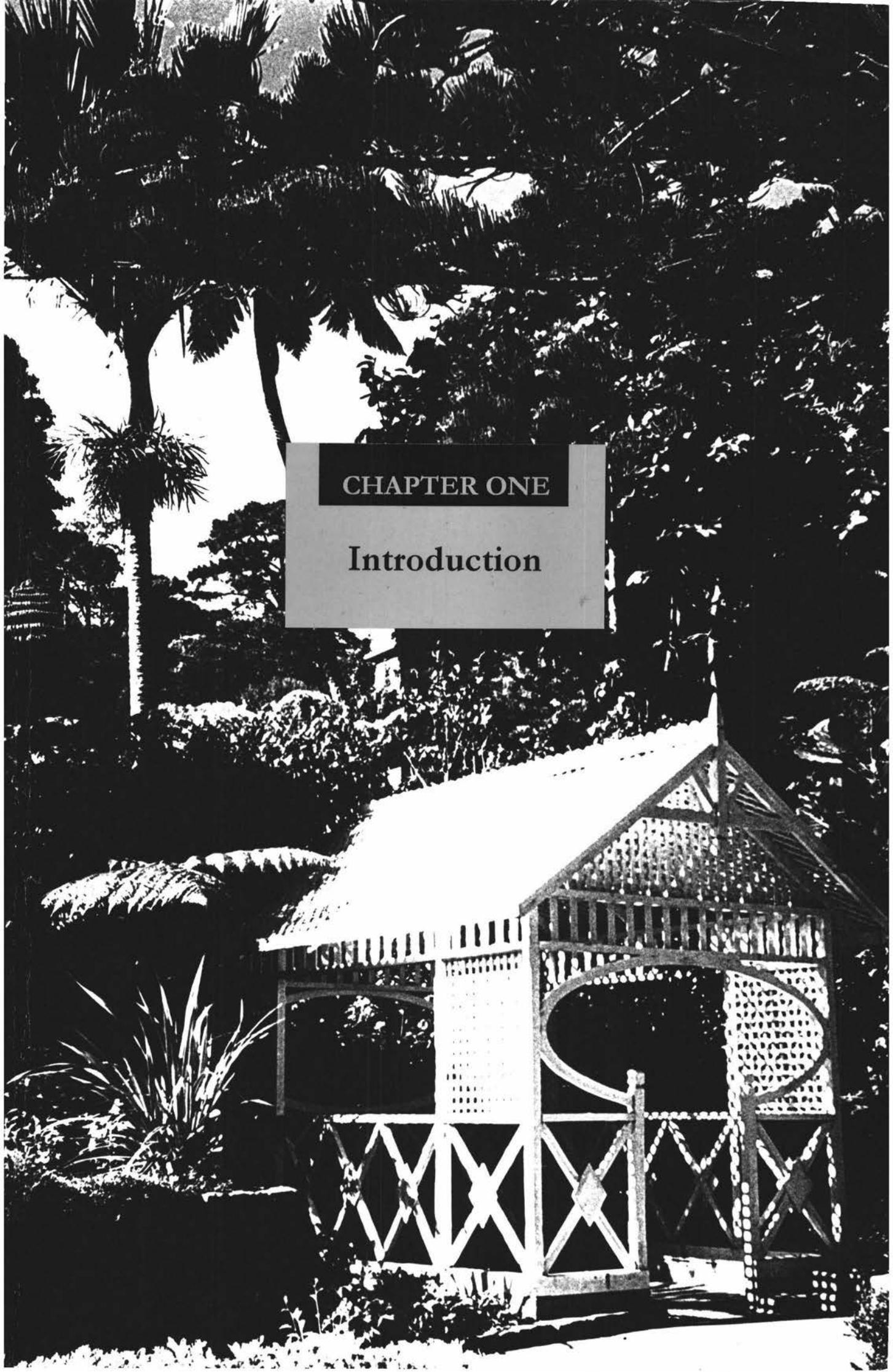
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CHAPTER ONE

Introduction

Introduction

Our historic heritage places help define who we are as individuals, communities and as a nation. These are the historic heritage buildings, items, sites and spiritual associations unique to every individual and community. New Zealand has a wealth of heritage places that represent a diverse human history spanning over a thousand years. We plan our future with the knowledge of our past. If future generations are to benefit from New Zealand's historic heritage, it is important that we manage the resource in a sustainable manner today.

New Zealand's heritage places are threatened by many factors ranging from economic pressures to inadequate administration and physical deterioration. Although there is significant support for heritage protection this has not been translated into action. Heritage places are still being lost and are irreplaceable. Developing strategies to actively protect both public and private heritage places in New Zealand is a difficult task, shared by central and local government as well as private heritage owners.

At present, regional councils and territorial authorities develop heritage policies and identify places for inclusion in heritage schedules. Unfortunately policies and schedules alone will not save heritage places. The difficulty of managing and funding heritage places is borne out by the continuing loss of the resource.

A recent review of heritage administration in New Zealand has proposed significant reforms to address the deficiencies of heritage management. The Resource Management Act 1991 and the Historic Places Act 1993 currently guide heritage management and protection. If the Resource Management Act Amendment Bill (1999) is enacted as currently proposed, historic heritage places must be managed as a sustainable resource.

A new approach to heritage management which translates policy into action and is aligned with mainstream planning processes may improve heritage protection in New Zealand. How this might be achieved is the challenge this dissertation seeks to address.

Dissertation Aim

The aim of this dissertation is to select and adapt a method which can effectively implement heritage management policy in order to achieve sustainable management of the resource. The asset management plan, currently used by councils to manage infrastructure assets, is investigated as a potential framework for heritage management. The primary goal of the dissertation is to determine whether the asset management plan is capable of delivering better heritage management and if so, what modifications and principles would be necessary to develop an asset management plan for heritage places.

Dissertation Objectives

The following objectives have been developed to achieve the aim of the dissertation.

- To examine heritage management in New Zealand in order to identify specific management problems.
- To determine whether the asset management plan methodology has potential to be adapted to heritage management.
- To investigate and compare three heritage asset management plans with the conventional asset management plan to clarify the main differences and identify where modifications are required.
- To make modifications to the conventional asset management plan and develop principles to guide the preparation of heritage asset management plans.
- To carry out an expert review of the proposed principles to determine the feasibility of implementing heritage asset management plans.
- To make recommendations on the implementation of heritage asset management plans.

Research Methodology

The methodological approach which guides the research is presented in Figure 1.1. The diagram sets out methods used to address each objective, the steps in the research process, and sequence of chapters.

Objective one is achieved by conducting a literature review of heritage management. This is followed by a literature review of asset management planning. A comparison between asset management plans and heritage management policy objectives and processes determine whether the plan can be adapted to heritage management. This achieves the second objective.

The third objective is met through case study investigations of three heritage asset management plans. The plans are selected to illustrate different approaches to heritage asset management planning by central and local government agencies. The first case study uses a literature review to investigate an Australian heritage asset management plan in operation since 1996. Two further case studies comprise New Zealand heritage asset management plans in their final stages of preparation. The Wellington Regional Council's 'Regional Parks and Natural Forestry Asset Management Plan' and the Department of Conservation's 'Historic Heritage Asset Management System' provide examples of how heritage asset management plans are being developed to manage heritage places within different contexts. Methods include a literature review supported by interviews and personal communications (phone and email) with Council and Department staff responsible for preparing the plans. Participation in a Department of Conservation 'visions' workshop provided first hand experience of service level setting and resource allocation. Each case study is analysed against a set of criteria derived from the components of asset management plans.

A comparative analysis concludes the case study research. The heritage asset management plans are compared with the conventional asset management plan (derived from the *New Zealand Infrastructure Asset Management Manual*) to identify where divergences occur.

Figure 1.1 Research Methodology

Objectives	Research Process and Methods	Chapters
	Research aim	**Chapter 1:** Introduction
Define the problem	**Literature review**	
	Heritage Management	**Chapter 2:** Heritage Management
Determine whether the asset management plan has potential to be adapted to heritage management	**Asset Management**	**Chapter 3:** Asset Management
	Compare heritage management objectives and process with the asset management plan	
Clarify similarities and differences between heritage asset management and conventional asset management to guide modifications	**Research** Heritage asset management case study review: Interviews, literature review, workshop participation *Compare heritage asset management plan case studies with conventional asset management plan theory*	**Chapter 4:** Heritage Asset Management Case Studies
Make modifications and develop principles for heritage asset management plans	**Analysis and design** Proposed modification to asset management plan to provide for heritage assets. *Analyse conventional asset management theory, review heritage case study approach, design modifications and principles for heritage asset management plans*	**Chapter 5:** Principles for Heritage Asset Management Plans
Determine feasibility and refine proposed principles	**Critique** Expert review of proposed modifications and principles	**Chapter 6:** Expert Review
Principles for heritage asset management plans	**Conclusion**	**Chapter 7:** Conclusion

The points of divergence are areas where modifications to the conventional asset management plan are required to adapt the plan for heritage management.

Reviews of asset management theory (*New Zealand Infrastructure Asset Management Manual*), analyses of the special requirements of heritage places and the case study findings provide the direction for adapting the asset management plan for heritage management. Objective four is achieved through the development of a series of modifications and principles to guide heritage asset management plan preparation.

An expert review by planners, asset management and historic heritage experts is carried out to ascertain whether the proposed modifications and principles are likely to be feasible and where improvements can be made. The criteria for selecting reviewers were based on their familiarity with either heritage management or asset management, and for their opinions as potential users of the heritage asset management plan. Reviewers comments are discussed and guide refinements to the research to achieve the fifth objective. Finally, the dissertation concludes with recommendations on the implementation of heritage asset management plans and future research.

Structure of Dissertation

Chapter Two outlines the value of heritage places and examines issues facing heritage places including legislative changes. A review of heritage place management in New Zealand includes agency roles and responsibilities, and heritage management processes. At the conclusion of the chapter the problem facing heritage management is identified, that is, how to turn heritage policy into action. The asset management plan is proposed as a potential solution to the problem.

Chapter Three examines asset management theory and application in New Zealand. The asset management plan is compared with heritage management policy objectives and processes to determine whether the plan has the potential to be adapted to heritage management. In Chapter Four, a series of case studies demonstrate how asset management plans are being adapted for heritage assets. The analysis is structured according to criteria

derived from components of asset management plans. The chapter concludes with a comparative analysis between the case studies to produce a model heritage asset management plan which in turn, is compared with the conventional asset management plan. The comparisons reveal the key areas of the asset management plan requiring modification.

Chapter Five examines the theoretical principles underpinning service levels, lifecycle management and resource allocation as applied to conventional infrastructure asset management plans. This is compared with heritage place requirements and includes a review of the case studies. For each area, modifications are proposed and a series of principles developed to guide the preparation of heritage asset management plans.

Chapter Six presents the expert review process and results. The chapter structure corresponds with Chapter Five (reviewed by the experts). The feasibility of an asset management plan for heritage is discussed in light of responses from the expert review. The proposed principles are revised and presented in the chapter. Chapter Seven concludes with a review of the research methods, research findings and recommendations.

CHAPTER TWO

Heritage Management
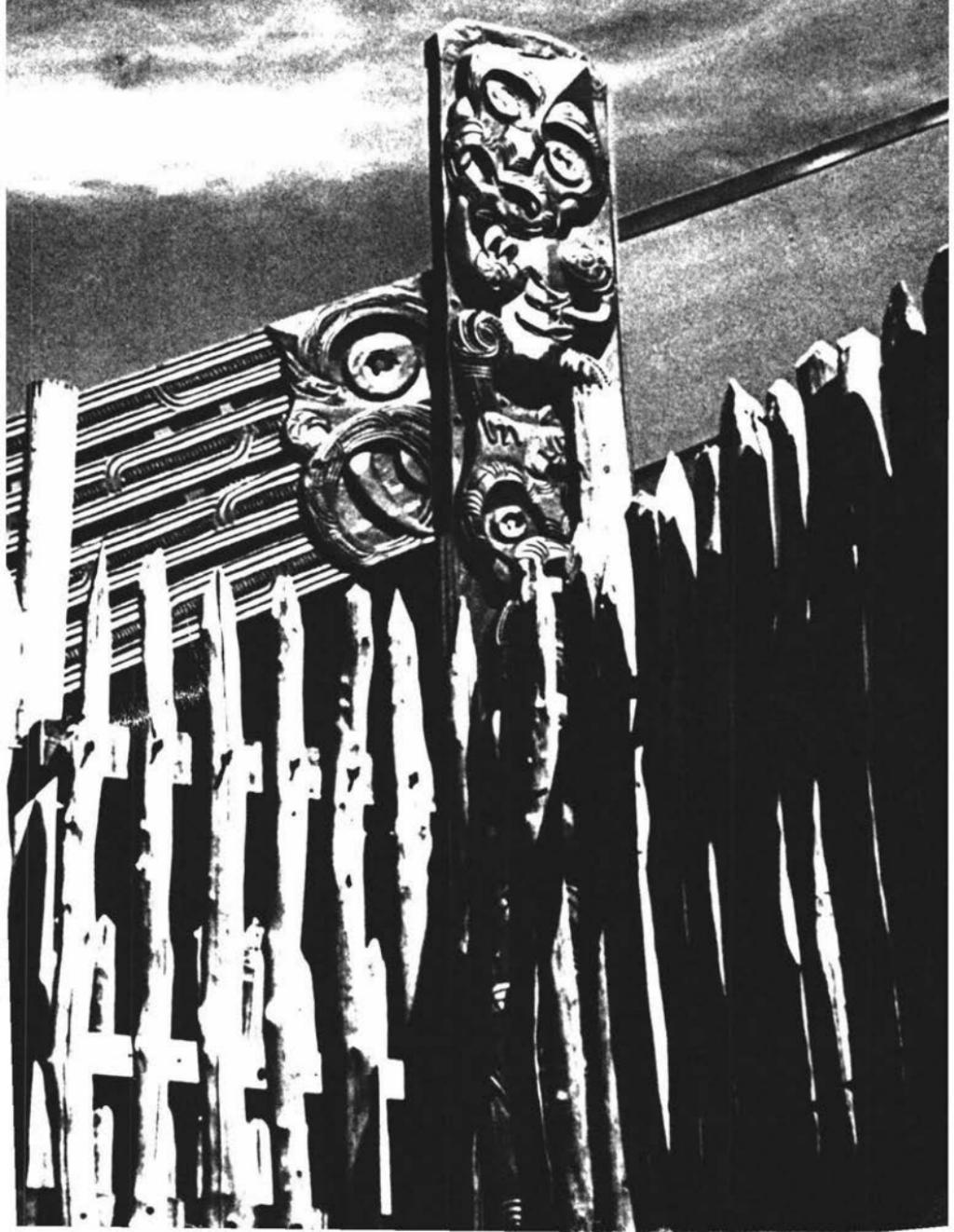
CHAPTER TWO

Heritage Management

Heritage conveys a living record of history. It encompasses critical moments in the development of communities and countries, the joys and sorrows of individuals, and the stories that connect people with places (Forbes 1999:2). The spiritual and physical associations people have with places at a personal, community or national level translate to symbols of identity and aspiration (Marquis-Kyle and Walker 1994:7). In this dissertation, 'heritage' is used as the collective term for the historical places, events and items that define and sustain the cultural characteristics of society (Wellington Regional Council Vol. 5 1999:4).

Photos, videos or documentation cannot substitute the actual physical experience of a heritage place. This is particularly true for Maori and other indigenous people who have strong spiritual associations with places. An important part of heritage is recognising the many values and aspirations associated with it. The dilemma facing New Zealanders is *how* heritage places can be conserved for future generations.

This chapter examines reasons for saving heritage and measures for heritage protection and conservation in New Zealand. The chapter is divided into three main themes. It begins with a discussion of values people place on heritage and the benefits and threats to heritage in New Zealand. The second theme examines the legislative and institutional framework for heritage protection in New Zealand. This includes an overview of local government initiatives for heritage conservation. The final theme outlines the heritage conservation process. The chapter concludes with a discussion on how heritage policy might be practically implemented to ensure the sustainable management of New Zealand's heritage resources.

The value of heritage

Defining heritage

The concept of 'heritage' originates from the legacy process where property, intellectual and spiritual values were handed on from generation to generation (Davidson 1991). According to Davidson (1991), heritage has recently taken on a new significance and application to describe, select and protect valuable cultural features of the environment. He defines heritage in terms of what we value or repudiate in the present against our fears for the future. The Collins Concise English Dictionary defines 'heritage' as 'anything that has been transmitted from the past or handed down by tradition' and 'evidence of the past such as historical sites and the unspoilt natural environment, considered as the inheritance of present-day society'. This definition recognises the spiritual and the physical dimensions of heritage.

Lowenthal (1985) claims that prior to the eighteenth century the 'past' was assumed to differ little from the present, and concepts of history and heritage are primarily artefacts of the twentieth century that demonstrate the evolution of society (1985:16). Pearson and Sullivan take a broader view of heritage than Lowenthal. They argue Western civilisation's preoccupation with the past began with the Roman interest in the heritage of ancient Greece. Management of heritage sites in the Holy Land by the Crusaders, the Renaissance and the European enlightenment all relied on inspiration from the past. Repeatedly, the greatness of historical eras and cultures have captured the imagination of later generations seeking to recreate the beauty, prosperity or political power of the past. Europe has had an enduring respect for its heritage.

History and heritage, whether personal or national, provides a referential point, a sense of place or identity and a measure of certainty to guide future actions. Lowenthal (1985) argues the growing interest and value of heritage is in response to the modern impulse towards preservation as a reaction to the increasingly transitory pace of life. And 'in the face of massive change we cling to the remaining familiar vestiges of the past' (Lowenthal 1985:17). Toffler (1970:24) also concludes that the enormous pace of change has been achieved within living memory and has caused a break with the past which has dislocated

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society. For this reason, people look for certainty and security in the past as a foundation for adapting to continual change.

Merriman (1991:12) proposes that 'society turns towards the past in order to understand how it arrived at the present'. He describes how heritage and landscapes are cared for by the community and serve people's need for a sense of identity and belonging. However, he warns against the potential for turning heritage into a commodity and divorcing it from its context (1991:12). Commercialisation of heritage can threaten its integrity and confuse people's experience and response to it.

The needs of indigenous people are recognised in Blake's (1995) integrative model for conservation practice which acknowledges the experiential appreciation of heritage or put more simply, 'people's love of a place' (1995:242). An experiential model of conservation is particularly valuable for its subjective (emotional and intellectual) bias which is integral to indigenous people's view of heritage (Blake 1995:242). Indigenous people have strong and often complex spiritual associations with places and items which define their heritage. All things important to early Maori – people, land, items, and nature were infused with a spirit or wairua which defined its mana (spiritual essence) (Barrow 1984:99). In this context, every item or place of significance to Maori has a complex association of spiritual beliefs, genealogy, history and function (Barrow 1984:23). Heritage places risk losing their meaning and value when divorced from the people and communities who cherish them.

If people's regard and experience of a place is a construct of heritage, it can be difficult to determine places of heritage significance in a community. In this context, heritage does not so much give us a link with the past as present us with a 'particular' past (McConville (1995). By giving us a particular past, heritage reflects the values of those in the present. McConville (1995) cautions that judgements on what constitutes heritage is often made by those with power over the community or city. Johnston (1995) also supports the notion of heritage as a product of political and economic forces. He explains that a place may not be included because of oversight, lack of interest or a lack of information on the history or people's regard for a place (Johnston 1995:395). People have personal associations,

passions and memories which cannot be analysed to explain why they value a certain heritage place (Pearson and Sullivan 1995:309). Unless community consultation is thorough, many heritage places (especially those which do not have structures) are vulnerable to being overlooked.

In Australia, Davidson and McConville (1991) claim there is a preoccupation with the search for a national identity. As a result, nostalgia and sentimentality of the past has developed and is represented by a wide range of heritage objects and places (Plumb (1969:14) *cited* in Merriman 1991). Heritage places with high local social values are the most popular for conservation because these features are important for retaining the ambience and collective memory of communities (Australian Heritage Commission (AHC) 1995:189). The Australian Heritage Commission (1995) recommends that heritage will only be protected if there is an ongoing active process of community support and involvement. This is because the perception of a common past provides one of the strongest unifying factors for families, communities and nations (Allen 1998:3).

Why heritage needs protection

There are many reasons for the interest in heritage today. The rapid changes in society, the need to retain a sense of continuity using links to the past, and the need to forge community and national identities are the most dominant themes emerging from the theory. At an applied level, the educational and scientific interest in heritage places and the economic values that heritage can produce through tourism and property values have also contributed to the surge in heritage protection (Hall and McArthur 1996:2).

Urban regeneration through restoration and adaptive re-use (new uses for heritage places) can transform heritage buildings into functional commodities and actively contribute to the social and cultural quality of a community (Nahkies 1998). Public appreciation of heritage values will ultimately translate to a higher market demand for heritage buildings (Nahkies 1998). This is particularly evident in the United Kingdom where heritage listed properties receive premium prices. The reason for this is heritage listed properties are seen as an endorsement of quality and significance (Craig 1994:19). High heritage property prices are

one of the most effective incentives for investment in restoration as there is certainty of financial returns (Nahkies 1998:4).

One of the most significant economic reasons for retaining heritage is tourism. An indication of the interest and value of heritage in the United Kingdom is 78 million visits annually to historic properties (1989 English Tourist Board *cited in* Merriman 1991:9). In the United Kingdom, revenue generated through heritage tourism has motivated government funding and investment in heritage (Craig 1994:19). Heritage tourism can provide enormous economic and social benefits to communities. This has become one of the most significant motives for designating and maintaining heritage worldwide (Hall & McArthur 1996:2).

At one level heritage is derived from emotional responses that attribute significance to a place and at another level, valued through capitalisation of those responses in the form of property values and tourism. The overriding view of heritage is that it is worthy of protection whether for emotional or physical reasons. Heritage is an essential component of communities and nations because it reflects our shared character and vision to define who we are. The attitude of New Zealanders to heritage follows international trends but as yet, heritage protection is not representative of the level of public enthusiasm for heritage places (Parliamentary Commissioner for the Environment (PCE) 1996:4-6).

Heritage in New Zealand

New Zealand's heritage has been described as a dynamic entity like an ecosystem – it must be managed as a sustainable resource for the health of the nation (Blaschke 1996). And like an ecosystem, the loss of one component may not threaten the whole, but heritage losses are permanent and need to be minimised (Blaschke 1996:14).

Public interest in heritage in New Zealand has never been greater (Heylen Research Centre statistics *cited* in PCE1996:4). The New Zealand Historic Places Trust has a membership of 32,000 which indicates the level of public interest in heritage. The main reason given by members for joining the New Zealand Historic Places Trust (NZHPT) was concern for

New Zealand's historic places (AGB McNair *cited* in PCE 1996:4). Increasing public awareness of the value of historic and cultural heritage buildings and places has put pressure on the Government to support heritage protection.

Publicly owned heritage buildings are small in number and not representative of New Zealand's rich and varied history. Over 75 percent of buildings on the New Zealand Historic Places Register are in private ownership (Nahkies 1998:1). For this reason, protection of privately-owned heritage is essential. A dilemma has emerged over the poor financial support or incentives for private heritage owners against the public demand for heritage retention. Apart from relying on legislation and the courts to balance the rights of owners against those of the community, encouraging voluntary protection has been the most effective approach to date (Allen 1998:4).

New Zealand's central business districts contain 43 percent of registered Category 1 buildings and there is significant public concern for the protection of these buildings. Having learnt from the development-oriented 1980s, the public is reluctant to see urban character and identity further eroded in the quest for "progress" (Nahkies 1998:1). It falls primarily on local authorities to manage this balance through regional and district plan processes.

Heritage assessment and registration in New Zealand is carried out at both national and local scales. The New Zealand Historic Places Trust uses a two-tier hierarchy to define sites according to the degree of 'special or outstanding historical or cultural heritage significance or value' for its national Register (Appendix 1). Local authorities also prepare lists or schedules of heritage sites and items reflecting local values of heritage for their plans. It is estimated that local authorities have listed about 3000 items beyond those on the Trust's Register (McLean 1998).

A 1992/93 survey of international visitors showed 38 percent visited heritage places – significantly ahead of the more well-known natural scenic attractions (PCE 1996:5 *citing* New Zealand Tourism Board 1993). The social and economic benefits of regional tourism exemplified by towns such as Napier, Oamaru and Arrowtown demonstrate the value of

heritage to their communities as a source of employment, tourism revenue and civic pride (New Zealand Historic Places Trust 1997:2). Tourism is New Zealand's largest foreign exchange earner according to Nahkies (1998:46). There is the potential for New Zealand to follow other countries with investment to capitalise on the earning potential of heritage tourism (Craig 1994).

The cause of heritage place loss in New Zealand

Heritage buildings have been subjected to the greatest level of abuse, neglect and destruction but other heritage places such as archaeological sites have also been exposed to threats. The causes of heritage loss are varied and widespread. Building loss can be attributed to the lack of financial resources for restoration and maintenance or inadequate fit of the heritage building/site to the owner's proposed activity (Department of Conservation 1998:28). Nahkies (1998) outlines how most heritage buildings need significant investment to overcome the threats of physical depreciation, functional and economic obsolescence. There is no protective legislation which can force private heritage owners to make investment to extend the physical and productive life of their heritage properties (Nahkies 1998). A range of financial and non-financial incentives is offered by councils to encourage heritage protection by private property owners (Woodward 1996). In an environment where even publicly-owned heritage places may not be properly maintained it is unreasonable to impose regulations and demands on private owners who have limited financial resources. A balance between statutory protection and economic incentives is required to encourage better heritage protection (Nahkies 1998:4). The United States and United Kingdom have successfully used financial incentives alongside protective legislation to achieve effective heritage protection.

Economic pressures on heritage buildings

Nahkies (1998) is concerned that if left to the 'market', heritage building loss in business districts will continue and may increase when demand for new buildings increases. Development pressures in central business districts destroyed 41 Trust registered buildings in Wellington and 30 buildings in Christchurch between 1980 and 1995 (PCE 1996).

Demand for new office and retail space combined with the Building Act 1991 requirement for improved earthquake strengthening has contributed to further heritage destruction (Nahkies 1998:25).

High land values encourage owners to maximise the earning capacity of their sites with more intensive use than that provided by heritage buildings. Private property owners may improve their financial returns by constructing new, larger, purpose designed buildings rather than restore or adapt their heritage building on the prime site. A way of offsetting the loss of development potential is the use of transferable development rights (Nahkies 1998). These give the heritage property owner the opportunity to sell the unrealised potential (usually height area) of their site to its neighbours. Unfortunately only six percent of councils promote transferable development rights (NZHPT 1997). The costs of earthquake strengthening and upgrading commercial buildings can be significant. It can often be cheaper to demolish and rebuild rather than restore. Some councils offer financial assistance to heritage property owners to encourage the investment.

According to Nahkies (1998), intervention is required when the market fails to supply goods or services at quantities below that which society considers desirable. He proposes that market failure to retain heritage buildings occurs because:

- Imperfect information makes it difficult to identify the costs and benefits relating to heritage buildings.
- Use of a short time horizon discounts the value of heritage to future generations.
- Heritage buildings have a number of public good elements that allow people to enjoy the benefits of heritage without having to pay for them (Nahkies 1998:5).

Demolition may still occur even when there is no development pressure because the owner may want to avoid the costs of insurance, rates, repairs, earthquake strengthening, tenant management/safety and security of the heritage building (Nahkies 1998:26). Another motivator for removal of heritage buildings from prime sites is that land is more saleable to potential developers. This is because there are no economic, social, and political risks associated with removing heritage buildings. (Nahkies 1998:26). Nahkies also raises the issue of owners who let their heritage buildings degrade into urban eyesores so that

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demand for their removal comes from the community or adjacent building owners (Nahkies 1998:26). A successful example of heritage building retention in a central business area exists in Napier. The wealth of art deco buildings have been restored for commercial use and attract significant tourist interest. The Napier City Council has supported the private-property owners with incentives, education and expert advice.

Tourism pressures on heritage

The increased tourist interest in heritage combined with the enthusiasm to capitalise on this through associated developments, is affecting many heritage places (Hall & McArthur 1998:2). Heritage can no longer be managed in isolation because the demands of tourists for access and experience threatens the physical and sometimes social and spiritual qualities of a place. It is a dilemma facing those responsible for managing heritage places. While the tourist dollar ensures the survival of heritage, it is the tourist who also impacts on the physical fabric of the place. Hall and McArthur (1998:3) describe it as 'loving heritage to death'.

Physical decay and degradation

The structural and material condition of a heritage place is vulnerable to the processes of time, weather conditions, use and other impacts. There are several causes of decay in heritage buildings – the most universal being gravity, followed by the actions of people, climatic and environmental effects (Feilden 1994:2). According to Feilden, human actions cause the greatest damage. The majority of domestic architecture in New Zealand is timber construction and particularly vulnerable to modifications/renovations, climatic effects and insect infestations.

Managing the physical condition of heritage places requires foresight, funding and expertise. Heritage places cannot be allowed to decay because once the original fabric is lost, it can not be replaced without losing its integrity (those special qualities which make it heritage such as age, history, etc). For this reason, it is important that heritage places have legislative protection and be actively managed with regular maintenance and monitoring.

The legislative and institutional framework for heritage protection

National level heritage protection

The heritage management system in New Zealand comprises a process of identifying, assessing, protecting and managing heritage places primarily under the Historic Places Act 1993 (HPA), Conservation Act 1987 and Resource Management Act 1991 (RMA). The Resource Management Act and Conservation Act do not separate natural from cultural heritage management, leaving the Historic Places Act to specifically legislate on some cultural heritage matters (Allen 1998:1). Historic heritage protection has been managed at a national level by the New Zealand Historic Places Trust under the HPA and at a community level by local government under the RMA. Archaeological site protection has been managed by the NZHPT under the HPA. The Department of Conservation and other government agencies also have responsibilities for achieving specific historic heritage objectives. The Antiquities Act, Te Ture Wheuna Maori Act and Local Government Act have minor heritage provisions. Appendix 2 summarises the legislative provisions for heritage protection.

The Conservation Act 1987 promotes the 'conservation of New Zealand's natural and historic resources' through the Department of Conservation who in turn, administers a number of Acts including the Historic Places Act 1993. The purpose of the Historic Places Act 1993 is 'to promote the identification, protection, preservation, and conservation of the historical and cultural heritage of New Zealand' (s4(1)). The Act is administered by the Department of Conservation and many of the functions are carried out by the New Zealand Historic Places Trust. Heritage protection is achieved through the HPA's principles which are 'recognised by the New Zealand Historic Places Trust and all other persons exercising functions and powers under that Act' (s 4(2)). This includes recognising heritage values and their ability to provide evidence of New Zealand's origins and distinct society. It also sets out specific procedures and considerations for identification, protection, preservation and conservation of New Zealand's historical and cultural heritage (PCE 1996:A8).

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The Historic Places Act provides heritage protection through heritage orders and covenants under Part I. Registration of heritage is achieved under Part II of the Act. This is a two-tier ranking system. Category I is attributed to heritage where 'special or outstanding historical or cultural heritage significance' can be established. This differs only slightly from the Category II ranking of 'historical or cultural heritage significance'. The differentiation is used primarily by NZHPT to determine whether a heritage order would need to be sought in event of threats to a place (Fill 1997:24). The New Zealand Historic Places Trust is the national advocate for heritage protection. The NZHPT under the HPA (section 2) provides protection for archaeological sites, whether recorded or not.

The Resource Management Act 1991 is overseen by the Ministry for the Environment while the functions are implemented largely by local government. The purpose of the Act is 'to promote the sustainable management of natural and physical resources'. Under the RMA, heritage sites and structures are classified as a 'physical resource' and as a component of the 'environment' definition in the purpose of the Act (section 5). This establishes the requirement for councils to manage the resource and 'avoid, remedy or mitigate the adverse impacts on it' (Blaschke 1996:13).

Three sections within Part II of the RMA have specific requirements regarding heritage. These are:

> 6. Matters of national importance. In achieving the purpose of this Act, all persons exercising functions and powers under it are to recognise:
> (e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga.
>
> 7. Other matters. In achieving the purpose of this Act all persons exercising functions and powers under it are to have particular regard to:
> (a) Kaitiakitanga.
> (c) The maintenance and enhancement of amenity values.
> (e) Recognition and protection of the heritage values of sites, buildings, places, or areas.
>
> 8. Treaty of Waitangi. In achieving the purpose of this Act all persons exercising functions and powers under it, in relation to managing the use, development, protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi.

The lack of a specific definition for historic heritage in the RMA has led to some uncertainty regarding the interpretation of Part II. A range of proposals are outlined in the Department of Conservation's *Review of Historic Heritage Management* (1998) to reduce uncertainty, improve heritage legislation and clarify management roles.

The Historic Heritage Review and the Resource Management Amendment Bill

In 1996, the Parliamentary Commissioner for the Environment identified the need for a more comprehensive and co-ordinated approach to historic heritage protection in her report, *Historic Heritage Management in New Zealand* (1996). The PCE placed the blame for poor heritage protection on a lack of national political leadership and commitment (1996:A43). Local government policies and plans have started to test the viability of present legislation to protect historic heritage.

In response to the PCE report, the Department of Conservation launched the Historic Heritage Management Review in 1998. An extensive discussion and public consultation process reviewed many heritage issues including archaeological site protection, heritage identification and assessment, regulatory protection under the RMA, voluntary protection and incentives, Maori heritage, funding and the role of central government. A Ministerial Advisory Committee analysed over 960 submissions on the DoC review. They produced the *Historic Heritage Management Review Report of the Ministerial Advisory Committee* (DoC 1998a) outlining proposals for the future. The key changes proposed were the creation of a Ministry of Culture and Heritage and a Maori heritage agency, the promotion of a more business-friendly approach to encourage voluntary protection, and use of the Resource Management Act as the main regulatory tool for heritage.

Since the Ministerial Advisory Committee Report (DoC 1998a), a Ministry of Culture and Heritage has been established which now has responsibility for the New Zealand Historic Places Trust. The Resource Management Amendment Bill 1999 also introduces new heritage provisions as a result of the Historic Heritage Management Review. The purpose of these amendments is to enhance the provisions for heritage, and to transfer the

regulation of archaeological sites from the Historic Places Act 1993 to the Resource Management Act. The proposed changes relevant to heritage are summarised in Appendix 3 (Ministry for the Environment 1999).

If the RMA Amendment Bill is passed in its present form it will have significant impacts on the way heritage is managed by local government. The poor performance of local government in the area of heritage protection has been one of the catalysts for the review so strengthening legislative arrangements may help engender more effective heritage management in future (PCE 1996, DoC 1998). Although the foundations for local level heritage protection are in place with over 60 territorial and regional councils district plan heritage schedules, these alone will not save heritage places (NZHPT 1997).

Local level heritage protection

Heritage protection is managed at a local level through regional council and territorial authority policy statements, plans and resource consents. This may include designations, zoning and schedules. Heritage orders are a mechanism for protecting 'any place of special interest, character, intrinsic or amenity value or visual appeal, or of special significance to tangata whenua for spiritual, cultural or historical reasons' (s 189 RMA). The NZHPT, regional councils and territorial authorities are designated heritage protection authorities and may impose heritage orders.

Regional councils are responsible for the protection of heritage under sections 6(e) and 7(e) of the RMA. As elected bodies they must consult with the community on heritage values and issues (PCE 1996:A19). They must also consult with tangata whenua under sections 6(e), 7(a) and 8 on regional policy statements, plans and resource consents where they are an affected party. Regional policy statements and plans (including regional coastal plans) are required to identify heritage places and address the impact of activities on heritage places. This includes activities controlled by territorial authorities affecting regionally significant heritage (PCE 1996:A20). Regional councils and territorial authorities are required to gather information and monitor heritage resources (s.35). They must notify the NZHPT of consent applications which affect heritage values (s.93), and

act in the role as heritage protection authorities (s.187). A heritage protection authority may notify a territorial authority of requirements for heritage orders and the territorial authority may publicly notify a heritage order (s.189).

Territorial authorities also and have a legal obligation to consult with the community on heritage issues. They perform a variety of heritage functions through their district plans. These may range from heritage zoning to listing and managing heritage buildings and sites (PCE 1996:A17). They are required to notify NZHPT of consent applications affecting heritage values (s.93) and broker information from the NZHPT. Territorial authorities are responsible for supplying heritage information in the form of land or building information memorandum (s.44 Local Government Official Information and Meetings Act 1987, s.30 Building Act 1991) (PCE 1996:A20).

Heritage orders issued under the Resource Management Act 1991 are the only certain way of protecting a heritage place (Holman 1990:22). The heritage order can be placed on any heritage place or item and has immediate effect. The order prevents subdivision, change in the character, intensity or scale of use of the land (s. 193) or alteration of any building or land by removal, demolition or excavation (s. 9) (Allen 1998:4). Heritage orders are defined in section 189(1) and (2) for the purpose of protecting heritage sites, structures, places of cultural, spiritual, or historical significance (Reeves 1991:12). Heritage protection authorities must give consideration to the 'finite characteristics of physical resources' when applying a heritage order (Reeves (1991:12).

Territorial authorities may establish funds for heritage protection, produce design guidelines and publications, and provide expert advice on heritage matters (PCE 1996:A20). Councils are often the first point of contact for the public regarding heritage issues. Under the Local Government Act 1974, councils can promote the development of services and facilities in the public interest such as mainstreet programmes and heritage trails (PCE 1996:A21). Designation of heritage zones in urban areas have also been used to recognise and protect significant heritage resources. Controls on activities within these zones are applied through the resource consent process. Many councils provide expert

advice (from architects, engineers, etc) to private heritage owners to encourage appropriate heritage conservation (NZHPT 1997).

Local government initiatives for heritage protection

Territorial authorities are developing a range of incentives to encourage private heritage owners to take on the role of protection (DoC 1998:28). There are many examples of successful voluntary private heritage protection achieved through council initiatives (Nahkies (1999). However, at least thirty percent of councils rely solely on district plan rules to provide heritage protection rather than using non-regulatory approaches (NZHPT 1997). There may be many reasons for this including a lack of funding and expertise, poor understanding of the issues and benefits of heritage protection, or lack of community interest. According to Nahkies (1998), over-reliance on regulation will alienate owners and prevent investment in heritage properties, leading to demolition, neglect and a steady decline of historic urban areas.

The New Zealand Historic Places Trust surveyed the incentives used by local and regional councils to encourage private property heritage conservation. A survey of 68 territorial authorities and 12 regional councils identified the extent to which financial incentives, heritage strategies, local heritage surveys and heritage promotions were being used (Table 2.1) (NZHPT 1997:2). Regulatory controls did not adequately provide heritage protection and alternative non-regulatory methods were promoted by most councils (NZHPT 1997). The disillusionment with regulatory controls had been eroded by a series of appeal decisions which favoured the rights of private property owners at the expense of public interests (NZHPT 1997:2).

The variable performance of councils may be due to the small allocation of time and resources to heritage planning. Approximately 70 percent of local authorities designated less than five percent of a planning position to managing heritage (NZHPT 1997). Only the main centres designated full time planners to heritage management. The size of the rating pool had a direct relationship with the amount of time spent on heritage matters, rather than the heritage wealth of the region or community interests (NZHPT 1997).

**Table 2.1 Activities and incentives used by councils
to encourage voluntary heritage protection**

Type of activity used to encourage voluntary heritage protection	Percentage of city and district councils using/propose using incentive	Percentage of regional councils using/propose using incentive
Identification of heritage places	65 percent	16 percent
Specific identification of sites of importance to Maori and archaeological sites	19 percent	0
Heritage surveys and inventories/assessments	26 percent	25 percent
Heritage strategies and designated heritage zones	25 percent	0
Advice – architectural, planning, engineering	40 percent	0
Heritage promotion	42 percent	16 percent
Financial incentives	60 percent	16 percent

(Source: NZHPT 1997)

Collectively, councils offer a wide range of incentives and initiatives but few councils have produced strategic heritage plans or offer a comprehensive package of incentives (NZHPT 1997). Appendix 4 summarises the financial incentives used for heritage protection in New Zealand. The most commonly used method for conserving heritage is some form of discretionary activity resource consent for modification or alteration to scheduled (or listed) built heritage (Woodward 1996). Unfortunately, heritage schedules in district plans with associated rules are no guarantee that heritage places will be protected (Woodward 1996). One of the problems is a lack of information and understanding of heritage places to guide decision making (Johnston 1995:395). Ignorance can expose heritage places to inappropriate conservation or inaction leading to decay and eventually loss.

Johnston (1995) proposes that conservation action by heritage owners and managers is the one thing which will ensure the protection of heritage places. He believes that better information on significant features, construction and condition of heritage places is essential to arm heritage owners and the community with the skills and knowledge to achieve effective heritage conservation (Johnston 1995:395).

Heritage conservation comprises a complex series of actions to achieve protection of a heritage place. Knowledge and implementation of the heritage management process enables heritage owners and agencies with heritage responsibilities such as councils to take

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a proactive role in preventing decay, misuse and degradation of heritage places. Although the heritage management process is broadly conceived and interpreted there are key principles which guide heritage conservation.

Heritage conservation

A set of international conservation principles have been adopted in New Zealand to guide heritage conservation practice. These are promoted by the New Zealand Committee of the International Council of Monuments and Sites (ICOMOS) follow the conventions set by its parent (International Council of Monuments and Sites). The principles and guidelines were established by UNESCO to develop and promote international policy and standards for cultural heritage conservation. Countries who adopt the charter are encouraged to customise and adapt the policies to accommodate their own cultures. Australia developed the Burra Charter based on ICOMOS principles to guide heritage conservation. The New Zealand ICOMOS Charter is used by the NZHPT to guide conservation policy and practices. The New Zealand charter recognises the importance of Maori cultural values and the role of communities in establishing their local identities through heritage.

The principles of the New Zealand ICOMOS Charter for Places of Cultural Heritage Value are:

- All work is to be thoroughly documented.
- Historic evidence should not be removed, destroyed or falsified.
- Any intervention is to the minimum and reversible where possible.
- The aesthetic, historical and physical integrity of the cultural property must be respected (Bowman 1999:3).

There is a broadly defined heritage management process applied by heritage conservation architects, councils and agencies with heritage responsibilities. It is based on ICOMOS principles. The New Zealand Historic Places Trust incorporates the process within the *Guidelines for Preparing Conservation Plans* (Bowron and Harris 1994) designed to guide management of heritage places. The legislative context (Historic Places Act, Resource Management Act, Building Act and Conservation Act) dictate the standards and

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principles for heritage management. Once the legal parameters are defined, heritage places are identified, assessed for heritage significance, and conservation policies are prepared, implemented and evaluated (Bowron and Harris 1994, Pearson and Sullivan 1995:3). The heritage management process is summarised in Table 2.2.

Table 2.2 The heritage management process

Process for management of heritage places
1. Location, identification and documentation of heritage places.
2. Assessment of the value or significance of the heritage place to the community or sections of the community
3. Heritage policy is developed. Planning and decision-making, weighing the values of the heritage place with other considerations (context, economic, political etc)
4. Heritage policy is implemented. Includes implementation of decisions for future use and management including conservation plans, cyclical maintenance plans, recording and if necessary, disposal.
5. Evaluation

(Sources: Bowron and Harris 1994, Pearson and Sullivan 1995:9)

Identifying places with heritage significance is the first stage in establishing a heritage inventory for a district plan schedule and for conservation purposes. Assessments of heritage significance for each heritage place provide information which will be necessary for management decisions. A statement of significance emphasises the primary attributes of a heritage place and is derived from the historical, social, aesthetic and scientific values (Table 2.3). An objective assessment of significance is established through research and analysis (Bailey 1999:8). Many councils have developed a version of the Historic Places Act (section 23) evaluation criteria to better suit their community's heritage interests (Woodward 1996). Once an inventory is established, heritage places may be ranked or grouped in district plans to allow greater flexibility for applying rules to a specific heritage type (Woodward 1996:129). A good inventory will rely on the assessments and provide quality information on heritage values to ensure appropriate decisions can be made on maintenance, development or investment in heritage places (Bailey 1999:8).

Table 2.3 Criteria for assessing heritage values

Heritage values	
Historical value:	The historical significance or value of a place is its ability to demonstrate an association with important or representative aspects of New Zealand's history. This might include an association with persons, ideas or events. It includes the history of all the above concepts.
Social value:	The social significance or value of a place is its ability to demonstrate or represent distinctive aspects, change or continuity in the way of life of New Zealander's and/or characteristics of New Zealand societies. This criterion might also include the notion of a spiritual, traditional, political, national, or any other cultural sentiment expressed by a group.
Aesthetic value:	The aesthetic significance or value of a place is its ability to respond tc the senses. It considers the formal qualities of the fabric and setting such as the form, scale, materials, quality of space etc. It addresses the design and architectural aspects of the place.
Scientific value:	The scientific significance or value of a place is its ability to provide information about past human activity or technical data about the fabric. It is concerned with the physical survival of fabric and the use of that fabric as evidence. It might encompass technology, archaeology, philosophy, custom, taste and usage as well as technique or material.

(Source: Gatley 1996)

Community participation is essential to identify places which span the range of heritage values. It is important to recognise that values are constantly changing as society re-evaluates its heritage in the context of present day events. Conservation may not always be warranted because society may have other conflicting uses for land or attitudes towards a place and change their priorities (Pearson and Sullivan 1995:9). Assigning heritage values to places assists the development of priorities for conservation and establishes the nature and extent of conservation actions.

The condition of a heritage place should not influence whether a place is included in the inventory. Nor should management considerations influence the assessment process because there is a risk that economic, political or other factors could distort the objectivity of the assessment (Pearson and Sullivan 1995:188). Heritage significance values alone

cannot dictate the management of the heritage place and need to be balanced against institutional capacity, economics, politics and society's wider needs (Pearson and Sullivan 1995:189). Once the heritage values have been established, policies can be developed to determine appropriate management processes including building conservation, physical protection, adaptive re-use, research, visitor management, interpretation, marketing, legal protection and emergency/salvage procedures (Pearson and Sullivan 1995:3).

Pearson and Sullivan (1995:213) emphasise the importance of using a simple and logical planning process which 'pulls together, strengthens and adds to present local planning principles and practices'. They also claim that successful heritage management should plan the long-term needs and abilities of local management and respond to the complexity of a heritage place (1995:213). One of the main threats to heritage conservation is the lack of implementation of management plans (Pearson and Sullivan 1995:213). Simplicity, incremental processes, follow-through and comprehension of a heritage management plan will more likely see it implemented. The objectives of heritage management policy are presented in Table 2.4.

Table 2.4 Objectives of heritage management policy

Objectives of heritage management policy
1. To recognise the heritage values and the implications of their significance.
2. Capable of being implemented by the owner/manager of the heritage place.
3. To recognise the role and expectations of the community.
4. To be financially and technically feasible and appropriate.
5. To be integrated with other planning processes.
6. To provide long-term management.
7. To be flexible, responsive to changes and with measurable outcomes.

(Source: Pearson and Sullivan 1995:210)

As Woodward has already stated, heritage inventories and schedules alone will not protect heritage. In a review of local authority heritage protection measures, she expressed concern that 'it is not the quantity or percentage of work that needs to be controlled, rather, whether the quality of workmanship and methods used are appropriate' (1996:130). The integrity of a heritage place can be unacceptably and irretrievably compromised by an inappropriate repair or modification. Unfortunately many councils do not recognise the value of specialist heritage reports such as heritage inventories and conservation plans, or links with the NZHPT Register to provide further information about an application (Woodward 1996:136). This can lead to poor decision-making which can cumulatively effect a community's heritage resource.

Conservation plans are an effective tool for providing comprehensive information about a heritage place. The conservation plan is a document which provides detailed information about the significance, history, fabric (materials and construction), condition, means of conservation, and maintenance requirements for a heritage structure or site. A heritage inventory identifies and ranks the significant heritage values of the place in the first part of the conservation plan. Each conservation plan is site specific with policies for managing the particular heritage place (Bowman 1999). The second part of the conservation plan details a schedule of remedial work to return a heritage property to a defined standard. It may also include options for adaptive re-use sympathetic to the heritage values of a place. A cyclical maintenance plan may be prepared in conjunction with a conservation plan and includes maintenance requirements, a timeline to indicate when actions are required and in some cases, a monitoring strategy. Unfortunately many heritage places do not have conservation or cyclical maintenance plans because they can be costly to produce, implement and monitor. Environmental performance indicators designed to monitor heritage places are currently being developed by a number of agencies with heritage responsibilities (Bell 1999). Conservation plans provide valuable information for decisions on the asset's future use and management of the physical condition. Without adequate information for decision making and monitoring programmes it is likely heritage places will continue to be lost.

Many councils have concentrated on preparation of district plan heritage schedules and policies, and although they may offer a range of incentives or initiatives, they have not fully addressed the management of heritage as a sustainable resource. If the proposed Resource Management Act amendments are enacted, councils will have greater responsibility for the sustainable management of New Zealand's heritage resource. The next stage is to translate heritage policies into effective and efficient conservation strategies to facilitate active protection of both public and private heritage places.

Turning heritage policy into action

There are many reasons for poor heritage management and a continuing loss of heritage places in New Zealand. Many agencies have comprehensive heritage policies but do not appear to be turning them into actions. The literature review of heritage management has revealed some key issues which apply to the lack of action. These are:

- Heritage policies are not implemented for a range of reasons such as cost and lack of expertise. This means that although heritage places are identified and assessed for heritage values, there are insufficient management processes to ensure they are actually maintained and monitored to prevent deterioration or misuse (Pearson and Sullivan 1995:213).

- Poor information makes it difficult to identify the costs and benefits relating to heritage buildings (Nahkies 1998).

- Heritage places are vulnerable to the processes of time, weather conditions, use and other impacts. Managing the physical condition of heritage places requires foresight, funding and expertise (Feilden 1994:2).

- A lack of information and understanding of heritage places to guide decision making can expose heritage places to inappropriate conservation or inaction leading to decay and eventually loss (Johnston 1995:395).

- A lack of administrative capability and poor information on which to base heritage conservation decisions.

The Historic Places Act 1993 and the Resource Management Act 1991 (with proposed amendments) have the potential to protect New Zealand's heritage resource. However, under-resourced local authorities and fragmented national administration have hampered efforts (PCE 1996). Many government agencies and councils are committed to protecting heritage and have comprehensive heritage registers and inventories for their districts (Woodward 1996). But this is only the first stage of heritage conservation and protection. Few councils have the capacity to offer adequate financial incentives to property owners and struggle to maintain their own heritage properties (NZHPT 1997). Although many councils have heritage policies, these have yet to be implemented.

Conservation action by heritage owners and managers is proposed by Johnston (1995) as the only way to ensure the protection of heritage places. Arming heritage owners with skills and practical information on heritage values, construction and condition of heritage places is essential to achieve effective heritage conservation (Johnston 1995:395). Pearson and Sullivan (1995:213) take a wider view, emphasising the importance of using a simple and logical planning process which 'pulls together, strengthens and adds to present local planning principles and practices'. They propose heritage management plans are more likely to be implemented if they are accessible, include long-term plans and follow incremental processes.

The challenge is *how* to turn heritage policy into action. There is a need for quality information such as that provided by conservation plans for all registered and scheduled heritage places. Better information will improve decision-making regarding the conservation needs of heritage places and support funding applications. A framework is needed to guide heritage management and ensure heritage receives an allocation of local and central government funding and resources. Long-term planning, priority setting and developing appropriate conservation actions are just some of the issues councils, agencies and heritage owners need to address in order to achieve effective heritage management.

A method or strategy is required to turn the objectives of heritage management policy into action. The asset management plan may have the potential to deliver many, if not all the policy objectives outlined in Table 2.4. In New Zealand, asset management plans are

used to manage urban infrastructure assets such as drainage systems. Asset management plans are also being adapted to park management, building management and other types of assets. It is conceivable that the asset management plan could be adapted to manage heritage places as assets.

There are a number of reasons why the asset management plan may be successful. Firstly, many councils and agencies are familiar with the asset management plan for effectively managing urban infrastructure. It is likely that these agencies will have the capability to prepare and implement asset management plans for heritage places. Secondly, a 'heritage' asset management plan could be integrated with wider planning processes including long-term strategies and resource allocation processes. And finally, the asset management plan is comprehensive and follows a systematic lifecycle management process. It relies on quality information, objective based management, incorporates community expectations, promotes comprehensive implementation processes, and includes monitoring and evaluation provisions. These attributes have the potential to turn heritage management policy objectives into action.

An appraisal of the asset management plan as a potential methodology for adaptation to heritage management is presented in Chapter Three. The asset management plan will be compared with heritage management policy objectives and processes to determine whether the adaptation is feasible.

CHAPTER THREE

Asset
Management

CHAPTER THREE

Asset Management

In 1993, New Zealand's Auditor General released a special report to Parliament expressing concern at the 'lack of uniform procedures for valuation and depreciation of infrastructure assets' by councils. This was exacerbated by the 'lack of knowledge on the condition of assets and the absence of strategic planning for service requirements' (*New Zealand Infrastructure Asset Management Manual* 1996:1.4). In response to these concerns, an asset management framework has been adopted by many councils and agencies to achieve more effective and efficient service delivery through better infrastructure management.

Brian Smith, Director of the Value Added Services Group at Audit New Zealand, argues that improved asset management processes and plans must become an integral part of every council's management of physical assets (1996:13). This is because asset management is a framework for linking the management of assets with financial practices and wider planning frameworks. Capital expenditure, maintenance costs and programmes for assets can be included in financial plans by central and local government. One of the most significant features of asset management is the requirement for comprehensive information on an asset to enable more accurate forecasting and effective decision making.

The objective of this Chapter is to determine whether the conventional asset management plan (usually associated with infrastructure asset management) has the potential to improve heritage management in New Zealand. Asset management theory and application are appraised to establish the strengths and weaknesses of the methodology. This is followed by a comparison and discussion of asset management and heritage management. The chapter concludes with the key features of asset management plans which may be

adapted to improve heritage management. The sources of information for this Chapter are the findings from Chapter Two and the *New Zealand Asset Management Manual* (1996) (NZIAMM) which is the most widely recognised text on the subject in New Zealand.

An overview of asset management

An asset is defined as 'a physical component of a facility which has an economic life of greater than 12 months'(NZIAMM 1996). An asset may include items such as land, buildings, infrastructure, plant and equipment, cultural collections and natural resources. In Australia, the Victorian Government defines asset management as the 'process of guiding the acquisition, use and disposal of assets to make the most of their service delivery potential and manage the related risks and costs over their entire life' (Victorian Government 1995:1).

The *New Zealand Infrastructure Asset Management Manual* explains the asset management plan as 'a plan developed for the management of one or more assets that combines multidisciplinary management techniques over the lifecycle of the asset in the most cost-effective manner to provide a specified level of service' (NZIAMM 1996). The objective of the asset management plan is to promote good infrastructure management in the most cost effective way using a defined level of service, lifecycle approach, cost-effective management, and sustainable use of physical resources (NZIAMM 1996:1.2). Asset management plans can be developed for a single asset to city-scale infrastructure.

Asset management plans are based on accounting principles and were initially developed to address the financial concerns of infrastructure management (Gilkison and KPMG 1999:47). Modern approaches to financial accounting require comprehensive information to gauge an asset's performance (Victorian Government 1995:1). An important aspect of developing asset management plans is forecasting future trends which may affect projections for capital works and operating expenditure (Gilkison and KPMG 1999:48). The preparation of long-term financial strategies for managing assets to a specific level of service throughout their lifecycle translate projections into plans (NZIAMM 1996). Warwick Busch, Asset Management Manager at Worley Consultants, considers asset

management plans an effective tool for local government financial planning because they forecast the allocation of future capital and maintenance expenditure (1996:21).

The application of asset management extends from identifying community or customer expectations of services or assets to the daily operation of services (NZIAMM 1996:1.7). Development of asset management plans comprises three stages (NZIAMM 1996:1.8). The first stage is strategic planning and comprises long-term organisational objectives, review of operating environment, and setting service levels (matching service delivery with customer expectations). The second stage is tactical planning which translates strategies and service levels into specific goals and objectives. The asset management plan is one of a number of tactical plans and may be linked to financial, marketing, and customer service plans. The operational planning stage comprises detailed action plans for short-term asset management and are consistent with annual and business plans. These are often sub-units of asset management plans.

The asset management plan has three principle components (NZIAMM 1996:1.9):

1. Levels of service – setting levels against which service performance can be achieved and measured.
2. Lifecycle management process – policies, procedures and timetables to achieve cost-effective asset management to meet service levels and predict future demands.
3. Resource allocation – forecasting, schedule optimum capital, renewal and operational expenditure to meet service levels over lifecycle of asset.

Agencies may operate an asset management framework comprising a number of asset management plans. The asset management plan is designed to link management of the lifecycle of the asset with community expectations, long-term financial projections and organisational objectives. Table 3.1 illustrates the lifecycle asset management process.

Table 3.1 The lifecycle management process

Lifecycle Management Process	
Lifecycle stage	**Objective**
1. Asset planning strategies	To meet customer needs in most efficient and effective manner.
2. Asset creation /acquisition	To satisfy or improve a level of service.
3. Asset accounting and economics	To consider all costs and revenues associated with an asset and provide forecasts for input into the funding process.
4. Asset operations and maintenance	To manage the operation and maintenance of assets.
5. Asset condition and performance monitoring	To identify under performing assets, predict asset failure, and determine corrective action.
6. Asset rehabilitation/renewal	To restore the asset to ensure required levels of service can be achieved.
7. Asset disposal/ rationalisation	To plan for the disposal of assets.
8. Asset management audit and review	To ensure a continuous asset management improvements cycle, maintain best industry practices and quality standards.

(Source: NZIAMM 1996:2.2)

Asset management application in New Zealand

Nearly 60 percent of the annual expenditure of local authorities is absorbed in maintaining and operating infrastructure so effective management is essential (New Zealand Local Government 1998). The *New Zealand Infrastructure Asset Management Manual* was designed to guide councils and other infrastructure managers in effective and efficient asset management practices. The *NZIAM Manual* was funded from contributions made by 76 regional councils and territorial authorities. In return, councils received copies of the manual to increase the implementation of current best practice in asset management (NZIAMM 1996). The *NZIAM Manual* table of contents is included in Appendix 5. Gareth James, the Chairman of the National Asset Management Steering Group, states that 'asset management plans will be the foundation upon which credible financial plans will be based' (NZIAMM 1996).

Asset management plans are being developed by local government to assess the condition of their infrastructure in order to improve servicing for the future and ascertain the capital expenditure and actions required to provide the services (Gilkison and KPMG 1999:47). The asset management plan proposed by the *NZIAM Manual* is consistent with current financial systems and policies. It also complies with accepted accounting practices required by the Local Government Amendment Act (No.3) 1996 (Gilkison and KPMG 1999:47). Information from asset management plans can be used in the preparation of a variety of local government annual plans, long-term financial strategies and 10-year forecasts (Smith 1996:13). The asset management framework also supports objectives and practices under the Resource Management Act 1991. This includes the sustainable management of physical and natural resources, consideration of alternatives, assessment of costs and benefits, and selecting the best practicable option (NZIAMM 1.6).

The local government reforms over the past decade have called for greater accountabilities through annual plans, reports and strategic plans alongside the need for ongoing community consultation (Busch 1996). Ascertaining the financial and physical condition of infrastructure has been a complex and extensive task for many councils because so little was known about the condition and performance of their infrastructure (Smith 1996:13). The asset management plan process has already 'improved understanding of service level options, improved quality of asset maintenance decision making, more accurate assessment of alternatives available in delivering services and improved justification for future works programmes and funding requirements'(Smith 1996:13).

There are a number of benefits for councils developing asset management plans (NZIAMM 1993:1.3). These are:

- 'to improve understanding of service level options and requirements (including environmental impacts;
- be able to identify minimum lifecycle (long term) costs for an agreed level of service;
- better understand and forecast asset related management options and costs;
- manage risk of asset failure;
- improve decision making based on costs and benefits of alternatives;

- provide clear justification for future work programmes and funding requirements;
- improve accountability over the use of public resources;
- improve customer satisfaction and organisation image' (NZIAMM 1996:1.3).

Ian Reid, a senior manager in the Real Estate Consulting Division of Ernst and Young cautions that the asset management plan is reliant on quality accessible information and agencies need to be realistic when developing plans. There are significant costs and time required to develop a good asset management plan. He also stresses the importance of integrating the plan within the financial and management functions of agencies (Reid 1996:14). Integration is successful only if the asset management plan receives full commitment from all users.

Reid also highlights the complexities of the process for identifying, collecting, auditing and loading information for each asset. Comprehensive, detailed and accessible information is essential to improve asset performance (Reid 1996). Busch (1996:20) proposes a nationally co-operative approach for a single software system to record information to create a valuable database for New Zealand. A comprehensive database could contribute to a better understanding and broaden the spectrum of asset management applications. Accessible information could equip councils with the expertise to adapt asset management plans to meet their specific needs.

Reid and Busch have raised some difficulties of asset management planning. In New Zealand, asset management planning is still in its infancy but weaknesses are beginning to emerge. Some potential and actual weaknesses are:

- organisational shifts may be required before asset management planning can be adopted by agencies;
- significant set-up costs are required at the early stages of asset management planning;
- there can be difficulties in obtaining sufficient quantity and quality of information to develop good asset management plans;
- the process needs adequate time and skilled professionals to design and implement asset management plans;

- an integrated approach between plan designers, administrators and implementers is essential;
- adequate training is required to clarify responsibilities, enable staff to monitor assets and service levels, and document asset management procedures;
- a sophisticated data collection and management system, (including customised software) is required to handle the information rich process.

The success of the asset management plan is primarily attributed to the development of service levels which balance resource and funding constraints with service requirements. This is achieved within the context of lifecycle management which allocates resources in response to service delivery expectations for each stage of the asset's life. Long-term strategic planning is the key to asset efficiency and effectiveness. The increasing use of the asset management plan by councils indicates its successful application to infrastructure assets in New Zealand.

Comparison of asset management and heritage management

The *New Zealand Infrastructure Asset Management Manual* focuses on the management of roads, bridges, water supply, stormwater, waste water systems, flood protection and drainage systems, but is also applied to parks and recreation facilities. The potential application of asset management plans is still being explored by councils and agencies. Applying the objectives and principles of asset management plans to heritage management may translate heritage policy into conservation action and improve financial and resource planning.

A review of local government heritage protection measures carried out by Woodward (1996) showed councils were relying primarily on scheduling in district plans to protect heritage. Pearson and Sullivan (1995) claim the lack of heritage conservation is because management plans are not implemented (1995:213). The Department of Conservation Historic Heritage Management Review (*Report of the Ministerial Advisory Committee 1998*) emphasised the importance of developing well defined management objectives and

targets, and a methodology for prioritising actions to achieve heritage protection (1998:32). Heritage protection can only be achieved with a good understanding of the resource, long-term planning, active management and monitoring by using an integrated approach between agencies and professional disciplines.

Table 3.2 compares objectives for asset management with heritage management policy to determine whether there are adequate similarities to make adaptation worthwhile. That is, whether an asset management plan could be adapted to translate heritage policies into actions.

Table 3.2 Comparison of asset management and heritage management policy objectives

Comparison of asset management and heritage management policy objectives	
Asset management plan objectives	**Heritage management policy objectives**
1. To recognise the potential of assets using quality information to make informed decisions.	1. To recognise the heritage values and the implications of their significance.
2. To ensure assets are appropriately used and maintained through the lifecycle management process.	2. To ensure policies are capable of being implemented by heritage owner/manager.
3. To develop service levels to meet the expectations of customers and the community.	3. To recognise the role and expectations of the community.
4. To make financial decisions based on evaluations of full lifecycle costs, benefits and risk assessments.	4. To be financially and technically feasible and appropriate.
5. To integrate plans with corporate and business plans, budgetary and reporting processes.	5. To be integrated with other planning processes.
6. To focus attention on results by clearly assigning responsibility, accountability and reporting requirements.	6. To be flexible, responsive to changes and with measurable outcomes.
7. To achieve more efficient long term management through lifecycle management processes and full lifecycle costs.	7. To provide long-term management.

(Adapted from: Victorian Government 1995; Table 2.4 Chapter 2, Pearson and Sullivan 1995:210.)

Asset management plan objectives tend to be closely linked with clearly defined processes based on customer service delivery, physical/active management, integration within wider planning contexts and resource allocation. Although heritage management terminology differs from asset management plans, many of the objectives have similar intent. It is conceivable that the asset management plan may be able to deliver the policy objectives for heritage management.

The heritage management process in Table 3.3 shows some consistency with the asset management lifecycle process. However, the heritage process places more emphasis on asset location, identification and assessment of heritage values than on the implementation phase of the process. It is probable that the structured implementation/conservation phase has relied solely on guidance from conservation plans and information gathered in the compilation of district plan heritage schedules. Where heritage policy has not been implemented by conservation plans and cyclical maintenance plans, heritage management appears to have been limited, ad hoc, and often responding to crisis with a fire-fighting approach.

The objective of the comparison is to determine whether the heritage management objectives and process could be achieved using the asset management plan. Judging by the similarities, the asset management plan has the potential to be adapted to offer heritage a more comprehensive action based process for achieving heritage protection. This is because asset management plans can be used to set service levels to match the capacity of the asset (and owner) with the service delivery expectations of customers and communities. Service levels for heritage need to recognise the specific heritage values (historical, aesthetic, social, and scientific features) which give heritage places significance. For this reason, the interpretation and application of service levels may need to be specifically adapted to heritage assets.

**Table 3.3 Comparison of the asset management lifecycle process
with the heritage management process**

Comparison of asset management lifecycle process and heritage management processes	
Asset management lifecycle a process	**Heritage management process**
1. Asset planning strategies	1. Location, identification and documentation of heritage places. 2. Assessment of the value or significance of the heritage place to the community or sections of the community 3. Planning and decision-making, weighing the values of the heritage place with other considerations . (context, economic, political etc)
2. Asset creation /acquisition	
3. Asset accounting and economics	
4. Asset operations and maintenance	4. Implementation of decisions for future use and management including conservation plans, cyclical maintenance plans, recording and if necessary, disposal.
5. Asset condition and performance monitoring	
6. Asset rehabilitation/renewal	
7. Asset disposal/ rationalisation	
8. Asset management audit and review	5. Evaluation

(Adapted from: Table 2.4 Chapter 2, Bowron and Harris 1994, Pearson and Sullivan 1995:210; NZIAMM 1996:2.2; Table 2.2:Chapter 2)

The 'heritage place' concept could be interpreted as a 'heritage asset' to represent the heritage buildings, items, sites and spiritual associations unique to every individual and community. The focus of asset management plans is primarily on physical items or assets but the scope of the definition is by no means limited to tangible objects. How intangible qualities are dealt with requires further exploration.

Turning policy into action is achieved through the asset management 'lifecycle management process'. This feature of asset management planning integrates financial management with active maintenance and monitoring strategies to meet long-term objectives. The lifecycle process spans from asset creation to disposal. The heritage asset

identification and assessment stage would need to be incorporated into the lifecycle process. Modifications to the lifecycle management process may be necessary to recognise the specific requirements of heritage assets.

The financial management of assets through the lifecycle process may have the potential to improve funding and resource allocation for heritage. This would be achieved through long-term forecasts to enable a strategic approach to investment. This means that with appropriate information, early resource allocation decisions can facilitate the most efficient and effective lifecycle management of a heritage asset.

The present economic climate has made funding applications to central and local government for heritage protection a very competitive process. If heritage assets are represented within the asset management planning framework, funding applications for heritage conservation can compete on a more quantifiable basis with other assets. Some asset accounting and valuation methods may need to be adapted to recognise the special characteristics of heritage assets. The objective of resource allocation is to forecast the long-term requirements of heritage to provide more certainty and reduce threats to the resource. This may eliminate the crisis-based approach to heritage planning currently experienced in New Zealand.

Conclusion

The *New Zealand Infrastructure Asset Management Manual* has assisted the transition to a new style of infrastructure asset management and set an industry standard for asset management planning. General adherence to the structure of asset management plans set out in the *Manual* by councils and agencies will ensure a consistent approach to asset management planning in New Zealand. The opportunity now exists to adapt the methodology to other asset types. The asset management plan has many strengths and although it has weaknesses, many of these may be overcome with adequate resources and skill training.

Evidence from the appraisal suggests the asset management plan has the potential to be adapted to heritage management. The development of service levels, lifecycle planning may provide clarity of purpose and facilitate long-term active heritage management. Strategic use of forecasting and resource allocation methods may facilitate better financial management and funding for heritage assets. Heritage management has been plagued by a lack of resources and a new approach such as asset management plans may be better equipped to address these problems.

The next stage in the research is to determine where and how modifications should be made to adapt the asset management plan to heritage management. To do this, a series of asset management plans designed to manage heritage assets, are investigated to identify significant differences. Chapter Four presents three heritage asset management plans and compares them with the conventional asset management plan described in this chapter. The results of the comparison will guide the modifications for an asset management plan for heritage in Chapter Five.
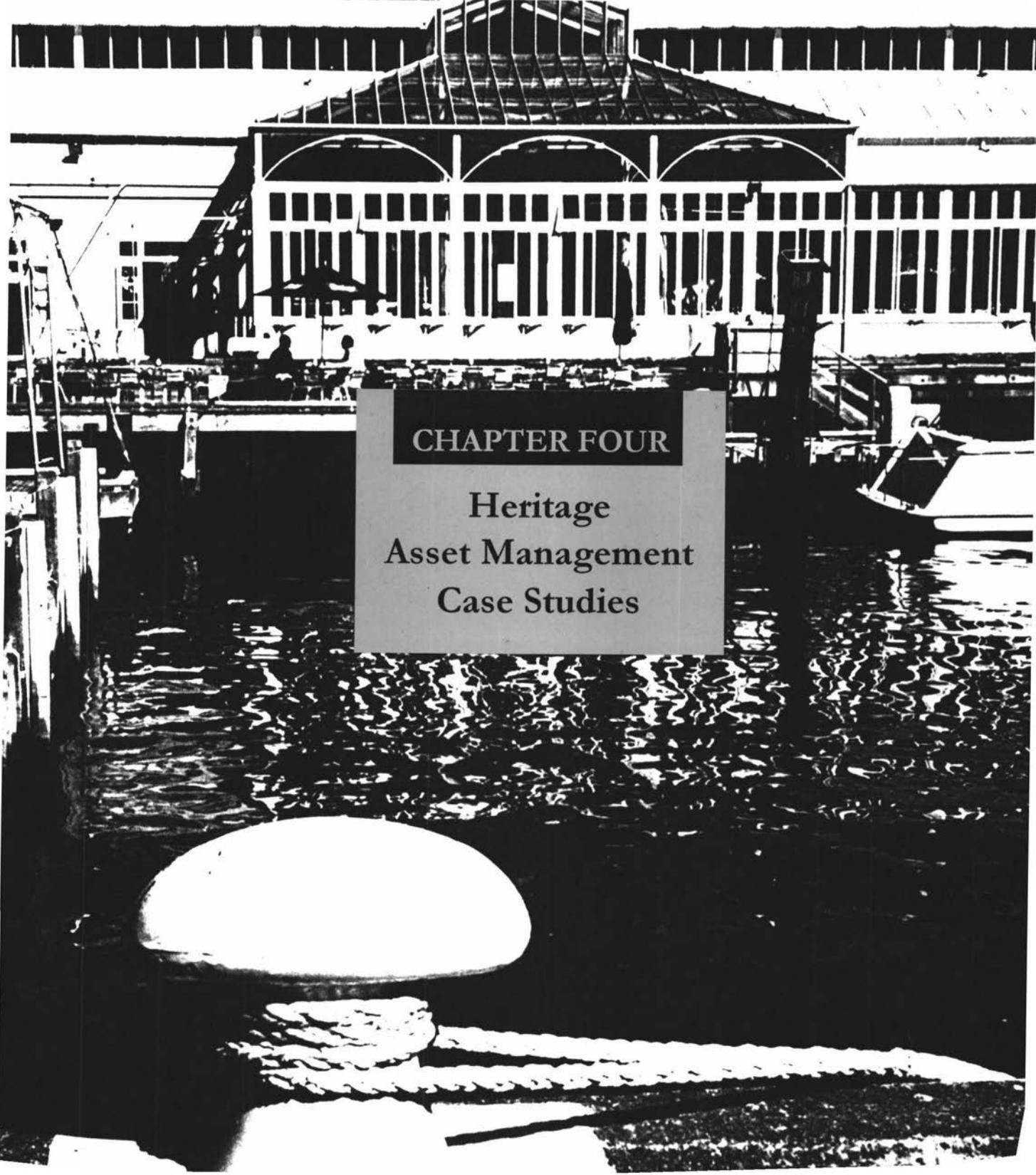
CHAPTER FOUR

Heritage
Asset Management
Case Studies

CHAPTER FOUR

Heritage Asset Management Case Studies

This Chapter examines how the asset management plan is applied to heritage management. The purpose of the research is to identify the key features of heritage asset management plans to extrapolate where and how modifications should be made to adapt the asset management plan to heritage management. Asset management plans for heritage are a new concept and consequently the process has yet to be evaluated. In this chapter, three heritage asset management plans are investigated to build a body of knowledge on which to base the next stage of the research.

The three case studies were selected for their different approaches to heritage asset management planning. An Australian case study presents an asset management plan in operation since 1996. Although no critiques of this plan are known, it is still in use after four years which may indicate the level of success. The two New Zealand asset management plans are in the final development stages so, as yet, there are no critiques of the plans.

The first case study outlines the New South Wales Government heritage asset management plan implemented by its agencies. It was selected because it is a successful working example of a heritage asset management plan. The New South Wales Government places an emphasis on using heritage places and where necessary, adapting heritage places for new uses. This influences the style of their heritage asset management plan.

There are very few examples of heritage asset management plans in New Zealand but two have been selected to demonstrate how the methodology is being developed. The first is the Wellington Regional Council's 'Regional Parks and Natural Forestry Asset

Management Plan' of which heritage asset management is a component. This asset management plan is near completion but has not yet been implemented. It was selected because it raises important issues for heritage management and is an example of a local government approach. The final case study examines the Department of Conservation's 'Historic Heritage Asset Management System' which sets up a national plan for managing the Department's heritage sites and structures. This asset management plan is still being developed and shows how a central government agency is taking a leadership role in heritage management.

Each agency takes a specific approach to heritage asset management and consequently different issues emerge. Collectively these plans show how the asset management plan can be adapted to manage heritage. The chapter concludes with a comparative analysis of the case studies with the conventional asset management plan. The purpose of the comparison is to determine the features of conventional asset management plans which require modification to be effective for heritage asset management. The findings from the research will guide the modification of the asset management plan for heritage in Chapter Five

Methodology for reviewing heritage asset management plans

The research methodology for this chapter is based on analysis of documents supplied by the respective authority, documents from websites, interviews, participation in a workshop and personal communications. Each case study is examined under a series of topic headings which collectively cover the key features of asset management plans (Table 4.1). The full case study investigations are contained in Appendix 6. The case studies are summarised and the key features of each plan are presented in this chapter.

Table 4.1 Asset management case study topic areas and scope of research

Research areas	Scope
Definition of heritage assets	Clarifies the respective agency's interpretation
Objectives	Summarised for each heritage asset management plan
Roles and responsibilities	Brief outline of the agency's role and responsibilities for the heritage asset management plan
Process for plan preparation	Diagrammatic presentation of the heritage asset management plan preparation process.
Identification and assessment	The methodology applied to establish significant heritage places
Service levels	Examines how each agency develops service levels for heritage assets.
Lifecycle management	Outlines the term and management process for heritage assets
Resource allocation	Examines resource allocation approaches to heritage asset management.
Monitoring and evaluation	Methods used to ensure asset management plan is effective, efficient and accountable.

Case Study One: New South Wales Government Heritage Asset Management

The information sources for this case study are from the New South Wales Government website, *'Asset Management'* by Anne Warr and Jean Rice ((1996) *In Place: A Cultural Heritage Bulletin*), and *'Heritage Asset Management'* (1996) guidelines published by the Department of Public Works and Services Policy Division. The case study investigates the objectives and processes adopted by the New South Wales Government (NSWG) heritage asset management plan.

The New South Wales Government published guidelines for managing heritage assets in 1992 to protect cultural property, improve value from public sector assets and increase productivity in capital works investments (NSWG 1996:3). The 1996 Heritage Asset Management document is part of the Government's Total Asset Management reform

programme aimed at improving the value from the public sector assets and increasing productivity in capital works investment. The State Government takes the role of heritage custodian and the heritage asset management plan aims to be an inclusive 'whole-of-government' process with long-term policies integrated into all levels of planning, management and decision making. The plan is implemented by state and local government agencies. The heritage asset management plan is designed to allow flexibility but each agency must ensure the legislative requirements, policies, procedures and performance standards are met.

New South Wales legislation requires government agencies to manage heritage places in their portfolios to specific standards through the asset management process. Under the New South Wales Heritage Act 1977 and Environmental Planning and Assessment Act 1979 this means:

- 'heritage values are to be understood, respected, protected and conserved;
- changes to heritage places must be authorised;
- only minimal intervention to reveal the significance of an asset;
- implement work which makes heritage assets useful and secure; and
- factor heritage considerations into all asset management activities and budgeting' (NSWG 1996:14).

Every government agency has a responsibility to administer its heritage assets for the benefit of the people of New South Wales (NSW Heritage Act 1977; NSWG 1996:14).

The most significant feature of the New South Wales Government asset management plan is the focus on maintaining heritage assets at a level that enables their continued use. This is because active use of heritage places is considered the most effective means of protection. The lifecycle management process aims to perpetuate the useful life of a heritage asset and service levels are designed to promote effective and efficient asset use without compromising heritage values. Forecasting and resource allocation methods are designed to support the use of heritage assets over other options such as constructing new assets.

The NSW Government heritage asset management plan emphasises the need for quality information and understanding of heritage assets. Long-term lifecycle plans translate information into actions to sustain heritage assets while maintaining a viable and living use.

The New South Wales Government asset management framework provides a systematic and comprehensive process for large scale heritage resource management. The state government's active leadership role in heritage management and protection is intended to send a strong message to all heritage managers and owners. The philosophy behind the heritage asset management plan is that every agency can apply it with flexibility to its particular circumstances. Agencies can then be assured that they are meeting legislative obligations, community and stakeholder objectives, and ultimately protection of the State's heritage assets.

Case Study Two: Wellington Regional Council
Regional Parks and Natural Forestry Asset Management Plan

The following draft documents were used for the analysis of Wellington Regional Council's Regional Parks and Natural Forestry Asset Management Plan – Volume 1, Summary Regional Parks and Natural Forestry Asset Management Plan: Summary; Volume 2, Methodology (1999); Volume 5, Cultural Heritage Service Levels and Standards (1999); Volume 7, Life Cycle Plans; Heritage: First Level Analysis (Forbes 1999), Regional Parks and Natural Forest Asset Management Plan for Heritage Structures (Bowman 1999). An interview with David Clelland, contributing consultant to the Plan and discussion with project leader Graham Laws, also contributed to the case study. The Wellington Regional Council asset management plan will be implemented in 2000. The focus of this case study is on the heritage component of the Plan.

The Wellington Regional Council (WRC) is using an asset management plan to manage its regional parks. The parks serve a range of purposes for the region including water catchments, forests, heritage conservation and recreational opportunities. The asset management process has identified specific characteristics, values and experiences in each park

The *New Zealand Infrastructure Asset Management Manual* has guided the WRC process although significant modifications were made to accommodate specific features of parks such as heritage assets (Laws, pers. comm., 1999). The WRC asset management plan is being developed in three stages. The first stage established goals and objectives, key levels of service, predicted future demands, developed lifecycle plans for major assets (park or forest), prepared a financial summary (forecasts and strategies) and an asset management improvement programme overview (WRC Vol 2:3 1999). The second stage aims at improving WRC's knowledge of assets, quality of decision making and the accuracy of financial projections. To achieve this, methods for assessing the recreational, environmental and cultural heritage values have been designed and are called 'signature values' (Clelland, pers. comm., 1999). An assessment of criticality (risk management factor) reflecting asset values and associated risks, an asset hierarchy and classification, and preliminary forecasting have also been included in Stage Two of the plan. Stage Three will see further fine-tuning of the asset management plan (WRC Vol 2:3 1999).

The Wellington Regional Council Regional Parks and Natural Forestry Asset Management Plan has a strong customer focus. The 'signature' process clarifies the significant characteristics of each park for community recreation as well as promoting sustainable management practices. The Wellington Regional Council takes a custodial role in actively managing natural and heritage resources in its parks.

Adapting the conventional asset management plan to effectively manage heritage assets appears successful. Although based on the *New Zealand Infrastructure Asset Management Manual*, the WRC has been very innovative in adapting the methodology to park management and heritage asset management. Heritage assets are grouped and managed according to type to improve efficiencies. Conservation plans are prepared for significant heritage assets and integrated within the asset management plan structure. The WRC has developed service levels which reflect sustainable management goals and good heritage conservation practice based on ICOMOS principles. Risk assessment is also a feature of the plan aimed at reducing crisis style management and improving forecasts.

Long Term Financial Plans support lifecycle management objectives with regular monitoring and reviews. Considerable effort has been made by the Wellington Regional Council to gather quality information to develop plans, improve resource allocation and decision making. The asset management plan appears to facilitate an integrated and multidisciplinary approach to protect heritage assets within the region's parks.

Case Study Three: Department of Conservation Historic Heritage Asset Management System

The information for this case study has been gathered from an informal interview with Paul Mahoney, Department of Conservation Central Regions Office (1999), and participation in an asset management 'visions' workshop designed to set service levels and forecast resource requirements for the Wellington Region. Communication with Sarah MacReady, Department of Conservation Auckland Regions Office (1999), and documents, *Auckland Historic Resources Strategy* (1996) and *Auckland Register of Actively Managed Historic Places* also contributed to the investigation.

Each Department of Conservation (DoC) conservancy has produced a *Register of Actively Managed Historic Places* which contribute to the *Historic Resources Strategy* for the region (MacReady, pers. comm., 1999). Each DoC conservancy has identified historic places it manages which merit and require 'active management' (i.e. expenditure in hours and funding on conservation and/or interpretation). This includes a condition monitoring programme for all the heritage places on land administered by DoC (MacReady, pers. comm., 1999).

The Department has begun to establish a comprehensive 'Historic Heritage Asset Management System' at a national level incorporating information into a national database from the Registers (Mahoney, pers. comm., 1999). The Historic Heritage Asset Management System is based on DoC's Visitor Asset Management System which was developed using the *New Zealand Infrastructure Asset Management Manual* (Dobbie, pers. comm., 1999). The Historic Heritage Asset Management System uses a site specific

framework. That is, where sites contain a number of assets, they are managed in the context of the site rather than by type. Five hundred sites have been identified and their assets entered into a national database (Mahoney, pers. comm., 1999).

The Department of Conservation aims to manage the heritage assets on the conservation estate in a sustainable manner. The large number and diversity of heritage assets to be managed with limited funds has led the Department to take a strategic approach using the asset management framework. Heritage assets have been categorised into one of three visions – fully utilised, museum, or landmark. This directs different levels of service to deliver protection to a wide range of heritage assets. The 'vision' process enables plans for each asset to be developed and implemented over a ten year period. Some heritage assets will continue to evolve with time and this is recognised in the vision and lifecycle management. Lifecycle management is divided into a two-tier hierarchy of conserved (active management) and protected status (primarily passive management). Simplification of the assessment and lifecycle management process has enabled the Department to categorise, forecast and plan conservation actions for a large number of heritage assets over a geographic area spanning the breadth of New Zealand to the Chatham and sub-Antarctic islands.

A comprehensive series of performance indicators and measures is designed to strengthen their heritage asset protection. This is one of the most significant features of the Department's asset management process. Competent monitoring and heritage comprehension is essential for effective and efficient heritage protection. The Department of Conservation's Heritage Asset Management System will be linked to the Department's Visitor Asset Management System.

Comparative analysis of heritage asset management plans and the conventional asset management plan

The three case studies have demonstrated how the conventional asset management plan designed for infrastructure assets, can be adapted to manage heritage assets. Table 4.2 summarises the components of the heritage asset management plans (contained in Appendix 6) to produce a synopsis in the form of a model heritage asset management plan.

Collectively, the heritage asset management plans reveal a number of key features. All the plans aim to achieve the sustainable management of heritage assets. To do this, service levels are developed to prioritise the protection of heritage values over other demands. Recognition of community interest in heritage places is an important aspect of identification, assessment and design of service levels.

HPA and ICOMOS criteria were used for assessment of heritage assets. Accurate and appropriate identification, assessment and management of heritage assets relies on quality information. Agencies emphasised the value of databases for collecting and accessing information on heritage assets. Conservation plans continue to play an important role for site specific management of heritage assets. These are incorporated within the lifecycle management process. Heritage assets were often grouped according to site or type to simplify management processes. The lifecycle process is adapted to recognise the specific features and lifecycle stages of heritage assets. Standards for conservation and maintenance are guided by the ICOMOS charter. In most cases the life of a heritage asset was perpetuated indefinitely through regular maintenance and monitoring.

Another feature of heritage asset management plans are performance indicators which are developed to ensure policy and implementation objectives are being achieved. Approaches to resource allocation favour the use of forecasts over asset valuation or other methods to justify investment. Forecasts are used to calculate long-term costs and support funding applications. Emphasis was placed on justifying continued use (income potential) and investment rather than placing an actual dollar value on heritage assets. This is because resource allocation methods are required to attract investment for implementing the lifecycle management plans (remedial work, maintenance, operations, monitoring etc).

Table 4.2 A summary of the heritage asset management plan case studies to produce a synopsis in the form of a model heritage asset management plan

Heritage asset management plan case studies			Synopsis of case studies
New South Wales Government	Wellington Regional Council	Department of Conservation	Model heritage asset management plan
Scope of asset management plan			
State scale: heritage assets owned or used by government agencies and local government.	Regional scale: heritage assets in Wellington regional parks and forests.	National scale: heritage assets within the conservation estate.	Applicable to wide range of scales: agencies/groups, local and central government, etc.
Definition of asset/ heritage asset			
Heritage assets are evidence of cultural origins and historical foundation of community .	Heritage assets comprise places and events that define the cultural character of society.	Heritage assets can be land, buildings or structures contributing to historical and cultural heritage.	The parameters of what constitutes heritage assets are defined for each plan and may include places and events that define the cultural character of society.
Key Objective			
Sustainable management of heritage asset by maintaining viable and living uses for heritage assets.	Maintain heritage assets at levels to meet expectations of community and achieve sustainable management of heritage.	Sustainable management of heritage assets.	Maintain heritage assets at levels to meet expectations of community and achieve sustainable management of heritage.
Roles and responsibilities			
Plan developed by state government, implemented by its agencies and local authorities.	Plan developed and implemented by regional council.	Plan developed by central government and implemented at a regional level by its conservancies.	Plan developed and implemented by a controlling agency.
Plan preparation process			
Identify, strategic plan, detailed plans, implement, monitor and review.	Identify, strategic plan, detailed plans, refine planning, implement, monitor and review.	Data collection (identify), asset evaluation (plan), implement and monitor.	Identification and data collection. Strategic and lifecycle plans, implement, monitor, and review.
Identification and assessment			
Criteria: historic, aesthetic, technical, social, scientific, special values. Conservation plan is primary information tool.	Criteria: number of heritage features; age, rarity, information, educational and scientific; cultural, associative values. Conservation plan is primary information tool for significant heritage assets.	Criteria: social/historical, traditional/cultural, archaeological, technological, aesthetic, architectural, rarity. Conservation plan is primary information tool for significant heritage assets.	Criteria: social/historical, traditional/cultural, archaeological, technological, aesthetic, architectural, rarity. Conservation plan is primary information tool for significant heritage assets.

Heritage asset management plan case studies			Synopsis of case studies
New South Wales Government	Wellington Regional Council	Department of Conservation	Model heritage asset management plan
Service levels			
Standards are set to ensure assets remain productive at lowest possible cost while retaining heritage values. A maintenance guideline and programme is developed for every heritage asset.	Objective is to retain heritage values and match service levels with community expectations – recreation focus. Asset condition and other factors determine service levels appropriate to the asset.	A desired state 'vision' is determined for each asset. There is a hierarchy of service levels determined by the level of asset utilisation.	Service levels are designed to ensure heritage values are retained. Service levels can be set on case-by-case basis Hierarchy of service levels may determine level of utilisation, condition and funding.
Lifecycle management			
Based on the useful life of the heritage asset. Management strategy aims to keep asset in productive use as long as possible (plans for at least 50 years). Burra Charter guides conservation.	Heritage assets managed according to type with grading standards and regular to 20-year maintenance cycles. Perpetuity primary goal but acceptance of finite lifecycle for some heritage assets. ICOMOS Charter guides conservation.	Heritage assets managed by site with active and passive management strategies for a 10-year period. Perpetuity primary goal but acceptance of evolutionary and limited lifecycle for some heritage assets. ICOMOS Charter guides conservation.	Heritage assets managed by site or type with active and passive management strategies for a 20-50 year period. Perpetuity primary goal but acceptance of evolutionary and limited lifecycle for some heritage assets. ICOMOS Charter guides conservation.
Resource allocation			
Forecasts are used to guide resource allocation and justify investment in heritage assets against other options.	Forecasts are used to guide Long Term Financial Strategy, guide remedial and maintenance investment, and support service level objectives.	Forecasts are used to support applications to Treasury for remedial and maintenance investment.	Forecasts are used to guide resource allocation and support funding applications for remedial and maintenance investment, and support service level objectives.
Monitoring and evaluation			
Asset performance measures assess service levels. Agencies monitor and review the use, effectiveness and efficiency of heritage assets and the implementation of plans.	Performance indicators measure heritage policy and management performance. Maintenance programmes are monitored for effectiveness.	Performance indicators and measures have been developed for monitoring maintenance, remedial work, heritage loss, conservation plans, staff capacity research and expenditure.	Performance indicators measure heritage policy, service levels and management performance. Maintenance programmes are monitored for effectiveness.

The next stage in the research is to compare the features of the model heritage asset management plan with the conventional asset management plan (derived from the *New Zealand Infrastructure Asset Management Manual* 1996). The purpose of the comparison is to determine where and how modifications should be made to guide heritage asset management planning.

The comparison of the conventional asset management plan with the model heritage asset management plan in Table 4.3 reveals both consistencies and divergences. Analysis shows that the asset management plan can be applied at a range of scales. There is however, a discrepancy between the definition of the asset which has an economic bias and the complexity of the heritage asset definition. The heritage asset definition makes links with the cultural and historical values held by society. This is formulated into objectives emphasising the sustainable management of heritage assets and reflects similar objectives in the conventional plan.

Table 4.3 Comparison of conventional asset management plan with model heritage asset management plan

Conventional asset management plan	Model heritage asset management plan
NZIAM Manual	Synopsis of case studies
Scope of asset management plan	
Scale ranges from single infrastructure asset to entire city or state network.	Applicable to wide range of scales: agencies/groups, local and central government, etc.
Definition of asset/ heritage asset	
A physical component of a facility which has an economic life of greater than 12 months.	The parameters of what constitutes heritage assets are defined for each plan and may include places and events that define cultural character of society.
Key Objective	
To promote good management in the most cost effective way using a defined level of service, lifecycle approach, cost-effective management, and sustainable use of physical resources.	Maintain heritage assets at levels to meet expectations of community and achieve sustainable management of heritage assets.
Roles and responsibilities	
Plan developed by agencies, councils or managers of infrastructure.	Plan developed and implemented by a controlling agency.

Conventional asset management plan	Model heritage asset management plan
NZIAM Manual	Synopsis of case studies
Process for plan preparation	
Organisational vision, strategic planning, asset management process: set service levels, lifecycle management (creation, economics, operations, maintenance, monitor, renew, replace, disposal, audit).	Identification and information gathering. Strategic plan and detailed lifecycle plans. Implement, monitor and review.
Identification and assessment	
Knowledge building, information and data collection phase.	Criteria: social/historical, traditional/cultural, archaeological, technological, aesthetic, architectural, rarity. Conservation plan is primary information tool for significant heritage assets.
Service levels	
Levels for service are set to enable service performance to be achieved and measured.	Service levels are designed to ensure heritage values are retained. Service levels can be set on case-by-case basis Hierarchy of service levels may determine level of utilisation, condition and funding.
Lifecycle management	
Policies, procedures and timetables to achieve cost-effective asset management to meet service levels and predict future demands.	Heritage assets managed according to type or site with grading standards and regular to 20-50year maintenance cycles. Perpetuity primary goal but acceptance of finite lifecycle for some heritage assets. Criteria for determining heritage asset disposal. ICOMOS Charter guides conservation.
Resource allocation	
Schedules optimum capital, renewal and operational expenditure to meet service levels over lifecycle of asset.	Forecasts are used to guide resource allocation and support funding applications for remedial and maintenance investment, and support service level objectives (protection of heritage values).
Monitoring and evaluation	
Monitor condition and performance to prevent asset failure and ensure service levels are met. Evaluate processes, information systems, plan content and context, and plan implementation.	Performance indicators measure heritage policy, service levels and management performance. Maintenance programmes are monitored for effectiveness.

The planning process adopted for the heritage asset management plan merges the identification and assessment features of traditional heritage planning (Table 2.3, Chapter 2) with the asset management plan. This establishes the priority of heritage values in heritage asset management and in defining service levels. This is a significant departure from conventional asset management planning where the emphasis is on the service potential of the asset rather than recognition of the special qualities of the asset.

In the heritage asset management plan, lifecycle management is adapted to extend the life of heritage assets in perpetuity. Where the emphasis for heritage lifecycle management is on retention of heritage values (by actively managing the asset), conventional asset management is focussed on service delivery and demand. Resource allocation methods also differ between conventional plans and heritage because the latter has a clearly defined goal of perpetuating the life of the heritage asset. Forecasts and resource allocation for conventional plans promotes a process of renewal and replacement which cannot be applied to heritage assets. Monitoring and evaluation methods are similar for all assets. Both heritage and conventional asset management plans use monitoring to prevent crisis management.

The most significant differences between conventional and heritage asset management plans are identified in three key areas. These are service levels, lifecycle management, and resource allocation. If modifications to these key areas can be made, the heritage asset management plan could be standardised and incorporated within mainstream planning processes. The objective of Chapter Five is to examine conventional asset management theory and heritage asset management practice as the basis for proposing a series of modifications and principles for heritage asset management planning.
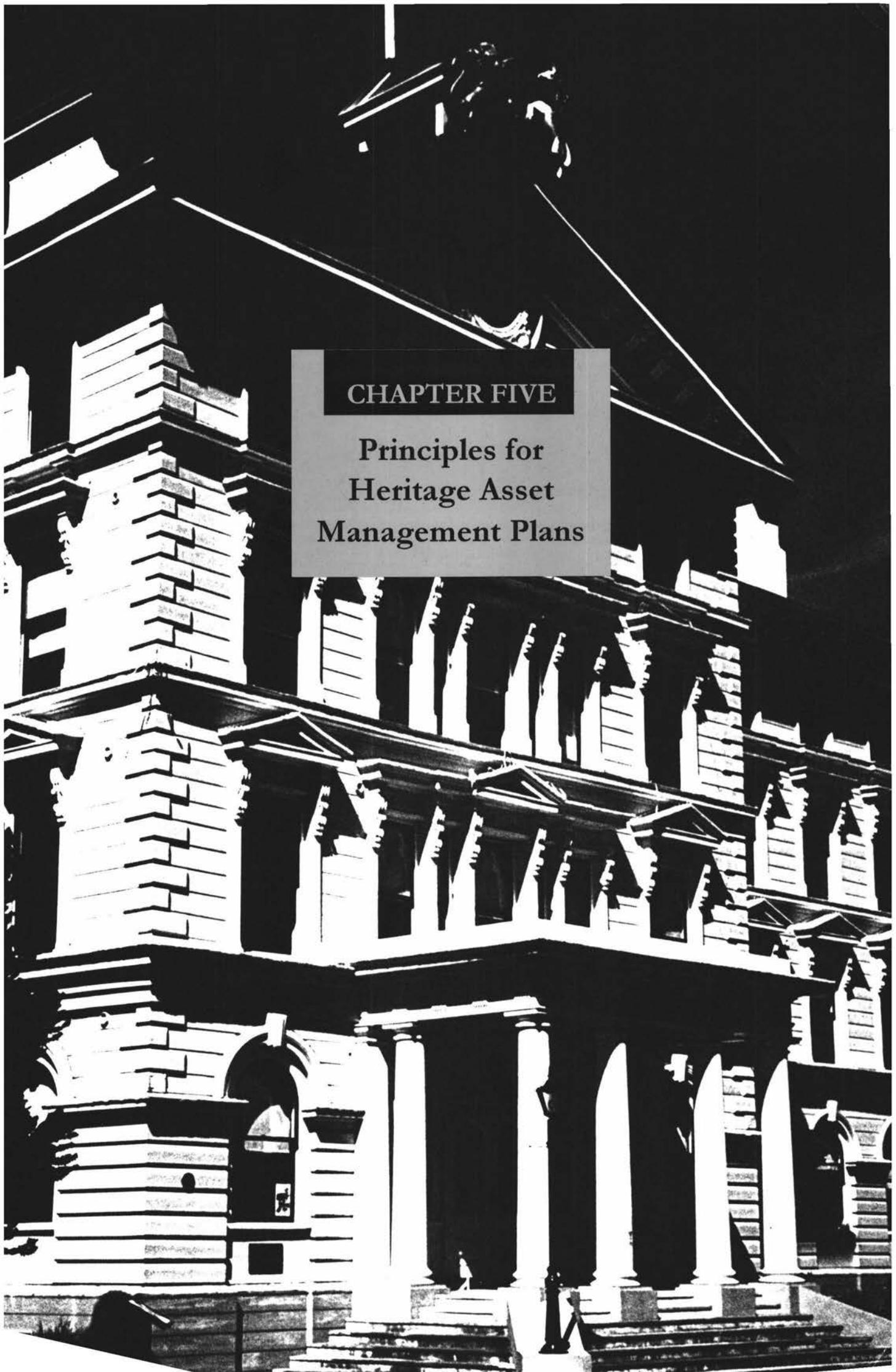
CHAPTER FIVE

Principles for Heritage Asset Management Plans

Principles for Heritage Asset Management Plans

The investigation and analysis in Chapter Four has identified the key areas requiring modifications to adapt the asset management plan to heritage. Although the case studies showed the asset management plan can be adapted to heritage, there are no consistent set of guidelines to steer the preparation of heritage asset management plans. The purpose of this chapter is to develop a set of principles to guide heritage asset management planning.

Many councils and agencies in New Zealand currently use asset management plans for managing infrastructure assets so there is potential for the methodology to be applied to heritage asset management. With the capability and skills in place, the challenge will be adapting the plan to deliver effective heritage management. Ultimately, the asset management plan may contribute to better recognition of the value, role and requirements of heritage assets, particularly in financial resource allocation and long-term management. These are the foundations of sustainable heritage management.

The objectives of conventional asset management (based on the management of infrastructure assets) are to provide a lifecycle management approach, cost effective management, a defined level of service and sustainable use of resources (NZIAMM 1996:1.2). Many of the principles of asset management can be applied to heritage management but there are some fundamental differences. These are:

- The objective of conventional asset management plans is optimising service delivery where heritage assets need special consideration of heritage values.
- The demand driven, cost effective bias of conventional asset service levels does not recognise the special values of heritage assets.

- Lifecycle management for infrastructure follows a process from creation through to renewal, replacement and disposal – some stages of the process are not relevant to heritage assets.

- Standards and objectives for infrastructure asset maintenance, operations and monitoring are very different for heritage assets.

- Resource allocation methods used for infrastructure asset management plans do not take into consideration the special values of heritage assets.

- Forecast methods are of more use to heritage assets than asset valuation or other financial assessments.

- Sustainable management objectives need to be reinterpreted to encompass the needs and interests of future generations.

This Chapter comprises three sections based on the major components of asset management: service levels, lifecycle management and resource allocation. The first part of each section looks at the conventional asset management theory derived from the *New Zealand Infrastructure Asset Management Manual* and other sources. This is followed by an analysis of the special requirements of heritage assets. A review of how case studies in Chapter Four (and Appendix 6) interpreted the asset management plan provide insights into heritage asset management practice. The theory and practice provide the basis for determining where and how changes need to be made to adapt the plan to heritage management. The proposed modifications and a series of principles for heritage asset management conclude each section.

Service Levels

Service level theory

Service levels for infrastructure asset management are usually activity-based and designed to deliver the needs and demands of customers. The *New Zealand Infrastructure Asset Management Manual* explains service levels as:

"The defined service quality for a particular activity (i.e. roading) or service area (i.e. streetlighting) against which performance may be measured. Service levels usually

relate to quality, quantity, reliability, responsiveness, environmental acceptability and cost" (1996:glossary).

Clarifying levels of service is the first stage in the asset management planning process. Service levels are developed from legislative requirements and customer expectations (NZIAMM 1996:2.26).

The standard approach for conventional asset management is to base service levels at current levels and regularly review and revise levels to reflect changes in customer demand (NZIAMM 1996:2.26). Customer expectations are derived from what customers want and how they want it delivered. This information is gathered through consultation, surveys and customer feedback. Matching infrastructure capacity and delivery with customer expectations requires a process of scoping, research, analysis and consultation to develop service levels (NZIAMM 1996:4.74). Infrastructure asset management planning focuses on the technical levels and delivery processes of service. An important objective of infrastructure service levels is matching the cost (price/quality) with service expectations to optimise service at the least cost (NZIAMM 1996:26).

Service levels can be developed for individual assets or for groups of similar assets, similar customer expectations or legislative requirements. A comprehensive understanding of the asset, service, economics and customer is essential for developing service levels. The service levels need to be measurable and deliverable. Part of achieving appropriate service levels is ensuring customers are aware of the financial impact of different service level options (NZIAMM 1996:4.82).

Service levels for heritage assets

Developing service levels for heritage assets is a more complex process than for infrastructure assets. Heritage assets are important components of communities and nations and while there are some obvious tangible benefits or services, there are many intangible qualities which contribute to a sense of place or contain inherent spiritual associations. This means the retention and conservation of heritage assets enable the

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'service' (amenity, historical, spiritual benefits, etc) to be realised. The service levels define *how* the service is delivered.

The challenge is developing service levels for heritage assets that recognise the expectations of people and users while managing the resource in a sustainable manner. An example of a service level for a historic lighthouse would be unlimited external access and interpretation for the public while limiting the interior for navigational uses only. Regular supervised open days could enable the public to experience the interior. In this way, the public are able to experience the lighthouse without adverse impact on the function or heritage structure.

Where infrastructure service levels aim to optimise service levels at the least cost, heritage asset service levels aim to optimise service levels (public access and utilisation) without compromising heritage values. Although cost is a factor, it need not predominate service level setting. Service levels for heritage assets may be benchmarked against whether they are achieving the primary objective of sustainable management of heritage assets.

Heritage protection may be the underlying goal of many heritage asset management plans, but 'sustainable management' recognises the needs of future generations and the evolving nature of heritage places which reflect community values. The concept of sustainable management is aligned with the purpose and definition in the Resource Management Act 1991 (see glossary). Not all heritage can be protected and sustainable management recognises that many heritage assets are still in a state of evolution. That is, people are still contributing to the cultural value of the asset through its ongoing use. An example of this is a historical alpine hut still in regular use and contributing to alpine sports experiences (Mahoney, pers. comm., 1999).

Hall and Arthur (1996) examine how to manage the human dimension of heritage management without divorcing people from their historical and cultural heritage through over-protection. They emphasise the difficulty in balancing heritage protection with the demands of the people visiting or using heritage places. One of the major threats to heritage assets is damage by people whether deliberate or inadvertent. Service levels

can be developed to minimise the impact of people on the heritage resource and at the same time maximise the experience for visitors or users.

Heritage is the summation of people's values and perceptions so it is essential that heritage assets are managed in such a manner that people can experience the special values. Appreciation and enjoyment of heritage places by people is the key to heritage protection (Hall and Arthur 1996:6). In many cases, protection of heritage assets is in response to public demand so heritage education and interpretation can be valuable tools. Evidence shows that keeping heritage assets in a viable and appropriate use is the most effective way of protecting them (Brand 1992). The establishment of service levels can turn people management issues into achievable goals and actions which will sustain the heritage asset.

There are four areas of heritage interest which reflect the association of different communities or customers with the heritage resource (Hall and Arthur 1996:7). These are:

1. Economic: tourism, recreation, visitor spending, sponsorship, paying users.
2. Social: personal associations, community values and interest, cultural significance, sense of place, religious sites
3. Political: national symbols, heritage ownership, indigenous significance, institutional arrangements
4. Scientific: historical evidence, technological significance, (Hall and Arthur 1996).

Service levels can be developed for heritage assets to recognise the needs of some or all customer interests. The type, location, function and condition of a heritage asset will also be significant determinants in developing service levels. The service levels must take into consideration legislative requirements such as resource consents, building regulations, health and safety legislation and other relevant legislation (NZIAMM 1996:2.28).

Service levels for heritage assets are still in an experimental stage. The case studies in Chapter Four demonstrate different approaches generated from the expectations of the community as well as recognising the needs of those (customers) who use heritage assets.

Case study review

Balancing customer interest and use against protection of the asset can be a difficult task. The case studies in Chapter Four showed a range of approaches to service levels. The primary goal of each heritage asset management plan was to ensure the sustainable management of the heritage resource. This meant accommodating a level of use ranging from interpretation and visitor experience to full commercial use.

The service levels adapted by the New South Wales Government heritage asset management plan are designed to recognise and balance heritage values with utilisation. Regular monitoring programmes are designed to ensure service levels associated with keeping the heritage asset in a productive capacity did not compromise heritage values (NSWG 1996:21). The service levels for the NSW Government heritage asset management plan are set initially to meet the requirements of its employees working in heritage buildings. Service levels may also be developed to meet the needs of agency customers and the community who experience heritage assets in a different manner (e.g. as visitors or aesthetic appreciation).

The Wellington Regional Council designed service levels to manage heritage asset condition at a standard that ensures sustainable management of the resource. The service levels are also aimed at delivering recreational and cultural interest to the regional community and meeting corporate goals. Service levels have been developed on a generic basis for assets with similar characteristics for example, heritage buildings, marae buildings.

The Department of Conservation uses a hierarchical approach to service levels. Different service levels are used according to whether the asset is fully utilised or treated as a 'museum' or 'landmark' asset. The Department also recognises that some of its heritage assets are still evolving and service levels reflect this. They develop service levels on a case-by-case basis.

Proposed modifications to service levels for heritage assets

It is proposed that the primary objective of service levels for heritage asset management planning is the sustainable management of heritage assets. In this context 'service' equates to heritage values. This requires a shift of emphasis from the conventional asset management concept of 'service' to a broader context where service can be defined in terms of spiritual, aesthetic, scientific, historic or other less tangible values. Service levels define how the service (heritage value) is delivered – both the tangible and intangible. Heritage assets serve people, communities and nations by providing amenity value, historical continuity and a sense of place. To be effective, service levels need to prioritise heritage protection over customer or user expectations. At a lower priority level, service levels can also be used to set objectives for commercial uses or other purposes where service delivery is a factor. This is a significant departure from infrastructure asset management plans.

Any decisions regarding the use and management of the heritage asset need to be benchmarked against the primary objective to ensure the asset's heritage values are given priority. This means that the life of the heritage asset will be optimised and the needs and expectations of direct users (eg building accommodation) of heritage assets will be secondary to the protection of the asset's heritage values. The purpose of this approach is to enable the use of heritage assets without compromising their value.

Developing service levels for heritage will involve trial and error. The case studies demonstrated three approaches that aimed to achieve sustainable management of heritage assets whether in active or passive use. Ensuring heritage places are protected for future generations is an important aspect of sustainable management. The principle of developing service levels is to prioritise sustainable management of the heritage asset over the use or service delivery to customers. In this way, heritage values are less likely to be compromised in favour of short-term customer/user demand or profit driven decision making. A series of principles have been developed to guide the design and application of service levels for heritage asset management.

Proposed Principles for Heritage Asset Service Levels

1. The objective for service levels is to achieve sustainable management of heritage assets and recognise the interests of future generations.

2. Service levels need to reflect the sustainable management of heritage assets and the interests of individuals, communities and nations.

3. In the context of heritage assets, the 'service' translates to the heritage value it offers people, communities and nations, be it historic, aesthetic, scientific, social or simply contributing to a sense of place.

4. Service levels define how the heritage values are delivered whether it be interpretation, public access, or commercial use.

5. Service levels for heritage assets may be benchmarked to determine whether they are achieving sustainable management of the resource.

6. Protection of heritage values takes precedence over all other factors.

7. Service levels which can maintain active uses for heritage assets are the most effective means of achieving sustainable management.

Lifecycle Management

Lifecycle management theory

Lifecycle management is the second major component of asset management plans. The asset management planning process is based on the lifecycle of an asset. This means it is an integrated systematic planning process spanning from asset creation to disposal. The process emphasises effective utilisation and establishes the financial requirements for maintenance and rehabilitation throughout the life of the asset. The lifecycle process begins with asset planning strategies, and is followed by asset creation, accounting and economics, operations and maintenance, condition and performance monitoring, rehabilitation, renewal or replacement, disposal, audit and review (NZIAMM 1996:2.2). The lifecycle process is summarised in Table 5.1.

Lifecycle management is reliant on good quality information to guide decisions and forecast trends. It is important to have a comprehensive understanding of the customers, community, political and economic environments, engineering and other areas of expertise

as well as current systems and processes. The asset management process relies on an integrated multidisciplinary approach especially in the initial stages of plan development.

Identifying demand is the first step in asset management planning because this guides decisions on what should be acquired. The need for an asset is identified through a strategic analysis (function and costs of full asset life). This is to ensure the operational, maintenance, disposal and replacement costs are evaluated before acquisition (NZIAMM 1996:2.3). It is also important that financial considerations are balanced against asset utilisation and the ability to meet service delivery requirements.

Asset economics and accounting is a significant feature of lifecycle planning. Recognition of all costs associated with asset ownership throughout the asset's lifecycle enables future financial commitments to be planned for (NZIAMM 1996:2.3). The majority of decisions affecting lifecycle costs are made at the early planning stage. For this reason it is important to examine options for cost reductions before the asset is created or acquired. The development of cost forecasting capabilities by heritage management authorities is particularly important in this regard.

The effective and efficient operation and maintenance of assets is essential to ensure service levels are met by the asset throughout its lifecycle. This is achieved through condition and performance monitoring. Condition monitoring focuses on the physical aspect of the asset and includes risk management. Performance monitoring evaluates whether the asset is meeting its service level objectives. Asset rehabilitation or renewal is required when the asset is unable to meet its service levels. The decision to rehabilitate or renew an asset will usually be tested against financial and economic criteria to define the point at which funding will or will not be available. The lifecycle process includes regular asset management audits and a review at the end of an asset's life. These can be both internal and independent to facilitate continuous improvement of the asset management plan (including service levels) and maintain best industry practices (NZIAMM 1996:2.11).

Table 5.1 Summary of the infrastructure lifecycle asset management plan process

Lifecycle Infrastructure Asset Management Process	Actions
Asset planning strategies **Aim:** To meet customer needs in most efficient and effective manner.	Clarify purpose of service, level of service, length of service, evaluated future demand; lifecycle costs; determine adaptability of asset to a new level of service; justify costs for service levels; asset performance predicted; determine probability and consequences of asset failure.
Asset creation /acquisition **Aim:** To satisfy or improve a level of service.	Determine need for new asset/service; evaluate proposed project; clarify objectives, level and length of service; investigate alternative; determine future maintenance, operation costs and monitoring requirements.
Asset accounting and economics **Aim:** To consider all costs and revenues associated with an asset and provide forecasts for input into the funding process.	Determine lifecycle costs; predict risk of asset failure and costs to avoid failure; clarify funding requirements and arrangements for asset; produce an asset valuation.
Asset operations and maintenance **Aim:** To manage the operation and maintenance of assets.	Operations: determine whether asset is operating efficiently and effectively; develop a performance monitoring programme; audit operational practices; monitor asset failure; monitor costs. Maintenance: monitor asset/function fit; set reliability targets; performance recording systems; comparative asset maintenance assessments; audit maintenance levels and procedures.
Asset condition and performance monitoring **Aim:** To identify under performing assets, predict asset failure, and determine corrective action.	Condition assessment: prepare inventory on asset and establish requirements to maintain asset condition at adequate levels (including rehabilitation and replacement). Performance monitoring: determine asset's reliability, service requirements met, health, safety and environmental requirements met; compare current utilisation with capacity.
Asset rehabilitation/renewal **Aim:** To restore the asset to ensure required levels of service can be achieved.	Evaluate cost of rehabilitation versus replacement; determine funding requirements (full lifecycle costs) and options.
Asset disposal/ rationalisation **Aim:** To plan for the disposal of assets.	Identify assets for disposal; determine legal, environmental, social or heritage barriers to disposal; assess the costs for disposal versus alternative uses; audit assets to avoid technological obsolescence.
Asset management audit and review **Aim:** To ensure a continuous asset management improvements cycle, maintain best industry practices and quality standards.	Assess quality of asset management processes, information systems and data, asset management plans and implementation. Audits of asset management plan effectiveness, corporate performance in achieving asset management objectives and benchmarking against Best Practices to ensure continuous improvement cycle is maintained.

(Source: NZIAMM 1996)

Lifecycle management for heritage assets

Evidence from the case studies in Chapter Four suggests the lifecycle approach can be applied to manage heritage assets if a few modifications are made to the conventional infrastructure model. The lifecycle process translates some of the key aspects of the heritage management process presently used in New Zealand (Table 2.3) into a widely recognised management system. Conservation plans can also be successfully integrated into the asset management plan. Lifecycle planning for heritage should minimise risk of asset failure and avoid crisis style management which usually serves heritage very poorly.

There are some significant deviations from the conventional asset management plan but the lifecycle process offers many advantages for heritage management. Long-term planning ensures better understanding and decision making regarding each stage of the asset's life. One of the most significant features of lifecycle planning is regular maintenance and performance monitoring to improve planning and prevent deterioration of heritage assets. This addresses one of the key problems of heritage management – how to turn policy into action (Pearson and Sullivan 1995:213).

Case study review

Each of the agencies in the case studies have designed lifecycle plans to enable service levels to be met. Forecasting costs and work is achieved through preliminary planning and followed up by regular monitoring. There is universal recognition that remedial and maintenance work is essential to perpetuate the life and maintain the integrity of heritage assets. Application of ICOMOS principles are essential to achieving remedial and maintenance objectives for heritage assets. All the agencies aim to conserve heritage assets in a sustainable manner and have set service levels to reflect the level of use and value.

The New South Wales Government heritage asset management plan focuses on the service levels required to ensure active use to perpetuate the life of heritage assets. In the context of continued asset use, the Government considers regular monitoring investment and maintenance will extend the lifecycle of heritage assets indefinitely. Their approach emphasises finding appropriate uses for heritage assets.

The Wellington Regional Council follows the *New Zealand Infrastructure Asset Management Manual* lifecycle process. A systematic lifecycle process for heritage assets within the context of the wider park management ensures an integrated approach. Forecasting, monitoring and long-term maintenance planning to extend the life of heritage assets as long as possible are features of the plan.

The Department of Conservation manages two categories of heritage assets – protected and conserved status. Lifecycle management for each category is developed to prevent harmful human actions. They accept a level of natural environmental decay for protected status but minimise environmental deterioration for conserved assets (often in active use). A range of condition and performance measures guide maintenance requirements. There is acceptance that some heritage assets will have a finite lifecycle and service levels are developed to minimise human and environmental impacts as much as possible. Regular monitoring ensures remedial and maintenance work can be carried out on heritage assets to prevent loss.

Proposed modifications for heritage asset lifecycle management

The *New Zealand Asset Management Manual* lifecycle asset management process has been used as the benchmark to determine if and where changes are required to adapt the asset management plan to meet heritage asset requirements. The lifecycle management process adapted for heritage management has eight stages comprising: asset planning strategies, asset investment/ acquisition, asset accounting and economics, asset operations and maintenance, asset condition and performance monitoring, asset rehabilitation/ renewal, asset disposal/rationalisation, asset management audit and review. Each stage is discussed and modifications are proposed.

1. Asset planning strategies

The initial stage of the planning process is to determine whether an asset should be created or acquired using a detailed analysis of requirements/needs, service levels, costs, risks and lifecycle estimation at the outset. Whether the heritage asset is acquired or already in

ownership, the primary focus of the planning stage will be to identify and assess heritage values, and the most appropriate use (rather than need) for the heritage asset.

Determining a viable use for a heritage asset will depend on a number of factors including the past function of the asset, community and corporate/owner expectations, economics, location, condition, safety and the type of heritage values (e.g. architectural, technological, cultural etc) that must be protected. If the heritage asset must be modified for re-adaptive use, the planning strategy will provide a systematic and integrated assessment process to ensure appropriate decisions are made. This involves preparation of a heritage inventory (first part of a conservation plan), feasibility study, and assessment of conservation costs, operations and maintenance costs, service levels, and how community and private interests will be managed.

2. Asset investment/acquisition

For a heritage asset there is no actual 'creation' stage in the lifecycle process although this stage could equate to the point at which an agency/owner intervenes to manage the heritage asset/s. There may be no cost associated with the acquisition but considerable investment in rehabilitation may be required. Heritage assets may be acquired privately or publicly, whether voluntarily or as the result of community pressure, bequest or other means. Many councils and public agencies have inherited heritage assets so the creation/acquisition stage may be used to formulate plans for managing the heritage asset from there on. This would include objectives for the asset, determining service levels and more detailed analysis of the issues raised in the planning strategy.

The *New Zealand Infrastructure Asset Management Manual* proposes a value management approach to lifecycle planning which can also be applied to heritage asset management This entails avoiding unnecessary expenditure, questioning assumptions, generating new and innovative ideas, optimising resources (money, time, energy) and simplifying methods and procedures.

3. Asset accounting and economics

There are some significant differences between accounting and economics for infrastructure and heritage assets which require the conventional approach to be modified. The main accounting and economic factors for assets are life costs, risks, funding and valuation.

The approach to lifecycle costs for heritage assets differ from infrastructure assets because heritage usually has a community expectation of an infinite lifecycle. This will mean long term funding strategies aimed at keeping the heritage asset at specific service levels rather than accepting depreciation as part of a process because asset renewal is not an option. Investment in maintenance and rehabilitation will increase as heritage assets become more vulnerable with age. Therefore, cost reduction opportunities associated with infrastructure lifecycle management are unlikely to be appropriate for heritage assets.

Risk management for heritage assets has many similarities to that of infrastructure. The main difference is that planning for failure modes needs to take into consideration that replacement of a heritage asset is not an option.

Another digression from infrastructure asset management is heritage asset valuation. This is because the valuation must incorporate heritage values and community expectations as well as financial values. Currently, most infrastructure asset valuations are based on the replacement cost of the asset or the ability of the asset to generate earnings. Although replacement valuation has little applicability to heritage, some heritage assets are able to generate income and a valuation may be determined on this basis. Translating heritage values into financial terms may not always be possible but there should be some form of objective recognition to support an financial valuation. An example could be inclusion of additional notes on heritage values with financial statements and plans.

Framing community expectations in terms of financial support for heritage assets can be achieved through cost-benefit analysis and more specifically through use of contingent valuation (consultation process). Heritage assets are likely to be best served by evaluating ratepayer/community willingness to pay for investment. Another approach which may arise

where developer interests need to be balanced against community interests is the developer willingness to accept compensation. That is, the amount of financial compensation the heritage asset owner is willing to accept in lieu of modifying or destroying the heritage asset. It should be noted that the decisions concerning investment and compensation are influenced by the cultural and political climate of the day and may not necessarily take into account the interests of future generations.

Another approach used to value assets is to depreciate the asset by its age. This is inappropriate for heritage assets because it is often the significant age of the asset which gives increases a heritage asset's value (in the same context as antiques). Depreciation methods widely used in infrastructure asset management, will discriminate against heritage assets and should be avoided.

With many heritage assets there may be no return on investments so profit performance indicators may need to be replaced with indicators for asset performance (retention of heritage values and where applicable, meeting user expectations), condition, customer satisfaction and consistent long-term achievement of service levels (NZIAMM 1996:1.5).

4. Asset operations and maintenance

The process followed for infrastructure is very similar to heritage. The day-to-day management and maintenance of heritage assets is important to reduce the risk of fabric failure, environmental damage, careless use and vandalism. Service levels need to be appropriate for the heritage asset because a good match between condition and function, will mean operations and maintenance costs will be lower. In many cases any remedial or maintenance work will impact on the original fabric and threaten the integrity of the asset so this needs to be minimised. It is essential that the heritage values are protected and both operations and maintenance plans should detail how this will be achieved.

The principles of operating a heritage asset are effectiveness and efficiency without compromising the heritage values. Efficiency relates to the best use of funds to ensure the viability and use of the heritage asset. The level of utilisation for a heritage asset needs to permit modification of the usage if the activity is shown to be damaging the asset and in

particular, its heritage values. A monitoring programme will highlight whether the operations plan is successful (effective and efficient).

Regular monitoring will be able to alert heritage managers to maintenance requirements to keep the heritage asset at a consistent standard and service level. The focus is on prevention rather than cure so early warning of deterioration is important. Conservation plans can be integrated into maintenance programmes to guide actions for each heritage asset. Maintenance information should be documented with timeframes in conservation plans where possible. Understanding the heritage asset is essential to ensure appropriate maintenance work is carried out.

Conventional infrastructure asset maintenance aims to upgrade, refurbish or replace failing materials to extend the life to continue or improve performance capacity. Maintenance of heritage assets must follow ICOMOS principles which ensure the integrity (age and special heritage characteristics) of the heritage asset are retained. Pearson and Sullivan (1995) suggest conservation treatment and maintenance follow a process of:

1. documentation of problem and proposed changes, remedial or maintenance work
2. analysis of factors causing deterioration
3. diagnosis
4. review of treatment options
5. testing of treatments/approach before application to the heritage asset
6. decision on the best conservation option
7. treatment (including documentation)
8. continuous evaluation, monitoring and maintenance (1995:252).

An important aspect of maintenance is the retention of the heritage asset's characteristics which convey time and 'experience'. Heritage assets contain many irregularities which need to be conserved as part of the patina of age and history. This means, in many cases, that maintenance methods need to retain the patina of age whether it be rust on corrugated iron or lichen on timber. For this reason, heritage buildings should not be made to look like new and maintenance treatments need to be carefully managed so the patina is not destroyed as this could affect the heritage values and historical integrity. In many cases,

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specialist conservation architects and craftspeople would be employed for maintenance work because heritage asset fabric is often fragile, non-standard (e.g. cob brick), and requires traditional craft techniques to emulate the original fabric. All work should be recorded so the new work can be identified, modified or removed in future.

5. Condition and performance monitoring

Condition and performance monitoring is one of the principal features of asset management plans and one of the primary reasons why the plan is an effective tool for managing heritage assets. Knowing the state of assets is the key to developing effective operations and maintenance programmes to prevent deterioration of heritage assets.

Regular monitoring of heritage assets will identify whether the use is appropriate, predict and prevent asset/fabric failure, assess whether service levels are appropriate and determine what corrective action to take and when. Although the condition does not necessarily affect the use of a heritage asset, it is often a significant factor in retention of heritage values and therefore its performance as a heritage asset.

The asset management process aims to record and measure condition and performance assessments (NZIAMM 1996:2.8). There are many benefits of knowing the current condition and performance of heritage assets. The benefits include:

- the ability to plan for long-term delivery of service levels, maintenance requirements to meet those service levels and accurate prediction of future expenditure
- avoidance of premature asset failure mitigated with minimal intervention (consistent with ICOMOS principles) and cost-effective preventive actions
- risk management associated with asset failures
- refinement of maintenance and rehabilitation strategies due to better knowledge of the asset condition
- awareness of business risk/heritage values and potential loss to the government, organisation, community or owner (NZIAMM 1996:2.9).

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Condition and performance monitoring programmes comprise grading scales and measures to objectively evaluate asset performance, requirements and costs. Both infrastructure and heritage asset monitoring employ specialised skills for assessing and resolving any problems. Condition and performance measures need to be developed for heritage assets to enable effective and consistent monitoring. Monitoring programmes for heritage assets will ensure the assessment process is repeatable because the lifecycle expectation is often for perpetuity.

One of the difficulties of evaluating performance of heritage assets is there is no single measure that will reflect the relationship between the asset's level of service and the community/customers. Where there is no income generation or profit performance measures, indicators may need to measure asset condition/performance against customer satisfaction.

6. Asset rehabilitation/renewal

The *New Zealand Infrastructure Asset Management Manual* defines the asset rehabilitation/renewal stage as the activity of restoring assets to ensure that required levels of service can be delivered (1996:2.10). An analysis of the infrastructure rehabilitation/renewal stage shows that the renewal aspect is not directly applicable to heritage asset management. This is because it is unlikely that heritage assets can be renewed without compromising their integrity or losing their heritage values.

In a broader interpretation, rehabilitation could refer to the replacement or restoration of components of a heritage asset. This would be carried out to protect the heritage values, functional condition, performance and extend the life of the asset. ICOMOS principles should be adhered to for any rehabilitation plans. Rehabilitation would most likely be in response to asset failure or adaptive re-use. It may involve considerable investment and would be carried out after long intervals of time. Infrastructure rehabilitation costs are often assessed against replacement, customer benefits, funding availability, and maintenance costs (NZIAMM 1996:2.10). Economic justification for rehabilitation

investment in heritage assets could be assessed in response to heritage significance, community interests, customer benefits, and income potential.

The benefits of heritage asset restoration will extend beyond the direct users of the asset to the greater community. Decision making on whether to invest in heritage asset rehabilitation may include community input. Rehabilitation should be in accordance with ICOMOS principles and appropriately funded to ensure these standards can be met.

7. Asset disposal/rationalisation

There are a number of circumstances which may necessitate the disposal of heritage assets. These are safety issues, development pressures, or loss of heritage values' through deterioration or changing community attitudes. Legislation and district plan rules largely dictate the parameters for safety and development pressures. Heritage asset disposal as a result of deterioration is not uncommon and often relies on the community (including NZ Historic Places Trust) to rally and protect the asset. District Plan heritage schedules are indicators of community attitudes and preferences for protecting heritage assets. If a heritage asset is no longer considered significant its heritage values will not assure its protection and may become vulnerable to disposal like any other asset which no longer serves a purpose.

It is possible although not desirable that rationalisation may occur in circumstances such as compilation of heritage registers where only representative examples of heritage assets are listed. The negative impact of this could be that heritage assets not on the register, are not eligible for funding and consequently at a higher risk of deterioration or disposal.

The disposal of a heritage asset is permanent – the heritage values intrinsic to the asset can not be replaced. Therefore decisions relating to heritage asset disposal need to investigate alternative options, follow a formalised process and include community consultation. If a heritage asset is to be disposed of, it should be recorded for posterity. This would entail thorough documentation, photographic and video recording of the asset and its context/location.

8. Asset management plan audit and review

The purpose of asset management plan audits are to ensure a continuous improvement cycle, maintain best industry practices and to assess the quality of processes, information systems and plan implementation (NZIAMM 1996:2.11). Audits cover three main areas – corporate direction, asset management plan effectiveness and benchmarking against best practices (NZIAMM 1996:2.12).

The approach used for infrastructure asset management plan audits is appropriate for heritage assets. The benefits of the audit and review for heritage assets are the opportunity to ensure that all processes are integrated, that heritage *is* being protected, and if not why not. The audit can take into consideration wider issues which may affect the effectiveness of heritage asset management plans such as political influences, funding or community issues. Best practice benchmarking can be derived from ICOMOS principles to ensure conservation standards are achieved. Other factors such as cost predictions, asset performance and condition, and customer satisfaction can also provide valuable information and guidance for improving heritage asset management plans.

The asset management plan provides a transparent and accountable process which has significant potential for protecting heritage assets. This is because the asset management process relies on thorough documentation and analysis of assets followed by accountable actions and measures. It will be less likely for heritage assets within the asset management framework to deteriorate or be disposed of without informed decisions on the options and consequences of the actions. The audit and review process further supports the clarity of the plan.

Lifecycle management summary

Table 5.2 summarises the heritage lifecycle management process and comprises modifications to the conventional lifecycle process (Table 5.1) identified in the preceding discussion.

Table 5.2 Summary of the heritage lifecycle management process

Heritage Lifecycle Management process	Actions
1. Asset planning strategies **Aim:** To protect heritage assets and meet customer needs in most efficient and effective manner.	Prepare heritage inventory to identify heritage values of assets. Clarify community expectations. Determine most appropriate use, level of service, length of service, lifecycle costs; determine adaptability of asset to a new level of service; justify costs for service levels; asset performance predicted; determine probability and consequences of asset failure.
2. Asset investment or acquisition **Aim:** To acquire or improve a heritage asset meet service levels.	Determine need for acquisition or investment in rehabilitation or means of intervention and costs of heritage asset; determine potential uses and service levels; evaluate proposed project; For all heritage assets - clarify objectives, level and length of service, investigate alternatives, determine future use and maintenance, lifecycle operation costs and monitoring requirements, establish full costs of asset rehabilitation/acquisition. Acquire heritage assets for District Plan schedule (community consultation, expert advice).
3. Asset accounting and economics **Aim:** To consider all heritage asset costs and revenues.	Determine lifecycle operating and rehabilitation costs; predict risk of asset failure and allocate funds to avoid failure; Calculate income potential, determine funding requirements and arrangements for asset; produce an asset valuation incorporating heritage values if possible.
4. Asset operations and maintenance **Aim:** To manage the operation and maintenance of heritage assets.	**Operations:** ensure asset is operating efficiently, effectively and heritage values are protected; develop a performance monitoring programme; audit operational practices; monitor to avoid asset failure; monitor costs. **Maintenance:** prepare conservation plan for heritage asset and develop maintenance programme consistent with ICOMOS principles; monitor use of heritage asset to reduce maintenance and risk of failure; set reliability targets; performance recording systems; comparative asset maintenance assessments; audit maintenance levels and procedures.
5. Asset condition and performance monitoring **Aim:** To identify heritage assets at risk from condition failure or under performance and determine corrective action.	**Condition monitoring:** refer to heritage asset's conservation plan to determine whether condition, especially heritage values, are being appropriately maintained. Document condition changes to determine when maintenance or rehabilitation may be required in future to perpetuate the life of the heritage asset. Regular condition monitoring should enable corrective action to avoid asset failure. **Performance monitoring:** monitor asset's use to ensure it is compatible with its condition and does not compromise heritage values. Monitor reliability of asset to determine whether service, health, safety and environmental requirements are met and if not take corrective action. Compare current utilisation with capacity.

Heritage Lifecycle Management process	Actions
6. Asset rehabilitation **Aim:** To restore the asset to ensure heritage values are protected and levels of service can be achieved.	Evaluate cost of rehabilitation versus permanent loss of heritage asset to the owner, agency or community; determine funding requirements (full lifecycle costs) and options.
7. Asset disposal/ rationalisation **Aim:** To plan for the disposal of heritage assets.	Identify heritage assets for disposal; determine legal, environmental, social or heritage barriers to disposal; assess the costs for disposal versus alternative uses. May require community consultation if it affects assets on heritage schedules. Heritage asset should be fully recorded before disposal
8. Asset management audit and review **Aim:** To ensure a continuous asset management improvement cycle, maintain best industry practices and quality standards.	Assess quality of asset management processes, information systems and data, asset management plans and implementation. Audits of asset management plan effectiveness, corporate performance in achieving asset management objectives and benchmarking against best practices to ensure continuous improvement cycle is maintained.

(adapted from Table 5.3 and the NZIAMM 1996)

It is possible to adapt the infrastructure asset lifecycle management process to meet the specific requirements of heritage assets. The process is action-oriented and aimed at developing a comprehensive understanding of the heritage asset and its environment. Management of heritage assets is a multidisciplinary approach and is designed to include checks and balances to ensure an information rich, comprehensive process is followed. The ICOMOS Charter and conservation plans (the traditional tools of heritage management) continue to have relevance and are integrated within the lifecycle process to offer site specific information and procedure.

Lifecycle management facilitates strategic long-term planning of heritage assets to prevent asset failure or loss. The information gathered from lifecycle management is used to guide decisions on resource allocation. A series of principles have been developed to guide lifecycle plans for heritage assets.

Proposed Principles for Heritage Lifecycle Management Process

1. The heritage asset lifecycle process is capable of translating heritage policy into effective and efficient series of management actions.

2. The integrated approach enables heritage asset condition to be given priority over asset use and thereby protecting heritage values.

3. ICOMOS principles and conservation plans can be incorporated into the lifecycle process and guide maintenance and rehabilitation.

4. Condition and performance monitoring is essential to prevent heritage asset loss.

5. The condition of heritage assets should retain their age and heritage characteristics rather than be maintained or rehabilitated to a new state or condition.

6. All stages of the process can be documented with clear accountabilities and responsibilities which improves understanding and management of a heritage asset.

7. Lifecycle management enables long-term strategic and financial planning aimed at perpetuating the life of heritage assets.

8. Heritage asset valuation needs to take into consideration intangible qualities and heritage values which may not be attributed financial values.

9. The lifecycle process can be applied at any scale – from an individual heritage asset to a council's heritage schedule.

Resource Allocation

Resource allocation overview

The third component of the asset management plan is forecasting asset expenditure and revenue to prioritise resource allocation. The objective of resource allocation is to ascertain the future financial liabilities regarding operation, maintenance, rehabilitation or replacement of the asset and facilitate cost saving opportunities for each asset (NZIAMM 1996:2.5). Knowing an asset's total lifecycle costs improves on-going management, decision making, allows comparison of asset alternatives to optimise operation and maintenance programmes, benchmarks the actual cost performance of the asset and enables comparative reviews against other assets to guide future acquisition decisions (NZIAMM 1996:4.54).

Resource allocation relies on forecasting techniques to guide investment. Forecasting entails the provision of financial information to assess the operating and capital cost profile for the management of an asset over a defined time period. Assessment of the asset lifecycle provides a sound basis upon which to predict these costs. This financial information will often be used as part of the wider financial planning processes employed within the agency or council. For example, the forecasts in asset management plans are an important component in long-term financial strategies developed by councils under the Local Government Act.

Resource allocation (or investment appraisal) applies to the prioritising of funds between competing investments or assets. The methods employed to evaluate and value the prospective investments will influence which assets are preserved or improved and which assets are abandoned or rationalised. For this reason it is important to select methods that will take into consideration the values to be quantified, information availability and quality, and the expense (Kerr 1986:49).

Asset valuation methods are required to comply with statutory requirements, industry standards, reflect the value of the assets to the community, be consistent, cost effective and integrated with asset management practices (NZIAMM 1996:4.32). The *New Zealand Infrastructure Asset Management Manual* stresses that the valuation from an asset management perspective evaluates the remaining useful life rather than the standard economic life (1996:4.32). The typical process adopted by the Manual involves scoping assets to determine the most appropriate method, followed by research, analysis, trial and implementation of the most appropriate method.

The recommended valuation treatment for infrastructure assets is market value and depreciated replacement cost methodologies (NZIAMM 1996:4.34). Market value is defined as the estimated value of an asset if it were sold on the date of valuation between a willing seller and buyer. The replacement cost is calculated from replacement of an existing asset with a substantially identical new asset. The depreciated replacement cost is defined as 'the replacement cost of an existing asset after deducting an allowance for wear

or consumption to reflect the remaining economic life of the existing asset' (NZIAMM 1996). Table 5.3 shows the types of valuations used for specific assets.

Table 5.3 Assets matched with appropriate valuation methods

Asset type	Service area	Basis of valuation
Infrastructure assets	Land	Market value
	Buildings	Depreciated replacement cost
	Commercial plant	Depreciated replacement cost
	Reticulation systems	Depreciated replacement cost
	Road Formation, pavement etc	Depreciated replacement cost
	Traffic facilities	Depreciated replacement cost
	Bridges	Depreciated replacement cost
Ordinary fixed assets	Land	Market value
	Buildings	Market value

(Source: NZIAMM 1996:4.34)

The valuation of infrastructure assets is derived from:

- the replacement costs
- assessment of optimisation (the most cost effective replacement which performs the same or improved function)
- remaining economic life (age, service utilisation, condition assessment, performance assessment)
- the decline in value.

The economic life and depreciation rates of assets need to be identified for assets to be eligible for depreciation tax deductions (an allowance to take account of assets that wear out or become obsolete), to guide investment (replacement or repair), and to prioritise funding allocations (NZIAMM 1996:4:36). The Income Tax Act 1994 provides a schedule to guide economic life and depreciation calculations. The *New Zealand Infrastructure Asset Management Manual* has used the Act's schedule as a starting point for assessing standard economic lives. The methodology used is summarised in Appendix 7. A series of predictive factors (age, use, performance) contribute to a realistic economic valuation of the existing life of the asset.

Resource allocation for heritage assets

A range of resource allocation methods used for infrastructure asset management planning can be used or adapted to heritage asset management planning. Most forecast methods can

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be directly applied to heritage assets for the purpose of predicting future trends and changes, and prioritising investment. Achieving sustainable management objectives for heritage assets may be more difficult. There is a public expectation that many heritage assets will be there for the enjoyment of future generations in perpetuity and resource allocation methods and decisions need to recognise this.

Another departure from conventional infrastructure asset management planning is consideration of a complex set of factors relating to heritage values, community value, intangible qualities and value to future generations. Resource allocation methods need to be carefully selected and may need adjustment to be effective for heritage asset planning.

Resource allocation methods cannot easily take into account values which are not expressed in prices such as heritage values. The allocation of funds for investment in assets relies on an accurate assessment of the values that society places on the asset (Kerr 1986:1). Unlike infrastructure assets whose value to society is derived from the delivery of services, heritage assets derive value from less tangible qualities (spiritual, historical, etc) intrinsic to each asset. Difficulties arise when different types of assets and values are compared when competing for funds. For this reason, it can be easier to make resource decisions when values are measured in a common unit (such as dollars) so direct comparisons can be made (Kerr 1986). This raises some problems because it can be difficult to attribute financial values to heritage assets for several reasons (Blaschke 1996). These are:

- the financial value cannot be determined by the market alone because this value has a limited time horizon and may be too subjective,
- the financial value needs to reflect cultural and heritage values,
- the benefit of retaining the asset may have an uneven effect on individuals/community,
- intangibles such as social and spiritual values which contribute to a 'sense of place' are hard to value but must be considered,
- heritage assets have a range of significance values and should not all be deemed 'priceless',

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- heritage valuation needs to be a pragmatic process with well-justified criteria to ensure transparent and consistent evaluation methods are used,
- depletion costs may cause heritage values to rise as more heritage is lost,
- contextual and rarity values must be taken into account (Blaschke 1996);
- intergenerational issues where assets need to be valued in a manner that ensures their viability for future generations.

Heritage assets may not have a market value, depreciated replacement value or be capable of returning an income as infrastructure assets do. This is because heritage assets can not compete in the market place or be depreciated without losing all their value (*age* is their value). This can make it difficult to determine a realistic value and justify investment. If heritage assets are to compete for funding within the asset management framework it is likely that a financial value will need to be attributed for comparative evaluations to be made. A series of criteria can be applied to determine whether or not a heritage asset should be evaluated in financial terms (Ellis 1998:2). The criteria are:

- Service potential or utilisation: This is the ability of the heritage asset to generate income, meet its service levels, or achieve the agency's objectives/outputs. This does not necessarily mean cash flows, but applies more broadly to its potential to achieve specific objectives such as research, education or amenity value;
- Control: The ability of the agency to control the service potential of a heritage asset;
- Threshold: The estimated value of the heritage assets must be above a government specified recognition threshold (e.g. $2,000);
- Probable benefits: This applies where service potential in some form will be generated by the heritage asset;
- Reliable measure: The heritage asset has a cost or value that can be reliably measured and could include ability to meet service levels (Ellis 1998:3).

The cost-benefit analysis using contingent valuation methods may address most of the issues of heritage asset management. The case studies in Chapter Four indicated that agencies were concerned with evaluating the costs and benefits to both the community and the organisation to determine funding priorities. This is perhaps best achieved by using the

contingent valuation in combination with other financial allocation methods. Contingent valuation is designed to create an artificial market or evaluation. This technique amounts to asking people what they would be willing to pay for the conservation of an asset (Bard and Pearce 1995:5). In this way, the level of public commitment can be evaluated and may also assist in forecasting the interests of future generations.

The cost-benefit analysis can be used to support or prevent development decisions relating to the asset (Pagiola 1996). The valuation of the asset's service potential in event of changes is measured against the costs of the changes and existing service potential. Where service potential is limited as is often the case for heritage assets, achieving cost-effectiveness would be the objective. In most cases this will mean achieving the most cost-effective way of achieving the conservation objective. Pagiola (1996) highlights the problem of the many intangible benefits of heritage and the difficulty translating these into measurable values. He proposes subtracting all measurable benefits from project costs and subjectively comparing the outstanding costs against the unmeasurable values.

A more comprehensive interpretation of the cost-benefit analysis developed by Bard and Pearce (1995), addresses some of the difficulties arising from the case studies. That is, to secure funds to finance maintenance and conservation of assets. To simplify the process, Bard and Pearce (1995:5) propose two types of values:

- the money value of benefits of development (eg increase in heritage tourism expenditure)
- the money value of resource costs of development (eg. labour, materials, machinery).

These two parameters can be used to calculate the benefits of conservation minus the costs of conservation. The result provides the value of conservation by defining the total economic value of conservation using a series of values. These are *use values* (function) + *indirect values* (indirect functions and benefits) + *option value* (future use) + *existence value* (the value of the conserved state to people even if they don't use it – they simply want it to exist) (Bard and Pearce 1995:5). This is a complex but comprehensive method which can take into consideration some of the less tangible benefits of heritage. The

method requires more time and resources to resolve the valuation problems of non-market situations such as heritage.

The valuation methods discussed are but a few of the many available. They each address different aspects of resource allocation. The method for service utilisation would prove useful for guiding financial investment where there is income generation and also where there is significant heritage value to the community (public good). The contingent valuation method could establish the latter value. Pagiola's (1996) version of the cost-benefit analysis effectively incorporates heritage values and conservation objectives to guide investment decisions. The emphasis of this method is more on the outcome than the present valuation. Bard and Pearce's (1995) also takes a creative approach, translating heritage values into a valuation method which recognises the intangible values of heritage assets. It is probably the most comprehensive method and again focuses on the value of conservation investment.

Heritage asset valuation has been associated with determining heritage significance values, not financial values. Heritage values need to be factored into financial valuations because these qualities give the asset its value and context.

As the range of cost-benefit methods alone have indicated, theories on resource allocation and heritage valuation are beginning to emerge from practice. The three case studies investigated in Chapter Four reveal that agencies are quick to customise resource allocation processes to meet their specific needs. A review of the case studies follows.

Case study review

The methods used in the case studies were dictated primarily by the use of the heritage assets. This meant factors such as income earning potential could be factored into investment decisions. In the two New Zealand case studies, financial valuations of heritage assets were not used as both agencies focussed on forecasting the lifecycle (remedial and maintenance) costs required to meet service levels. It is perhaps important to note that all the agencies kept methods and processes as simple as possible. This is probably due to the

public ownership and interests in the heritage assets and the need for open and comprehensible processes.

The New South Wales Government applies a system which includes an economic appraisal, risk analysis and value management to provide financial values of heritage assets. This is done to encourage agencies to find uses for heritage assets rather than create new assets.

The Wellington Regional Council does not require a financial valuation of heritage assets for its asset management plan. It relies on asset accounting methods to forecast the potential costs of remedial and maintenance work. The information is initially to be used for securing approval from councillors for funds to enable delivery of the specified service levels for the region's parks and forests.

The Department of Conservation has two valuation methods. If necessary, it will use the replacement value (replacing with identicate) to support a claim, but the priority is forecasting costs of remedial and maintenance work for funding applications to Treasury. Maintenance cost estimates are calculated on a case-by-case basis with the objective of meeting specified service delivery levels.

Proposed modifications to resource allocation approaches for heritage assets

It is evident from the wide range of theories and practice that resource allocation for heritage assets has not been fully resolved. The two New Zealand case studies focussed on lifecycle cost forecasts rather than resource allocation and reflect the early stage of their asset management planning process. Choosing or adapting the right forecast or financial method to achieve a desirable outcome is likely to be the key to achieving good heritage asset management.

Forecast methods should be selected to recognise the current public interest in heritage assets as well as the needs of future generations. Recognition of the needs of future generations may lead to long-term financial plans aimed at extending the life of heritage assets in perpetuity. A failure to have good forecasts (and hence long term organisational

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planning) will result in a crisis based approach to management of heritage assets. The provision of sound financial forecasts through the asset management process is critical to enable councils and heritage managers to see the challenges ahead and the decisions which will need to be made. This will help achieve sustainable management of heritage assets.

Resource allocation within the asset management framework offers plenty of scope for innovation in the future. Turning heritage values into measures that enable heritage assets to compete with other assets for funds will not be an easy task. It may not be possible or desirable to translate heritage values into financial terms. There is a wide range of resource allocation techniques available, some of which offer non-financial valuations. The cost-benefit analysis is one method which offers a well recognised approach that can be customised to guide resource allocation for heritage assets. It is important that the interests of the community are taken into account when allocating resources to heritage assets. For this reason it is important that resource allocation methods for heritage management allow for some level of public consultation, are kept simple and in a format that can be understood by those affected.

The following set of principles have been drawn from the preceding discussion of approaches to resource allocation. They are designed to guide the selection of methods for forecasting, valuation and resource allocation for heritage assets.


Proposed Principles for Resource Allocation

1. Heritage values and the intangible qualities of heritage assets may not be possible to translate into financial terms.

2. Heritage asset valuation should recognise heritage values in financial decision making even if they cannot be translated into financial terms.

3. Forecast methods and resource allocation techniques should accommodate sustainable management objectives.

4. Resource allocation methods should be selected so heritage assets are not compromised.

5. Heritage assets cannot be replaced or depreciated.

6. Financial methods should be chosen for their simplicity where the public have an interest in the heritage asset.

7. Resource allocation decisions should be based on and be consistent with lifecycle asset management.

Conclusion

Service levels, lifecycle management and resource allocation are the major components of asset management planning. In this chapter, each component has been analysed in the context of the conventional infrastructure asset management plan and then modified to meet the needs of heritage assets. A series of principles have been developed to guide the preparation of heritage asset management plans. The principles have been developed in conjunction with the *New Zealand Infrastructure Asset Management Manual* to ensure heritage asset management plans will be consistent with each other as well as other types of asset plans. Collectively, the principles are designed to overcome both the heritage deficiencies of the conventional asset management plan and problems associated with current heritage management practice. The most significant modifications to the asset management plan are:

- Sustainable management of heritage assets is the primary objective of heritage asset management plans.

- Service levels are adapted to recognise heritage values and prioritise these over other demands.

- The lifecycle process is adapted to recognise the specific lifecycle stages of heritage assets (no creation, renewal, replacement options).

- Standards for heritage asset management (condition, maintenance and monitoring) are guided by the New Zealand ICOMOS Charter.

- Conservation plans are integrated into the lifecycle process.

- Resource allocation methods need to accommodate the special values of heritage assets which may not translate into financial terms.

- Forecasts need to consider perpetuity of heritage assets for long-term plans and financial strategies.

In Chapter Five, a group of experts review the modifications and principles proposed in this chapter. The objective of the review is to evaluate the proposals and whether the principles are feasible for guiding asset management planning.

CHAPTER SIX

Expert Review

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CHAPTER SIX

Expert Review

In New Zealand, managing heritage places using an asset management framework is a relatively new concept and it may be some time before the process and practice can be adequately evaluated. For this reason, an expert review of the heritage principles for asset management plans proposed in Chapter Five is aimed at providing more certainty on the feasibility of implementation.

The preparation and implementation of heritage asset management plans incorporates a range of disciplines. To recognise this in the review, both heritage and asset management perspectives on the potential effectiveness of the approach have been sought. Evidence from the case studies (Chapter Four) suggests heritage asset management plans are likely to appeal to agencies with heritage place management responsibilities such as regional councils and territorial authorities. Knowledge of the contexts in which the heritage asset management plan may be applied are an important aspect of the evaluation. Expert reviewers were selected for their experience within councils and other agencies with heritage and community responsibilities.

The criteria for selecting reviewers were based on their familiarity with either heritage management or asset management, and for their opinions as potential users of the heritage asset management plan. The reviewers were:

Richard Kirby, member of the National Asset Management Steering Group

Peter Richardson, senior policy analyst, New Zealand Historic Places Trust

Greg Vossler, senior planner, Palmerston North City Council

Gavin McLean, historian, Historical Branch Internal Affairs

Ian Bowman, conservation architect *(part contributor)*.

The reviewers were sent the fifth chapter of the dissertation – Principles for Heritage Asset Management Plans, with an explanation of the review objectives and questions. A separate response booklet was supplied. The information and questions sent to reviewers are presented in Appendix 8. Reviewers were given two weeks to respond.

A series of questions were posed at specific points in the chapter booklet given to reviewers. The questions were designed to:

- gain a response on the overall approach – what the reviewers considered the main heritage place management issues and whether the asset management plan is a worthwhile approach to heritage management;

- to collect specific comments on the viability, strengths, weaknesses, and possible improvements of each of the areas investigated – service levels, lifecycle management and resource allocation; and

- establish whether reviewers considered the modified asset management plan for heritage management (or parts of the plan), capable of implementation.

The objective of the expert review is to determine whether the proposed modifications and principles for heritage asset management plans will constitute a feasible approach for heritage management. The structure of the Chapter comprises five sections: heritage management, service levels, lifecycle management, resource allocation and concluding discussion.

Comments by the expert reviewers are summarised and presented in tables within each section. This is followed by a discussion of reviewers comments to establish where modifications are required to enable the principles to be adopted for heritage asset management plans. For the most part, comments have not been attributed to reviewers because the focus is on the content of evaluations. The exception is where comments are quoted verbatim or reviewers propose ideas for improving the proposed principles. The discussion focuses on the key themes arising from reviewers comments. Suggestions by reviewers on particular points of detail are used to guide refinements to the proposed modifications and principles. The revised principles are presented at the end of each

section. The Chapter concludes with comments and discussion on whether the proposed asset management plan for heritage is capable of implementation.

Heritage management

In this section, reviewers comment on the causes of heritage place loss and heritage management in New Zealand. Questions were asked to establish the nature and breadth of heritage management problems experienced or observed by reviewers. Reviewers were also asked to impart their knowledge and opinions of asset management plans and comment on heritage asset management plans as a worthwhile approach for heritage management. The results of the expert review are presented in Table 6.1. The following discussion focuses on the key themes arising from reviewers comments.

Table 6.1: General views on heritage place management and asset management plans
1.1 The main causes of heritage place loss in New Zealand were considered to be:
• The lack of value placed on heritage places.
• Development pressure in central business districts and certain rapidly growing areas.
• Perceived costs associated with the retention and adaptive re-use of heritage places.
• Deferred maintenance – reduction of heritage value through conscious neglect.
• Neglect – especially in rural areas and in small towns.
• A general lack of knowledge eg. sites are unknown, post 1945 buildings may not be considered 'heritage'.
• Inadequate controls in district plans due to inadequate knowledge of heritage issues.
• Inadequate incentive funding
• Lack of a National Policy Statement and fully comprehensive heritage strategy for heritage management and protection.
• Total lack of funds, especially for commercial heritage buildings.
• New Zealand Historic Places Trust lacks power.
• Afforestation – which may affect archaeological sites.
1.2 The current problems with heritage management in New Zealand were considered to be:
• Inadequate legislation which is applied inconsistently to archaeological and built heritage.
• Lack of a National Policy Statement and fully comprehensive heritage strategy for heritage management and protection.
• Lack of adequate direction and support from local and central government agencies to assist owners of identified heritage places (eg preparation of advisory material on cyclical maintenance and provision of funding) to facilitate the preparation of management plans.

- Little knowledge of adequate maintenance for heritage places.
- Lack of understanding of heritage place maintenance and therefore no provision for seeking advice from trained heritage conservation professionals.
- Heritage property owners do not pay adequate attention to the cyclical maintenance requirements of their property.
- Insufficient funding for both publicly and privately-owned heritage places.
- Inadequate resources – particularly 'compensation' funds, rates relief, tax relief.
- Legislative requirements such as seismic strengthening of buildings (Building Act) has the potential to incur high compliance costs.
- Lack of understanding or appreciation of the specific characteristics/qualities that contribute to a place being regarded as important historic heritage.
- Limited training and opportunities for heritage management staff/specialists.
- Uncertainty in management systems following four years of review
- All the difficulties identified by the Parliamentary Commissioner for the Environment (1996) and Historic Heritage Management Review 1998-99.
- Poor resourcing of existing heritage management systems.
- Lack of education programmes.
- Heritage places do not have tangible economic returns and are therefore not considered to be 'valuable' compared with assets with measurable values.

1.3 Reviewers briefly described the objective of asset management plans they have used, and whether it was a successful approach:

- The main objective of asset management plans was to determine what needs to be done to keep service levels sustainable in the future.
- The objective of the asset management plan (heritage component) was to recognise heritage values and allow adequate funding to be allocated to manage the assets. It was considered a useful approach.

1.4 Reviewers were asked whether they consider the adaptation of an asset management plan could be a worthwhile approach for heritage management in New Zealand:

- Three of the reviewers thought the approach worthwhile and one reviewer thought it could possibly be worthwhile.

Comments included:

- The plan would assist in ensuring that ongoing, long term conservation issues associated with heritage places are addressed and would provide a mechanism whereby these could be attended to in a robust systematic fashion.
- Service levels would need to be defined so other factors can be considered in the heritage context.
- Recognition that many places are already served by buildings conservation plans or cyclical maintenance plans.

- The plan's relationship to other heritage management systems needs to be further examined in the context of management plans prepared under the Reserves Act, conservation plans prepared privately and under the relevant sections of the Historic Places Act, District Plan provisions, RMA protection mechanisms, provisions of the Antiquities Act.
- Most of New Zealand's heritage is in private ownership. This raises the question of to what extent it can it be 'managed' by a national or even local asset management plan unless all owners at heritage places agree to the plan or are stakeholders in some other way.

Discussion: Heritage management

The first two questions raise issues about heritage place loss and heritage management in New Zealand. The objective was to determine whether reviewers perceived a problem with heritage management. This was an important part of the review because evaluation of the proposed principles for heritage asset management plans were designed to address specific heritage management issues.

Reviewers comments demonstrate that the causes of heritage place loss are varied and range from inadequate legislation to lack of funds and neglect. Many of the causes are derived from a lack of national leadership, funds, and knowledge. A number of cause and effect relationships are evident between the current problems of heritage management and the causes of heritage place loss. For instance, the lack of adequate direction and support (resources, funding, education) for heritage owners by local and central government agencies is probably resulting in neglect and deferred maintenance of privately-owned heritage property.

Reviewers comments on heritage place loss and heritage management reflect many of the issues identified in Chapter Two (Heritage Management). The purpose of Chapter Two was to identify problems facing heritage management in New Zealand. One of the key problems identified in the dissertation was how to turn heritage policy into action. Although none of the reviewers expressed this as a specific problem, many of their comments highlighted the lack of heritage strategy and protection as well as a lack of knowledge of maintenance requirements.

Reviewers were asked to share their knowledge of asset management planning. This question was designed to gauge the degree of familiarity reviewers had with the framework. Two reviewers had worked with asset management plans and had positive comments about the approach.

The final question gauged whether reviewers were receptive to the asset management plan concept for heritage management. Most were enthusiastic albeit with a few reservations.

Service Levels

In this section, reviewers comment on the service level concept and how it has been modified to recognise the special features of heritage assets and management. The purpose of the questions regarding service levels for heritage asset management was:

- to determine whether reviewers consider the modifications realistic and applicable in New Zealand; and
- to use their evaluation of the strengths and weaknesses to improve the modifications and principles.

The results of the expert review are presented in Table 6.2. This is followed by a discussion of reviewers comments to determine where modifications are required to improve the proposals.

Table 6.2: Review of heritage service level modifications
2.1 Reviewers were asked whether they thought service levels needed to be adapted to heritage management: Positive response from three reviewers and concerns raised by one reviewer. The concerns were regarding 'who' decides what service levels are appropriate and considered the term confusing when the 'service' is largely 'intangible'. **The modifications of service levels were considered to be:** • Necessary and generally appropriate. **Comments on how the modifications could be improved:** • The modifications appear to be premised on the dominance of heritage protection over other expectations. And although this may be justifiable from a 'public ownership' perspective (eg DoC/local authorities) it may prove to be problematic when applied to privately-owned heritage places. In this situation, some degree of compromise may need to be developed

between protecting identifiable heritage values and meeting the property owners expectations regarding the continued economic viability of the place (Vossler).

- There could be a basis for considering a two-tier approach to service level provision. One category that is focussed on places in public ownership which places a premium on protection of heritage values over all other factors. The other category would be directed toward private ownership which encapsulates an acknowledgement that issues associated with protection and use will need to be reconciled on a case-by-case basis (Vossler).

- A more robust approach is needed to measure heritage values. For instance, a weighting for certain types of architecture over other heritage assets (McLean).

- The changing perceptions of heritage values need to be acknowledged (Richardson).

- Need to define what heritage is (Richardson).

Comments on alternative approaches:

- One reviewer questioned what was wrong with the current approach of developing policy, objectives and rules for service delivery under the RMA, conservation planning procedures and management plans under the Reserves Act, etc.

2.2 The strengths of the approach to heritage service levels were considered to be:

- Recognition of community interests and their accessibility to heritage assets.

- Strong emphasis on public good.

- Approval of heritage place interpretation as an important service.

- Provides a context within which management decisions regarding service levels for heritage places can be made.

- Introduces a more transparent systematic basis for informing management decisions.

- It provides administrators and users of heritage with an explanation of service delivery decisions, a set of goals and benchmarks for the future.

2.3 The weaknesses of the approach to heritage service levels were considered to be:

- Lack of process to empower Maori to manage their heritage. The lack of robustness in defining the service levels.

- The interpretation of service levels assumes that protection will take precedence in all situations. In reality, protection may need to be balanced against other factors such as economic viability if the place is to enjoy a long-term future.

- Lack of definition of what heritage is.

- Lack of distinction between levels of significance – it is implied that all heritage is of equal value and should be protected.

- Lack of clarity about what service levels mean – not all the community will want the same level of service, if at all.

2.4 Reviewers were asked whether they agreed with the 'Principles for heritage asset service levels':

- Generally considered to be comprehensive but comments identified where improvements were needed.

Improvements were recommended:

- Principle 1: Include a reference to present generations in reference to sustainable management (McLean).

- Principle 6: Review current wording as a literal application because this tenet may conflict with the intentions expressed in Principles 1 and 7 (ie. protection may seriously restrict the range of active uses that could plausibly establish in a place and this in turn, could affect long-term sustainability) (Vossler).

- Principle 7: The use of and even acknowledgement of the existence of some places may be inappropriate such as wahi tapu (sites sacred to Maori) (McLean).

Discussion: Service Levels

The discussion focuses on the key themes arising from reviewers comments. Comments in response to the proposed modifications to service levels raised a number of issues relating to terminology, interpretation and application. Positive comments were made supporting the use of service levels although most reviewers pointed out the limitations of the proposed modifications and offered ideas for improving the proposed principles.

Concerns over 'who' decides what service levels are appropriate are valid. If the heritage asset management plan is to be applied at central and local government level, representatives from these agencies, along with New Zealand Historic Places Trust, Ministry of Culture and Heritage and other stakeholders could collectively develop appropriate service levels as benchmarks to guide agencies. A National Policy Statement may also guide service levels. Service levels should be designed so there is flexibility to recognise the specific requirements of heritage places and the communities which they serve. Service levels can also recognise the 'intangible' aspects of heritage places. For instance, public enjoyment of a heritage place may be an appropriate service level which could include education and support for heritage protection. This approach may also address the concern for a more robust measure of heritage values. The Historic Places Act and ICOMOS Charter provide guidance on heritage value assessment which can be used to develop of service levels.

A number of improvements to the modifications were proposed by reviewers. Greg Vossler raised concerns about the dominance of heritage protection over other expectations or demands. This is an important consideration and his suggestion of a two-tier approach is a promising solution. Developing separate service levels for heritage places in public ownership and private ownership allows different factors to be managed within the appropriate context. A realistic approach which recognises the commercial and domestic demands of owning a heritage property is more likely to achieve sustainable management objectives.

Two further issues were the need to define what heritage is and how perceptions of heritage values change. The case studies in Chapter Four showed that each of the agencies provided a definition of heritage for their asset management plans. This will be added to the series of principles to guide service level design for heritage. Perceptions of heritage values will change and it can be expected that this will be reflected in the selection of heritage places for registration/district plan schedules and the amount of resources invested by the community and owners.

One reviewer questioned what was wrong with the current approach. The answer lies in four years of heritage reviews and the list of heritage management problems and reasons for continuing heritage losses identified in Table 6.1. One of the strengths of the asset management plan is that it provides a contextual framework for management decisions regarding service levels for heritage places. It is also a transparent systematic basis for informing management decisions and incorporates community interests.

One of the weaknesses identified referred to the lack of process to empower Maori. This is debatable. The asset management plan can be applied by any group and at a scale appropriate for iwi and hapu to manage their heritage responsibilities. Maori can develop their own asset management plans, design service levels which reflect values important to them, select heritage places to include in their plan and decide how they should be managed. The most important factor for Maori will be empowering them with funding, resources and training so they can manage their own heritage places.

The lack of robustness in defining service levels and lack of clarity about what service levels mean in different contexts (eg community) are factors which will take time to resolve through practice and experience. The lack of distinction between levels of significance and the assumption that service levels will be designed to protect heritage places is resolved by Vossler's suggestion of a two-tier service level which may balance protection against other factors.

A number of amendments to the 'Principles for heritage asset service levels' have been made to reflect comments and improvements suggested by reviewers.

Revised Principles for Heritage Asset Service Levels

1. The objective for service levels is to achieve sustainable management of heritage assets and recognise the interests of present and future generations.

2. Asset management plans for heritage should define the term 'heritage' as well as the types of heritage assets the plan will manage.

3. Service levels need to reflect the sustainable management of heritage assets and the interests of individuals, communities and nations.

4. Separate service levels for heritage places in public ownership and private ownership allows different factors to be managed within the appropriate context.

5. In the context of heritage assets, the 'service' is interpreted to mean the heritage value it offers people, communities and nations, be it historic, aesthetic, scientific, social or simply contributing to a sense of place.

6. Service levels define how the heritage values are delivered whether it be interpretation, public access, or commercial use.

7. Service levels for heritage assets may be benchmarked to determine whether they are achieving sustainable management of the resource.

8. Protection of heritage values may need to be balanced against other factors, but where possible, protection should be a priority.

9. Service levels aimed at maintaining active uses for heritage assets may in some cases, be an effective means of achieving sustainable management.

Lifecycle management

Lifecycle management is one of the key features of asset management plans. Reviewers were provided with the theory underpinning lifecycle management and asked to comment on the proposed modifications to adapt the conventional asset management plan to provide for heritage places. The purpose of the review of lifecycle management was:

- to determine whether reviewers consider the modifications realistic and applicable in New Zealand; and

- to use their evaluation of the strengths and weaknesses to improve the modifications and principles.

The results of the expert review are presented in Table 6.3, followed by a discussion to establish where modifications are required to improve the research.

Table 6.3: Review of lifecycle management modifications for heritage assets
3.1 Reviewers were asked whether lifecycle management could be adapted to heritage management:
• Positive response from all reviewers although one reviewer thought the term 'lifecycle' inappropriate in the context of heritage management.
Comments on how the modifications could be improved:
• Because of the complexity of lifecycle management it is most likely to appeal to agencies with heritage place responsibilities rather than 'lay property owners'. For the process to be effective it needs to be accessible and comprehensible to the widest possible spectrum of owners otherwise its application is likely to be limited. Associated with this is the perceived implementation cost which could have an adverse effect on acceptance of the approach (Vossler).
• The approach may need to be tailored to a specific user/audience. The proposed modifications would appeal to public agencies but not necessarily to private land owners. A more detailed explanation of the lifecycle stages and corresponding actions would be required to address this audience (Vossler).
• The use of cyclical maintenance plans needs to be built into the process (Richardson).
3.2 The strengths of the approach to heritage lifecycle management were considered to be:
• Lifecycle management facilitates a process where questions are asked and resolved to produce a robust lifecycle management plan.
• Integrates conservation planning and recognition of heritage values with owners 'business plans' for maintenance and rehabilitation.
• Establishes a rational overall strategy for heritage management.

- Encourages a long-term perspective to be applied to heritage management.
- Provides a mechanism whereby the heritage values of a place can be managed in a comprehensive and integrated fashion over time.

3.3 The weaknesses of the approach to heritage lifecycle management were considered to be:

- It may be difficult to apply an exacting science to an abstract entity such as heritage.
- The approach may be perceived by the owners of some heritage places as overwhelmingly complex and costly to implement.
- Difficulties may arise in adapting the asset management plan easily to a council's heritage schedule when a council may have limited or at least varying degrees of control of the maintenance/conservation of items in private ownership.

3.4 Reviewers were asked whether they agreed with the 'Principles for heritage lifecycle management':

- Most reviewers generally agreed but a few principles require amendment.

Improvements were recommended:

- Principle 2: heritage values may not be protected if a non-pragmatic approach to asset condition takes predominance over asset use – condition may be considered irrelevant if there is no feasible use of the asset.
- Principle 5: may not always be appropriate for Maori buildings or structures or for some European items such as moving machinery.
- Principle 9: although the process can be applied at any scale, the potential implementation costs may preclude it from being implemented as widely as this principle might imply.
- Principle 9: small scale of asset management plans may not be viable – especially for private heritage owner.
- Additional principle recommended: Affordability or economic context within which the collective principles for heritage lifecycle management may apply (Vossler).

3.5 Additional comments on the approach to heritage lifecycle management for heritage:

- There is a need to clarify that not all principles or steps in the process have equal weight.
- Heritage asset management plan users need to be reminded of the crucial importance of heritage significance.

Discussion: Lifecycle management

Reviewers comments were generally in support of the proposed modifications for lifecycle management. One of the main issues raised was the context and scale for applying the heritage asset management plan. There were concerns about the level of complexity of lifecycle management and the potential costs for implementing the plan. Vossler proposed that lifecycle management would be more relevant to public agencies than individual property owners and that the process needed to be accessible and

comprehensible. This observation raises the issue of how to make the asset management plans accessible to individual property owners. The solution may lie in the use of conservation and cyclical management plans.

The use of cyclical maintenance plans was raised by Peter Richardson, along with suggestions that they be integrated into the lifecycle process. Cyclical maintenance plans provide a detailed roster of a heritage building or site's maintenance requirements over a defined period. They are often produced in association with conservation plans. It may be possible to address the issue of scale and applicability of the asset management plan at an individual property level with a first tier of plans. That is, to produce conservation and cyclical maintenance plans at the individual property scale which can be incorporated into the wider planning process. Cyclical plans would be included with conservation plans in the 'asset operations and maintenance plan' stage of the lifecycle process. It may even be possible to equip private property owners with the skills to prepare their own plans and for councils or agencies with heritage expertise to provide advice on plan preparation Financial incentives could be offered to private property owners who prepare their own plans and actively conserve their heritage assets. A principle based on a two-tier structure is proposed.

Another reviewer was concerned with weaknesses in adapting the asset management plan to a council's schedule of privately-owned heritage places. There will need to be significant voluntary commitment to a community wide heritage asset management plan and it relies on creative approaches developed by councils/communities to encourage participation. Many councils already offer a range of incentives and advice to heritage property owners and so it may not be difficult to integrate these mechanisms into the heritage asset management plan.

Concerns were raised over the application of the 'exacting' process of lifecycle management to the abstract entity of heritage places. In practice, the lifecycle process has a good degree of flexibility. Agencies in the case studies (Chapter Four) customised lifecycle plans to their particular circumstances. It is likely that with the experience of application, parameters for heritage lifecycle management will emerge.

There are many favourable comments regarding the strengths of the lifecycle approach. The most prevalent view is the potential to provide a rational, systematic and long-term strategy to mange heritage places. The integration of conservation plans (currently the pivotal documents in heritage place management) within the lifecycle process also received positive responses.

A number of amendments to the 'Principles of heritage lifecycle management' have been made to reflect comments and improvements suggested by reviewers.

Revised Principles for Heritage Lifecycle Management Process

1. The heritage asset lifecycle process is capable of turning heritage policy into an effective and efficient series of management actions.

2. All endeavours should be made to protect heritage values when developing and implementing operations and maintenance plans.

3. ICOMOS principles should be used to guide conservation and cyclical maintenance plans which can be incorporated into the lifecycle process.

4. Condition and performance monitoring is essential to prevent heritage asset loss.

5. In most cases, retention of age and heritage characteristics should be maintained at a level which ensures the integrity of the heritage asset is protected. Maintenance or rehabilitation to a new state or condition should generally be avoided.

6. All stages of the process should be documented with clear accountabilities and responsibilities to improve understanding and management of a heritage asset.

7. Lifecycle management enables long-term strategic and financial planning aimed at perpetuating the life of heritage assets.

8. Heritage asset valuation needs to take into consideration intangible qualities and heritage values which may not be attributed financial values.

9. The lifecycle process can be applied on a two-tier scale:
   - Councils/agencies/groups with heritage responsibilities operate first-tier heritage asset management plans comprising second-tier plans.
   - A private heritage property owner could develop and implement 'second-tier' conservation and cyclical maintenance plans.

10. The appropriate tier of plan (Principle 9) would be determined according to the financial capabilities, scale of heritage assets and owner/custodial responsibilities.

Resource allocation

In this section, reviewers comment on approaches to resource allocation and how they have been modified to recognise the special features of heritage assets and management. The purpose of the review of the proposed resource allocation approaches was:

- to determine whether reviewers consider the modifications realistic and applicable in New Zealand; and

- to use their evaluation of the strengths and weaknesses to improve the modifications and principles.

The results of the expert review are presented in Table 6.4, followed by a discussion to establish where modifications are required to improve the research.

Table 6.4 Review of resource allocation for heritage assets
4.1 Reviewers were asked whether they thought resource allocation approaches needed to be adapted to heritage management: • Positive response from all reviewers. **The modifications to resource allocation approaches were considered to be:** • Necessary and appropriate. **Comments on how the modifications could be improved:** • Inclusion of a clearer statement of a recommended approach to resource allocation (Vossler).
4.2 The strengths of the approach to resource allocation were considered to be: • The identification of use values, indirect values, option values and existence values was considered to be very good. This is because resource allocation is complex and could become subjective. The proposed principles should help guide resource allocation. • It helps quantify costs of heritage protection. • It provides a means of quantifying the challenges ahead and informing investment decisions.
4.3 The weaknesses of the approach to resource allocation were considered to be: • The subjectivity of decisions regarding heritage places was a concern. However, it was also noted that the application of the proposed principles should overcome this weakness. • Difficulties of measuring or translating heritage values into dollars. • The lack of 'finesse' in existing valuation methods to address the range of non-financial attributes associated with heritage assets.
4.4 Reviewers were asked whether they agreed with the 'Principles for resource allocation': • Positive response from all reviewers although one reviewer commented that getting the resources will be a challenge.

Improvements were recommended:
• It would be helpful if heritage values could be translated into financial terms (Kirby).
4.5 Additional comments on the approach to resource allocation for heritage:
• Concern that there was no reference to the increasing value of heritage assets which may occur over time.

Discussion: Resource Allocation

Comments on resource allocation approaches for heritage assets were generally positive. A request for a recommended approach to resource allocation was the main comment. Unfortunately, the diversity of agencies likely to use heritage asset management plans and the range of circumstances and customisation likely to occur precludes nomination of any one method. The case studies in Chapter Four showed how agencies selected methods to reflect their corporate standards, legislative requirements, types of heritage assets and the objectives of the asset management plan. As heritage asset management plans are trialled, resource allocation methods to forecast, value and prioritise the requirements of heritage assets should emerge.

Comments by reviewers on the strengths of resource allocation approaches recognised the importance of quantifying the costs of heritage place protection to inform investment decisions. A number of weaknesses were noted with regard to the translation of heritage values into financial terms. Heritage valuation is a new area and there is significant scope for innovation. However, the cost-benefit analysis using contingent valuation methods is likely to be the best starting point for establishing heritage asset valuations and guiding resource allocation decisions. Evidence from the case studies (Chapter Four) suggests heritage valuation is less important than estimates and forecasts for conservation costs required for budgets and funding applications. The 'Principles for resource allocation' were designed to deal with some of the uncertainties of attributing financial values to heritage assets.

One reviewer raised concerns about the lack of reference to the increasing value of heritage assets occurring over time. This is a valid point because it is very relevant to sustainable management objectives. That is, heritage assets will become more valuable to

future generations with increasing age and rarity, as well as engendering cultural values. Unlike infrastructure or other assets where depreciation/age diminishes value, the increasing 'age value' of heritage assets needs to be recognised. It is probable that investment will have to increase to maintain asset condition as the asset ages. The reviewer's comment will be translated into a principle because it is an important consideration when evaluating investment in a heritage asset.

Amendments to the 'Principles for resource allocation' reflect comments and improvements suggested by reviewers.

Revised Principles for Resource Allocation

1. Heritage values and the intangible qualities of heritage assets may not be possible to translate into financial terms.
2. Heritage asset valuation should recognise heritage values in financial decision making even if they cannot be translated into financial terms.
3. Forecast methods and resource allocation techniques should accommodate sustainable management objectives and include the interests of the community.
4. Resource allocation methods should be selected with care so as not to compromise the special values of heritage assets.
5. Heritage assets cannot be replaced and should not be depreciated.
6. The value of heritage assets should increase with age.
7. Financial methods should be chosen for there simplicity where the public have an interest in the heritage asset.
8. Resource allocation decisions should be based on and be consistent with lifecycle asset management.

Concluding discussion

Comments by the expert reviewers on the components of heritage asset management - service levels, lifecycle management, and resource allocation approaches, provide valuable insights into the capability of the asset management plan to provide effective heritage management. The final set of questions were designed to obtain comments on the context, feasibility and an overall appraisal of the heritage asset management plan. That is, whether reviewers consider the plan could be implemented and reduce heritage place loss in New Zealand.

Table 6.5 Concluding comments

5.1 Reviewers were asked whether the adaptation of the asset management plan to heritage management was feasible:

- A very positive response was received from all reviewers.

Further comments:

- The concepts and principles can be adapted as outlined and the research proposals have shown quite effectively how this could be done.

- The exception where the heritage asset management plan may not be feasible will be some archaeological and spiritual sites of significance to Maori.

- The conventional infrastructural approach to asset management appears to have the potential to be applied to heritage places subject to the modifications suggested. Irrespective of the 'theoretical' potential allied with the introduction of asset management planning as applied to heritage places, factors that are likely to have a pronounced bearing on feasibility include complexity, comprehension and cost.

- The asset management plan should be able to work very well for heritage assets controlled by public bodies. How it might work in relation to council schedules and New Zealand Historic Places Trust registered properties in private ownership will be intriguing.

5.2 Reviewers were asked whether the heritage asset management plan would contribute to reducing heritage place loss and resolving heritage management issues:

- A generally positive response by reviewers.

Further comments:

- The heritage asset management plan will place value, where perhaps heritage assets may have been forgotten or disregarded.

- To a limited extent – the asset management plan will not provide regulatory protection or remove many external threats especially for privately-owned places.

- Asset management plans could help to better quantify the costs associated with the retention and/or adaptive re-use of heritage places. This in turn, may provide a more informed basis for decision-making relating to a heritage place.

- Asset management plans would help quantify costs of protection and management. It would not necessarily address resourcing issues or all the wider policy issues likely to be addressed in a National Policy Statement.

5.3 The collective principles for service levels, lifecycle management, forecasts and resource allocation to guide heritage asset management planning were considered:

- Adequate and all encompassing.

- As proposed, the principles provide a skeletal framework to guide the application of asset management to heritage places.

- Some issues need further clarification:
  - varying levels of significance needs greater emphasis;
  - the issue of how to quantify the financial value of heritage remains a substantial challenge.

- The ability to get the resourcing to implement is critical.

5.4 The most likely users of the heritage asset management plan would be:

- Central government
- Local government
- Historical societies
- Tourism companies
- Investment houses
- Department of Conservation
- Corporates who own heritage assets

5.5 Reviewers were asked whether the heritage asset management plan approach capable of implementation by agencies/local government/heritage managers:

- Very positive responses from all reviewers.

Further comments:

- A little more guidance or clarification on how the plan could be implemented would be necessary.
- The heritage asset management plan will be particularly advantageous for non-specialist managers and administrators such as policy managers in territorial authorities, church property managers, etc.
- It is capable of implementation subject to the comments/concerns regarding costs and accessibility to the widest possible spectrum of heritage owners (section 3.1).
- Some of the barriers might be:
  - lack of business experience and understanding of this approach amongst heritage managers;
  - funding issues;
  - relationship to other management structures and processes
  - issues of 'control' over plans in private ownership.

Additional comments by reviewers:

- The 'chapter was so very thorough and excellent that most of my energies were spent trying to think of any holes in the argument' (Richardson).
- 'I feel you have done some good work here and I hope that your completed dissertation will attract a wide readership' (Vossler).
- 'Overall this has merit. Good conservation plans and cyclical maintenance plans will already be meeting the needs of some buildings and places buildings but the broader approach has the advantage of 'mainstreaming' the process into the thinking and work programmes of administrators in addition to heritage sector workers' (McLean).

Discussion

The objective of the questions in this section was to establish whether reviewers considered the proposed asset management plan for heritage management (or parts of the plan), capable of implementation. The dissertation has concentrated on the technical aspects of adapting the asset management plan to heritage rather than its application. The

experience of reviewers has been invaluable for establishing whether the heritage asset management plan is actually feasible in the current political and economic climate. The discussion focuses on the key themes arising from reviewers comments.

The concluding comments made by the expert reviewers were very positive. In particular, all the reviewers considered that the adaptation of the asset management plan to heritage was feasible. Although there are reservations concerning applicability to individuals/Maori/private heritage property owners and resourcing, amendments to the research should address some of these issues. The most likely users of the heritage asset management plan were organisations with heritage responsibilities.

Reviewers were generally positive but had some reservations that heritage asset management plans would reduce heritage loss or resolve heritage management issues. This is probably due to the diversity of problems and issues surrounding heritage places. Some of the problems associated with heritage management listed in Table 6.1 (general views on heritage and asset management) can be addressed by the heritage asset management plan. The plan can improve knowledge of heritage asset maintenance requirements, heritage values and contribute to local and central government management plans. Of particular note, all the reviewers recognised the value of heritage asset management plans to quantify the costs associated with protection and management of heritage places. These comments reflect the benefits of the approach for agencies seeking funding for heritage conservation in the case studies discussed in Chapter Four.

How threats to privately-owned places can be reduced is a concern raised by several reviewers. Unless agencies, councils, or heritage owners are aware of the threats to their heritage places it is unlikely that any action will be taken to prevent losses. For this reason, the asset management plan is a valuable methodology for building knowledge and monitoring heritage assets. If an agency wants to protect its heritage resource it must be equipped with knowledge of its assets so rational decisions regarding management and resource allocation can be made.

The principles designed to guide heritage asset management planning were considered to be appropriate as a 'skeletal framework'. One reviewer sought further clarification on the how to quantify the financial value of heritage assets. The two New Zealand case studies demonstrated that this was less an issue than forecasting the costs of conservation for funding applications. As heritage asset management plans are prepared and implemented it is expected that the experience of practice will refine and resolve some of these issues.

A positive response on the potential of the plan to be implemented was received from all reviewers. Their comments have enabled the proposed principles to be improved so they have more practical application and relevance to agencies with heritage responsibilities. The expert review has been valuable for increasing the certainty that heritage asset management plans could be used to turn heritage policy into action and ultimately reduce heritage place loss.
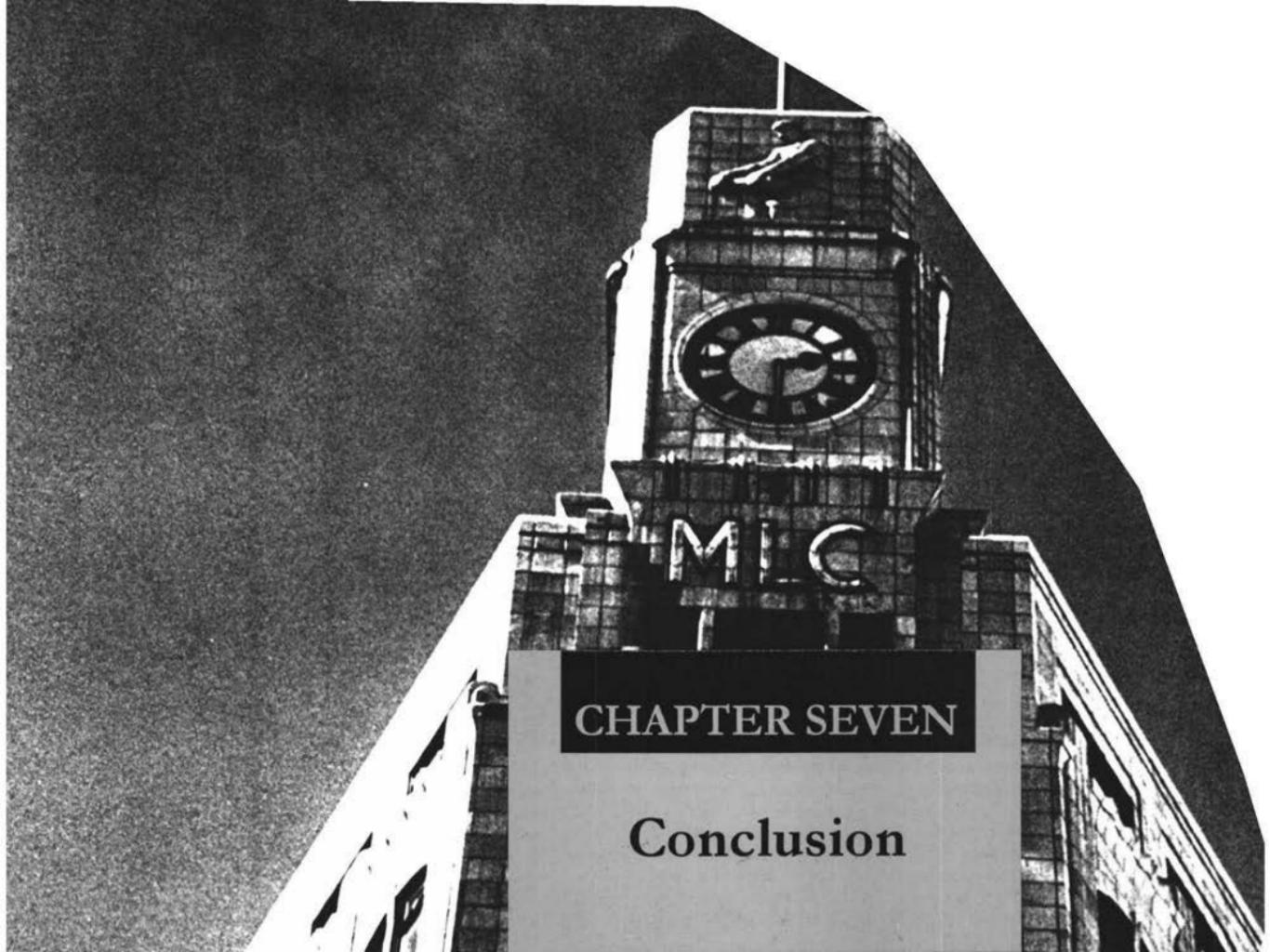
CHAPTER SEVEN

Conclusion

Conclusion

This chapter presents the conclusions from the overall research in three parts. First, the research aim and objectives are reviewed to assess whether they have been achieved. This is followed by a discussion on the effectiveness of the research methodology to achieve the objectives. Second, a synopsis of the research findings is presented with a discussion of the key points. The discussion leads into the third part of the chapter which makes recommendations for heritage asset management planning and suggestions for future research.

Research aim and objectives

The aim of this dissertation was to select and adapt a method which could translate heritage management policy into conservation action to achieve sustainable management of the heritage resource. The asset management plan was selected as a potential methodology for adaptation to heritage management. Six objectives were developed to meet the research aim.

The purpose of objective one was to review heritage management to identify the key problems contributing to the loss of heritage places in New Zealand. The lack of a comprehensive process for managing heritage places resulting in failure to turn heritage policy into action was identified in Chapter Two. Asset management was appraised and compared with heritage management policy and processes as a potential solution to achieve the second objective in Chapter Three. The comparisons confirmed there were adequate similarities between the processes to make adaptation viable.

To address the third objective, three heritage asset management plans were investigated and compared with the conventional asset management plan to reveal where the main

features and differences occurred. The points of divergence showed where modifications were required. Service levels, lifecycle management and resource allocation were identified and in Chapter Five, modifications and principles to guide heritage asset management plans were developed. This achieved the fourth objective. An expert review determined whether the proposed principles for heritage asset management plan were feasible and capable of implementation. The expert review of the modifications and principles for heritage asset management plans enabled both the fifth and sixth objectives to be met.

The research methodology designed to achieve the aims and objectives of the dissertation has been effective. As a result of limited information on heritage asset management, the research methodology was designed to build a body of knowledge drawing from heritage management practice (case studies) and asset management theory. This provided the foundations for comparison and analyses of the different management approaches to establish parameters to guide each stage of the research.

A key feature of the research methodology was the opportunity to develop a series of modifications and principles to guide heritage asset management planning. The expert review was very effective at evaluating the proposed modifications, recommending improvements, and confirming that the heritage asset management plan is a worthwhile approach. Comments by reviewers were valuable for substantiating the potential of the heritage asset management plan for implementation.

The limitation of the research methodology is the lack of method and capacity to evaluate whether the heritage asset management plan will achieve sustainable management of the heritage resource. This is because the heritage asset management plan has yet to be tested and evaluated over an extended time period in New Zealand.

Research findings

-The dissertation research spans heritage management and asset management as the basis for developing new theory on heritage asset management planning. The research findings and proposals are outlined in three parts.

First, a wide range of problems have plagued heritage management in New Zealand and have been a factor in the failure to protect heritage places. Enactment of the proposed amendments to the Resource Management Act will mean greater heritage responsibilities for local government to prevent the loss of the resource. An integrated and structured approach would improve heritage management and benefit agencies with heritage responsibilities.

Second, the appraisal of asset management shows the approach has been adopted by the majority of regional councils and territorial authorities. Adaptation of the asset management plan to heritage is proposed because many agencies are familiar with the framework, the plan can be integrated within wider planning processes, and follows a comprehensive and systematic process. Agencies have already begun to adapt the asset management plan to meet heritage objectives. Modifications to the conventional asset management plan produced a series of heritage specific principles to guide heritage asset management planning.

Third, the heritage asset management plan is likely to succeed if it is pragmatic, meets legislative requirements and community expectations. An appraisal of the proposed heritage asset management principles by planners, asset and heritage management experts ensured they are feasible and capable of implementation. They also considered the heritage asset management plan a worthwhile approach for improving heritage management in New Zealand.

The heritage asset management plan is capable of implementing heritage policy objectives aimed at protecting our heritage places. Significant establishment costs and capacity building will be required within both agencies and the community to achieve effective heritage asset management. This method is not an instant solution but offers a new regime for heritage management designed to prevent further loss of the heritage resource.

The principles were designed in conjunction with the *New Zealand Infrastructure Asset Management Manual* which provides an industry standard and is widely used to guide plan preparation and implementation. If adopted by heritage managers, the proposed

principles could contribute to achieving consistency between heritage asset management plans and also other types of asset management plans. Establishing a consistent methodology for heritage management is important in an environment which has been dominated by ad hoc approaches.

In conclusion, it is proposed that the heritage asset management plan could provide an integrated, structured and long-term strategy for heritage management in New Zealand. Whether the plan can contribute to the sustainable management of the heritage resource will be realised in the future.

Recommendations and suggestions for future research

Evidence from the expert review suggests the heritage asset management plan should have a role in improving heritage management in New Zealand. For this reason it is recommended that the research findings be conveyed to heritage managers and agencies with heritage responsibilities through articles in professional publications and journals. (copies of the dissertation may be given to the New Zealand Historic Places and Ministry of Culture and Heritage libraries). It is also recommended that the New Zealand Asset Management Steering Group include a section on heritage asset management when the *New Zealand Infrastructure Asset Management Manual* is revised.

A logical next step would be the preparation and trial of a heritage asset management plan by an agency with both heritage place and community responsibilities such as a territorial authority. This would test whether the proposed modifications and principles are appropriate and guide further refinements. It may also resolve issues surrounding implementation such as how to incorporate heritage places in private-ownership and manage competing demands of economic markets with community expectations.

Evaluating the effectiveness of the heritage asset management plan will rely on an improvement in the condition of heritage places, community satisfaction, proposed legislative amendments and ultimately, a reduction in the loss of heritage places. It will be for future generations to judge whether sustainable management of New Zealand's heritage resource was achieved by a new regime in heritage management.
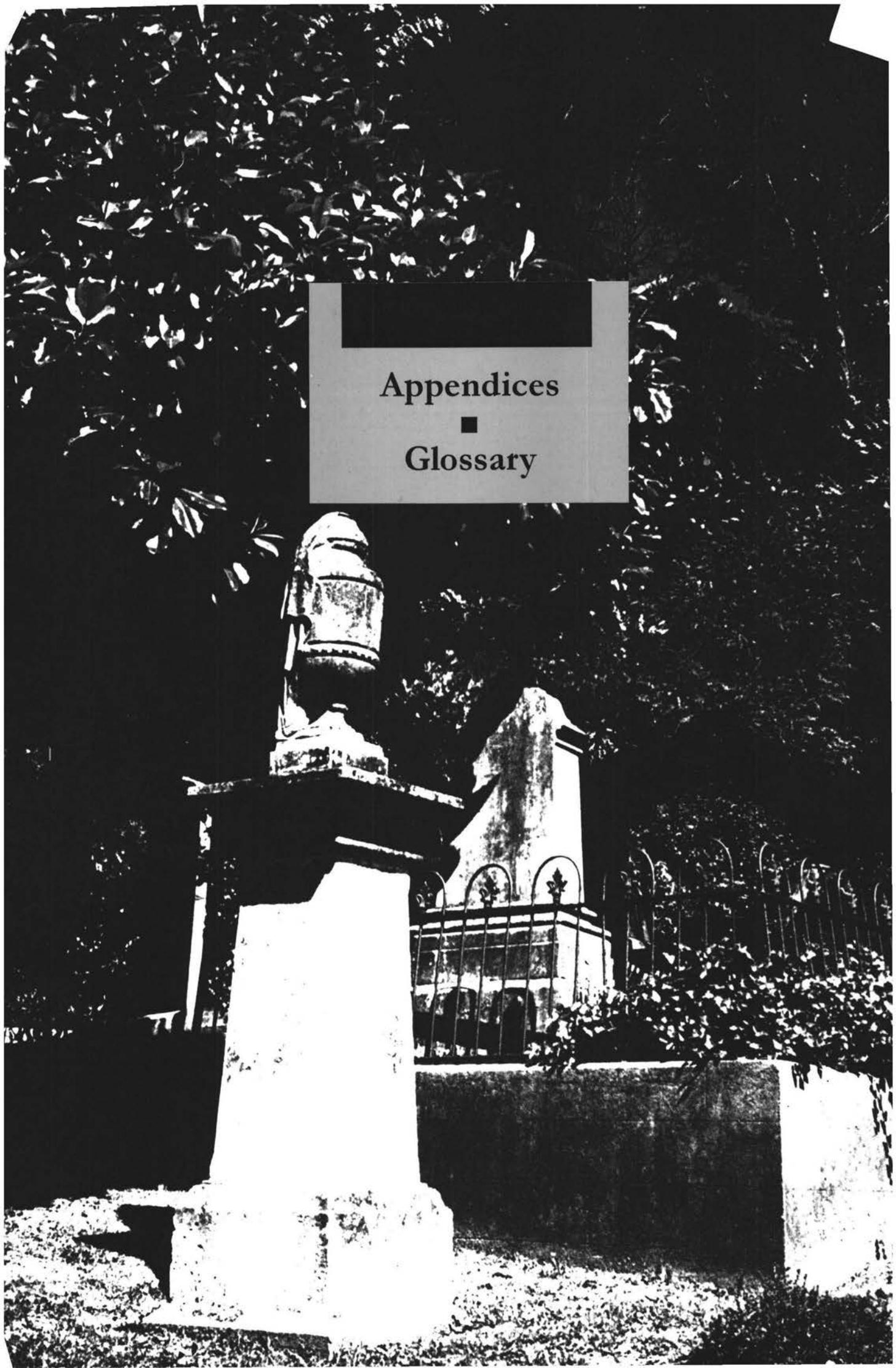
Appendices
■
Glossary

Appendix 1: New Zealand Historic Places Trust Categories

The table summarises building 'types', category value and allocation (percentage) of Trust Registered properties, as well as types of threats.

Heritage building type	List of types	Percentage of NZHPT Register		Type of threat
Public, civic or Crown buildings	Town halls, schools, hospital buildings, prisons, council chambers, railway stations, university buildings.	Category I Category II	32% 19%	Railway stations and post offices have been sold into private ownership so functions have changed and buildings demolished.
Religious buildings	Churches, cathedrals, convents, church-owned rest homes	Category I Category II	18% 12%	High maintenance and earthquake strengthening costs are threatening viability of religious buildings. Falling and changing needs of congregations are making some churches redundant.
Commercial buildings	Office buildings, warehouses, factories, banks, shops, theatres.	Category I Category II	20% 21%	High risk category because most buildings are located in CBD and often are not returning a productive returns. Maintenance and adaptive re-use costs are high. Alternative development often results in demolition of the building.
Residential buildings	Houses.	Category I Category II	21% 37%	Threats are in-fill housing, and subdivision which increase land values so heritage building is uneconomic use. Maintenance costs can be high. Adaptive re-use may be destructive to heritage values.
Agricultural buildings	Woolsheds, stables, seed stores, barns.	Category I Category II	4% 6%	Buildings may no longer be functional and adaptive re-use would compromise heritage values. They are costly to maintain.
Miscellaneous buildings and monuments	Statues, war memorials, gates, walls, lamp stands, band rotundas etc.	Category I Category II	5% 5%	Require maintenance.

Adapted from Nahkies 1998:12

Appendix 2: Legislative protection mechanisms for heritage

Act	Administering agency	Legislation
Conservation Act 1987	Department of Conservation	Establishes the Historic Places Act and New Zealand Historic Places Trust Administration of the Historic Places Act, providing policy advice to the Minister, responsible for land and other natural and historic resources held under the Act, advocacy and promotion of the benefits of conservation and historic resources.
Historic Places Act 1993	New Zealand Historic Places Trust	Section 5: requirements for heritage orders. Section 6-8: Placement of heritage covenants with owners. Section 9-19: Applications to destroy, damage or modify archaeological sites. Sections 22-37: Registration of historic places/areas, waahi tapu/areas; Includes section 34: NZHPT must supply territorial authorities with heritage and covenant register ; Section 58: conservation plans for NZHPT properties. Section 105: penalty provisions
Resource Management Act 1991	Ministry for the Environment, Regional councils and territorial authorities	The objectives and rules of the RMA are achieved through regional and district plans. Section 6: Heritage identification and protection at discretion of local authorities; Section 7: Heritage protection mandate; Section 8: Treaty of Waitangi obligations; Section 30: Functions of regional councils Section 32: Decisions based on consistent and authoritative information (heritage inventories) about historic and cultural heritage values. Section 35: requires local authorities to gather information and monitor. Section 61: Regional policy statements (Historic Places Register obligations). Sections 66 or 74 : Historic Places Register obligations when preparing a regional or district plan. Section 85: compensation for private property owners; Section 93(1)(c): A resource consent application must be served on the NZHPT for any land subject to a heritage order or requirement, or is otherwise identified in the plan as having heritage value; or that is registered under the HPA. Section 104:Resource consent decisions; Section 108: financial contributions – can be used for

		heritage purposes; Section 187-198: Heritage orders; Allocates heritage protection authority status to NZHPT and local authorities. Sections 221 & 224: subdivision to protect historic place (eg archaeological site);
Te Ture Whenua Maori (Maori Land Act) 1993	Maori Land Count, Te Puni Kokiri	Section 338-340: Sets aside Maori reservations for the use and benefit of New Zealanders.
Antiquities Act 1975		Protection of antiquities
Building Act 1991	Territorial authorities	Section 27: requires local authority to keep records and inform the NZHPT of heritage matters in each case. Earthquake strengthening requirements.
Local Government Act 1989	Regional councils and territorial authorities	Annual plans must incorporate objectives which may include heritage initiatives. Section 601A(4): authorises councils to make grants and loans to owners of heritage properties. Also allows councils to buy heritage properties in the community interest.
Rating Powers Act 1988	Territorial authorities	Sections 4-7, 174, 179,180G-J: Rating options specific to heritage protection

PCE1996 & NZHPT 1997

Appendix 3: Proposed Amendments to the Resource Management Act relevant to heritage protection

1. Part I: Inclusion of new definitions –

   'historic heritage' defined as 'means those natural and physical resources that possess architectural, cultural, historic, scientific, or technological importance together with any associated contents and surroundings; and includes historic sites, structures, places and areas, historic gardens, archaeological sites, and sites of significance to Maori'.

   'Archaeological site' means any place (including a place under water) that is, or may be, through investigation by archaeological methods, able to provide evidence of historic heritage or where archaeological methods are the primary or a significant means of obtaining such information:".

2. Part II: Amendment to the Purpose and Principles
   Matters of national importance—Section 6 of the principal Act is amended by adding the following paragraph:
   "(f)The protection of historic heritage of special value to people and communities."

3. The statutory protection of archaeological sites under the Historic Places Act 1993 is integrated into the Resource Management Act 1991.

(Ministry for the Environment 1999)

Appendix 4: Financial incentives for heritage protection

Financial incentives provide the most powerful mechanism for market intervention. This can include rates relief, grants, loans, information and advice, taxation relief and heritage building acquisition. Table 4 outlines the benefits and disadvantages of these mechanisms alongside the recommendations of the Historic Heritage Management Review Report of the Ministerial Advisory Committee and an indication of the level of use or intended use by councils. Financial incentives are needed to achieve a balance between private property and the public good. Because present legislation cannot force private heritage owners to invest in their properties, a balance between statutory protection and economic incentives is likely to achieve the best results (Nahkies 1998:2).

At present over 50 percent of territorial authorities offer or intend offering a form of rates relief to private heritage owners (NZHPT 1997:5). Other types of relief are rates remission, postponement and rates holidays. Rates relief or discounts have been seen as indirect costs to council because the revenue 'lost' from heritage property is obtained from the general rate pool (NZHPT 1997:5).

Nearly 40 percent of territorial authorities provide or intend providing grants and loans to owners of heritage properties (NZHPT 1997:7). Some councils have developed policies while others assess applicants on an ad hoc basis through the annual plan process. Loans are often used for commercial ventures relating to adaptive re-use of heritage properties. Loan conditions are more favourable than usual lending institutions because they offer low interest rates, flexible repayments, potential conversion to a grant and for marginal projects (NZHPT 1997:7). A number of councils also act as loan guarantees. Many councils are establishing specific heritage funds and eligibility criteria. The Lottery Grants Board Environment and Heritage Committee provide grants to charitable organisations.

Financial incentives used for heritage protection in New Zealand (Survey of 68 district and 12 regional councils) (Nahkies 1998, DoC 1998a & NZHPT 1997)

	Benefits	Disadvantages	DoC Historic Heritage Review Recommendation (1998)	Percentage of councils using/propose using incentive
Rates relief	Can take a number of forms including full remission, discounts, postponement, rates holiday. RMA allows local authorities to use this mechanism.	Amount of rates relief is related to market property value and does not take heritage value into account. At the discretion of each council.	District Plan listed or registered heritage properties be subject to rates relief at variable discounts according to level of significance, not just covenanted heritage properties.	54 percent
Grants	Fiscally transparent and may be targeted to specific types of owners of properties to produce specific outcomes.	Can be rationed to meet budget constraints by limiting amounts granted – could end up as tokenism. Grants may require matching contributions by applicants.	Establish a national fund of grant aid programme for conservation of heritage of national significance on private land.	34 percent
Loans	Often used in conjunction with grants system. Loans can facilitate conservation work that is unattractive to normal lenders.	Loans may have conditions attached such as a requirement for a share of resale proceeds.	Develop more loan assistance programmes.	12 percent
Waived or reduced resource consent fees.	Fees are reduced or waived only when heritage values are safeguarded.	No disadvantages.	Waived or reduced resource consent fees and financial contributions to be encouraged.	42 percent
Acquisition of heritage buildings	Guarantees protection of threatened buildings/places for public good.	Rarely used – too costly for many local authorities to consider. Involves finding new uses for the heritage building/place with ongoing management costs.	Local authorities purchase properties if required by heritage orders or s.84 – not a favoured option.	3 percent
Revolving Funds	Guaranteed way of saving threatened heritage through purchase and restoration of deteriorating heritage buildings. Council on-sells with protective covenants to retrieve money- financially sustaining.	Needs a substantial initial injection of capital to get fund established	Individual councils are responsible for adopting this mechanism.	6 percent

	Benefits	Disadvantages	DoC Historic Heritage Review Recommendation (1998)	Percentage of councils using/propose using incentive
Transferable development rights	Provides a form of compensation to heritage owners because they can sell the unused plot ratio/height from that site to another property owner.	TDR's are effective only when there is an imbalance between the scale of heritage buildings, permitted levels of development in the area and market demand for floor space.	Promote the use of tradable/ transferable development rights.	6 percent
Other: eg Subdivision dispensations Relaxed parking requirements	Innovative use of financial incentives to ensure a better fit between regulator and regulated.	No disadvantages.	RMA encourages flexibility and innovative use of financial incentives	50 percent

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Appendix 6: Heritage Asset Management Case Studies

Case Study One: New South Wales Government Heritage Asset Management

Definition of heritage assets

The New South Wales Government (NSW Government) considers heritage assets an integral part of communities, evidence of cultural origins, an indicator of progress, and as the historical foundation of decision making for the community's future (NSWG 1996:5). A range of heritage assets are identified and include landscapes, world heritage parks, places, precincts, streets, engineering structures, buildings, building interiors, relics, objects, shipwrecks and archaeological sites.

Objective

The NSW Government heritage asset management plan has several objectives. These are:

- to conserve heritage assets for present and future generations;
- to maintain viable and living uses for heritage assets;
- to identify, assess and develop long-term management strategies for heritage assets;
- to maintain standards and conditions of conservation; and
- to conserve heritage by agreement rather than compulsion (NSWG 1996:6).

The objectives allow considerable flexibility to encourage agencies to customise asset management plans.

Roles and responsibilities

The NSW Government's heritage asset management plan is implemented by state and local government agencies. The plan is supported by the Heritage Council of New South Wales.

State government agencies have a responsibility to identify and record the heritage value of assets under their control. They have a stewardship role and are expected to actively manage heritage assets within their portfolios (NSWG 1996:10). The NSW Government has a philosophy of encouraging heritage conservation by managing it's own heritage assets in an exemplary and sustainable manner (NSWG 1996:6).

Local government is required to identify and manage heritage assets which are of significance in the areas under their administration (not necessarily in their ownership). They administer the conservation of heritage assets as part of the environmental impact process. This is through Local Environment Plans which identify conservation areas and heritage places, stipulate controls for specific zones, and provide detailed design guidance to heritage owners. (NSWG 1996:12). Some local authorities have structured programmes that provide protection for heritage assets and use incentives to encourage voluntary participation in the programme. Communities are encouraged to take an active role in maintaining and supporting heritage assets (NSWG 1996:13). This partnership approach is most effective when communities and agencies work jointly to identify and conserve local heritage assets.

Process for plan preparation

A comprehensive process is followed by every agency preparing a heritage asset management plan (Figure 4.1). The heritage asset management process is designed to be implemented in conjunction with the *Total Asset Management Manual* (1992) and the NWS Government's *Capital Project Procurement Manual* (NSWG 1996:7).

Figure 4.1 The New South Wales Government process for plan preparation
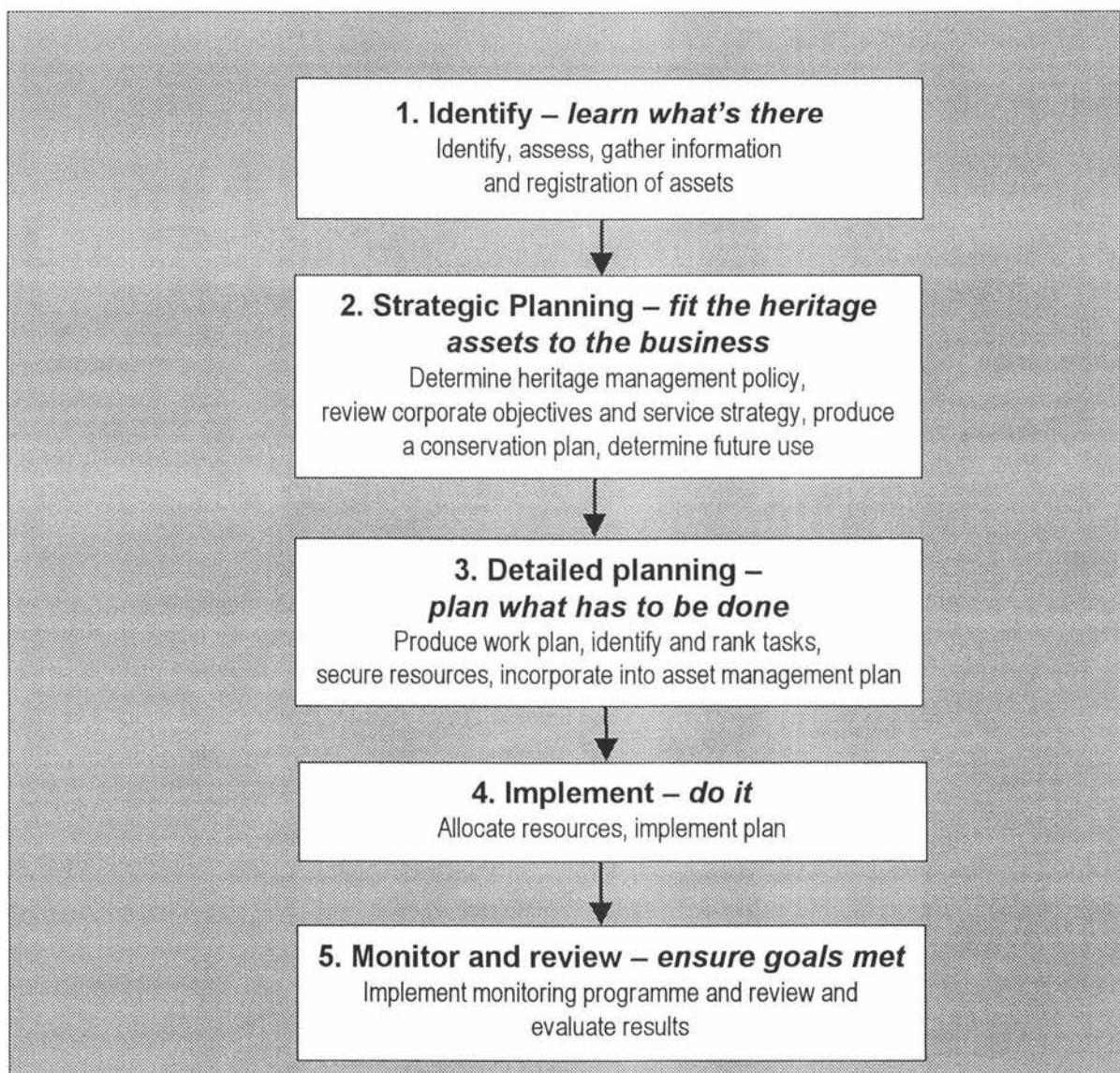
(Source: NSWG 1996:15)

Identification and Assessment

Agencies are required to survey and identify assets with heritage significance in their portfolios and communities. This involves public consultation, gathering information about the area (history, architectural characteristics, development patterns, topography etc.) where heritage places are located to provide a comprehensive understanding of the context and significance of the place.

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Collection and collation of detailed accurate information to understand a heritage place is essential at the earliest stage of planning (Warr and Rice 1996:11). This is because all future decisions relating to the heritage asset management plan will be based on what is known about the heritage place. The asset management plan process can only begin once there is a good understanding of the heritage place. Figure 4.2 outlines the analysis necessary for a comprehensive understanding of a heritage asset.

Figure 4.2 Analyses and surveys required to understand heritage places
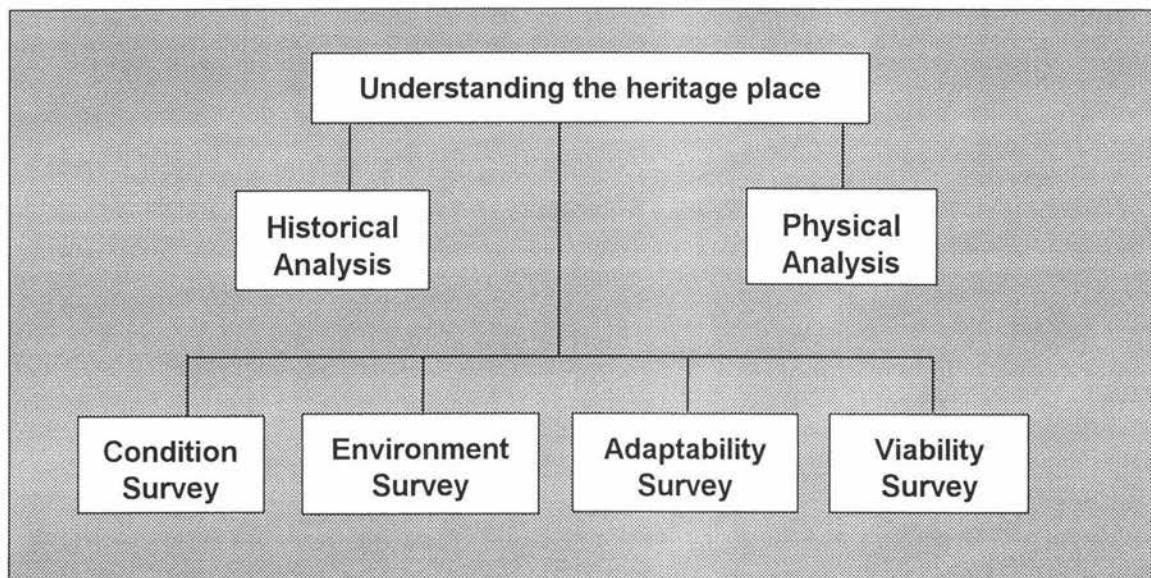
(Source: Warr and Rice 1996:11)

Understanding a heritage place is multidimensional and requires many factors to be considered before an asset management plan can be developed. The historical and physical analyses determine the asset's heritage significance, and a series of surveys establish condition, environment, adaptability and viability of the asset Annex 1 (Warr and Rice 1996:11). The criteria for establishing the nature of heritage significance are historic, aesthetic, technical, social, scientific, and a special values category. The criterion for determining the degree of significance are rare (uncommon or exceptional) or representative (typical or characteristic) (NSWG 1996:31). Collectively the analyses and surveys provide comprehensive information for evaluating heritage places and are used to justify the asset's continued existence and function as well as determine lifecycle costs, and appropriate service levels as part of the heritage asset management process. Annex 2 is an example of typical information record for inclusion in the State Heritage Inventory Program database.

Conservation plans are developed for each asset to document heritage significance, specify maintenance, and make recommendations for future use and management (NSWG 1996:19). Options for adapting the asset to a new use may need to be investigated to achieve uses compatible with heritage requirements (NSWG 1996:23). Conservation plans are regularly reviewed and updated as all remedial and maintenance work is documented.

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The heritage asset is placed on the respective agency's register and incorporated into their asset management programme (NSWG 1996:17).

Service levels

The New South Wales Government considers the best way to conserve heritage assets are to maintain them at a level that keeps them in use. Heritage values are given priority over service delivery levels associated with continued use of the asset (NSWG 1996:8). They recognise the need for special conservation expertise and appropriate resource allocation to maintain heritage assets at levels that enable service (accommodation and other uses) to be delivered to commercial clients.

Matching the right use with each heritage asset is essential for setting and achieving service levels. Factors such as the visual setting, form and scale of the property, as well as arranging for continuous protective care of the asset need to be considered (NSWG 1996:8). Preparation of maintenance guidelines and an annual maintenance programme is required for each heritage place (NSWG 1996:23). Asset maintenance plans ensure heritage properties receive detailed inspections, frequent maintenance, specialist advice, and appropriate funding. Different levels of maintenance will be determined by heritage significance, use, age and climatic conditions.

Lifecycle management

The New South Wales Government calculates the lifecycle of most heritage assets on the term of viable and living use to an agency or community (NSWG 1996:19). Agencies are advised that planning and funding for heritage assets may span periods of up to 50 years or more so it is necessary to plan for higher maintenance costs to keep the assets in use (NSWG 1996:24). Investment in heritage assets often (but not exclusively) corresponds with the degree of usefulness and usually aims to perpetuate the life of the asset indefinitely. The lifecycle process facilitates long-term strategic planning so service levels, use and investment can be integrated to ensure the life of the heritage asset is properly managed. Contractual obligations with heritage asset users may be required to ensure that heritage significance is respected and managed appropriately.

Where a heritage asset must be adapted to a new use to ensure its conservation, the aim is to find a use that meets the service requirements (of an agency or owner) and also conserves the intrinsic heritage values (NSWG 1996:20). An assessment of 'fitness for purpose', assessment of benefits to the agency and the public, consideration of options for future use and specialist planning expertise are all taken into account to determine the future of the heritage place. The NSW Government recommends that agencies establish methodologies such as value management, economic appraisal and risk management to determine whether a new use would be appropriate.

Resource allocation

The goal for the heritage asset management plan is to ensure assets remain productive at the lowest possible long-term cost while retaining heritage values. As noted, lifecycle management for heritage assets may span periods of up to 50 years or more so high quality detailed information is needed to generate accurate forecasts (NSWG 1996:24). Five and ten-year plans are prepared where more substantial capital investment is required

and when there may be significant impacts on productive capacity of the heritage asset. (NSWG 1996:23).

Heritage buildings in continual use need regular maintenance to achieve a constant standard and reduce the likelihood of major costs. Costs associated with maintaining a heritage building can be offset against the benefits gained from the use of the asset. In this way, the net cost can be identified in an agency's financial reporting system (NSWG 1996:9). Periodic upgrading may be necessary from time to time but the NSW Government does not consider this should be funded unless specific heritage requirements must be met.

Funding is secured by the asset's controlling agency from a range of sources (government, rates and other sources). The costs for maintaining heritage values of a building are evaluated against the cost of a new building (NSWG 1996:9). Because funding is often limited, long-term planning is required to spread the costs as funding becomes available (NSWG 1996:24). New South Wales Government agencies meet the normal maintenance costs of heritage assets from their annual budgets but may apply for additional funding for a specific heritage asset.

The NSW Government approach to financial valuation is in the context of promoting the use of heritage assets. For this reason, the costs of adaptive re-use or remedial work and operation for a heritage asset is calculated against the costs of constructing and operating a new building. The Government uses a system which includes an economic appraisal, risk analysis and value management (evaluates whether the heritage values can be maintained with appropriate use) to provide a financial value of the heritage asset and Capital Investment Plans. These plans estimate the capital investment required, identify and document long and short-term capital investment requirements in relation to service delivery, identify funding options, identify the most cost effective solutions and incorporate these in the agency's strategic plan (NSWG 1996:22). This information may be used for funding applications and decision making where significant investment is required to ensure the viability of the heritage asset.

The NSW Government wants agencies to recognise heritage property as an "asset" and not just a maintenance liability (NSWG 1996:22). It is the Government's commitment to the sustainable use of its heritage assets which has necessitated the asset management approach.

Monitoring, review and evaluation

Asset performance measures are developed to assess service levels. For instance, the quality of conservation work, the extent to which functional requirements are achieved and the success of integrating old and new elements within heritage places can all be measured against target service levels (NSWG 1996:21). Agencies monitor and review the use, effectiveness and efficiency of the heritage assets and the implementation of asset management plans. The monitoring system alerts an agency to any activity or use that could damage the heritage values of an asset (NSWG 1996:26). This is because changes to a heritage asset's use, location, design, setting, materials, workmanship, feeling or association may diminish its integrity (NSWG 1996:26). To manage and prevent heritage values being compromised, a risk management plan is sometimes prepared.

Monitoring heritage asset management plans is an integral part of the agency's overall asset management strategy. Monitoring is systematic and used to build knowledge of heritage protection practices. NSW Government agencies are required to ensure assets are appropriate to the corporate needs of the agency, identify under-performing assets, ascertain reasons for performance deficiencies and determine what action should be taken to remedy unfavourable situations. Actual performance is compared against anticipated performance in asset management evaluation. The purpose of plan evaluation is to guide future decision making based on both good and bad asset management outcomes (NSWG 1996:26).

Case Study Two: Wellington Regional Council
Regional Parks and Natural Forestry Asset Management Plan

Definition of heritage assets
The WRC defines heritage assets as 'a collective term for the places and events that define and sustain the cultural character of any society or components of that society" (WRC Vol 5:4 1999).

Objectives
The objectives of the Regional Parks and Natural Forestry Asset Management Plan are:

- to ensure regional parks and natural forests are managed to provide the desired level of service in the most cost effective manner for existing and future customers;
- to improve information in order to recognise, promote and manage the significant values or features of parks and resources in a sustainable manner (WRC Vol 2 1999);
- to match the level of service provided by the asset with community expectations.
- ensure sound stewardship of heritage assets (WRC Vol 1 1999).

Roles and responsibilities
One of the Wellington Regional Council's roles as asset manager is to manage the regional park network and Council lands to provide outdoor recreation opportunities for the community. It is also responsible for protecting the productive capacity of the land and promoting sustainable land management practices. The asset management plan is intended to improve the Council's stewardship of assets. Councillors must approve the plan and funding applications associated with implementation of the plan (WRC Vol 1:4 1999).

The statutory requirements for managing the heritage assets within the regional parks are contained in the Historic Places Act 1993, Resource Management Act 1991, Reserves Act 1977 and the Building Act 1991.

Process for plan preparation
The WRC have developed their asset management plan in stages. The first stage involved gathering information on the assets to design plans and make decisions. The second stage comprised detailed assessments and the third stage aims to make further refinements to plans. The process is summarised in Figure 4.3.

To simplify implementation, assets are grouped into types (eg heritage building/structure, significant tree, shipwreck) and asset management information is entered onto Asset Standard documents (Annex 3). The Asset Standards include an overview of the asset type, assessment and monitoring actions to be carried out, protection and stewardship responsibilities, modes of failure and risk, and inspection, maintenance and condition grading standards (WRC Vol 5:13 1999).

Identification and assessment
A comprehensive asset register has been developed using a hierarchical classification system. The register is pivotal to the asset management plan and complements financial,

Figure 4.3 Wellington Regional Council process for plan preparation

Stage 1
Identification
- Status report listing existing assets and current levels of service

Strategic Planning
- Analysis of future demand
- Develop lifecycle plans for each major asset (park)
- Determine future use
- Prepare financial summary (forecasts and funding strategies)
- Asset management improvement programme overview

Stage 2
Detailed Planning
- Improve knowledge of assets
- Prepare accurate financial projections
- Develop signature values, asset hierarchy, and classification system
- Assess condition and risks
- Establish service levels, standards and condition grading for asset types.

Stage 3
Refine Plan
- Produce work plan, identify and rank tasks
- Compete database and links to GIS
- Refine plan (costings, service levels,etc)
- Undertake valuation and depreciation work

Implement and Monitor
Implement plan, review and evaluate

operational and maintenance systems. It is divided into functional areas – recreation, management, environment and heritage. The asset hierarchy comprises park or forest, zone (similar terrain or land use), management area (smaller scale than zones with uniform character or purpose), features or structures (individual assets) (WRC Vol 2:7 1999).

The 'signature values' of a park are based on the best qualities or most significant assets within the area which collectively define the park character. The signatures guide management directions and establish priorities for maintenance, restoration and upgrading (Clelland, pers. comm., 1999). The signature process can be applied to existing areas and also used to select new areas. Signatures do not substitute for detailed assessments but enable comparative distinctions to be made between areas and parks (WRC Vol 2:4 1999).

Heritage sites and features are identified in the Regional Policy Statement, the New Zealand Historic Places Trust Register, NZ Archaeological Association Site Index and heritage schedules in District Plans (WRC Vol 2:5 1999). The themes of tangata whenua cultural heritage, archaeological sites, and architectural heritage are used to group items.

If there is no need to change the use or modify the heritage asset, an initial assessment of heritage values, condition and threats is carried out with interim protection, maintenance and repairs (Bowman 1999:5). Standard profiles are developed to manage heritage assets according to type. Where more detail is required for a particular heritage asset a conservation plan is prepared. This includes an assessment of heritage values, condition report, inventory of the heritage fabric and how it should be conserved (WRC Vol 5:9 1999). The criteria for assessing heritage values are:

- numbers of heritage features
- age, rarity, representativenesss
- information, educational and scientific value
- cultural, associative or group values (WRC Vol 2:5 1999).

Information on the location, measurements and attributes of every asset is described on a database (WRC Vol 2:10 1999). Field surveys are used to determine the dimensions, condition and location of assets. Computer generated maps enable every asset to be identified in its setting and at different scales (Clelland, pers. comm., 1999). Information is also collected on an asset's performance, risks, and lifecycle. A condition grading document outlines information on a heritage place, design, potential threats and mitigation of threats (Annex 4).

Service levels

'Service levels' describe the location, quantity and quality of an asset (WRC Vol 5:3 1999). The objective is to match the level of service provided by the asset with the expectations of the community. A number of other factors are considered in setting service levels for heritage assets including signature values and corporate goals. A priority for heritage asset service levels is retaining heritage values and maintaining the condition to a set standard.

Asset service levels for heritage assets may be determined by statutory requirements (protection of heritage values), budgets, customer and community expectation,

performance criteria, corporate goals and trends (WRC Vol 2:16 1999). Service levels are designed to respond to a series of performance issues (WRC Vol 1:8 1999). These are:

1. Determining whether the quality and condition of asset is appropriate to its purpose including risk analysis.
2. Availability/accessibility of the asset for whom it is intended/ interested.
3. Utilisation of the asset in terms of quantity and appropriateness.
4. Determine whether the asset can be efficiently maintained in a sustainable manner.
5. Ensure the asset can meet safety and legal requirements and commitments of the Regional Council.

'Standards' for service levels give more detail on the quality to be maintained and how each asset type is structured, maintained and monitored (WRC Vol 5:3 1999). Maintenance standards are defined in documents specifying levels of service, performance criteria, work techniques and reporting requirements.

Lifecycle management

WRC has developed lifecycle strategies and work programmes to cover conservation, heritage asset operation and maintenance (ongoing routine activity to maintain service levels), asset replacement (restores asset to original or specified condition), asset development (creation of new assets or improve asset beyond its existing condition), and asset disposal (decommissioning). Conservation methods are consistent with ICOMOS principles (WRC Vol 7:6 1999).

Lifecycle management aims to provide appropriate maintenance to extend the life of the heritage asset for as long as possible. Preventative cyclical maintenance is carried out for all heritage assets from daily housekeeping to at least 20-yearly maintenance cycles (WRC Vol 1:10 1999). However, where the condition of a heritage asset is very poor or near failure, repairs will be carried out only where more than half the original fabric exists. Where less than half the fabric exists the structure will be recorded and removed (unless the structure is a designated ruin or has archaeological values) (WRC Vol 1:10 1999).

Resource allocation

Forecasts have been prepared for all asset types so comparisons can be made with current and projected budgets over the next ten years. The WRC claims high data confidence for its forecasts due to comprehensive asset knowledge, clear service levels, and reliable costing procedures (developed over a number of years) (WRC Vol 2:18 1999). The forecasts are used in the Long Term Financial Strategy.

Zero-based costings have been developed for assets based on maintaining current service levels. This means the nature and frequency of work is consistent with maintenance strategies and reflect the age, condition, performance and risk profiles of assets (WRC Vol 6:17 1999). Further refinement of the financial analysis is planned including asset classification, service levels, valuation and depreciation. A maintenance financial forecast and cost sheet to cover a ten year period is prepared for every asset (WRC Vol 2:11 1999).

Monitoring and evaluation

Performance indicators have been developed to measure heritage policy and management performance (Forbes 1999:31). An example is the heritage performance indicators recommended for archaeological sites:

- numbers of recorded sites (against work within a specific area)
- numbers of archaeological authorities issued (indicates compliance and awareness of heritage legislation and values)
- settlement patterns (indicates land changes eg harbour infilling)
- predictive models for percentages of sites (comparison of similar areas)
- kaitiaki Maori response to resource access (measurements of distance travelled for food resources etc. can be a measure of heritage loss) (Forbes 1999:31) .

Each asset is assessed for criticality and performance (WRC Vol 2:14 1999). Critical assets are monitored and maintained proactively to a.higher condition standard to ensure that performance is reliable. This applies to assets such as bridges or lookouts (safety), major tracks (high use) or heritage structures (heritage values). The performance of an asset is measured in terms of reliability, availability, utilisation, safety, aesthetics, customer satisfaction and compliance with standards and regulations (WRC Vol 2:14 1999).

Monitoring will test the effectiveness of the maintenance programme, enable improvement and confirm whether objectives are being met (Forbes 1999:32). Forbes recommends WRC use case study sampling to test the appropriateness of heritage decisions.

Case Study Three: Department of Conservation Historic Heritage Asset Management System

Definition of heritage assets

The definition of heritage assets used by the Department of Conservation is derived from the Historic Places Act 1993. It includes 'any land (including an archaeological site), building or structure that forms part of the historical and cultural heritage of New Zealand' (DoC 1995:12). The heritage resource is valued for the knowledge it holds about early settlement patterns and changing attitudes to land uses (mining, forestry, food gathering) and the natural environment (DoC 1995:1).

Objectives

The Department of Conservation has developed an integrated three-tier approach to manage its heritage resource. The Historic Heritage Asset Management System objectives are:

- to maximise the heritage values of heritage assets;
- to maximise the use and income without compromising the heritage values of heritage assets;
- to minimise the costs associated with heritage assets through effective maintenance programmes (to avoid deferred maintenance costs);
- to integrate information from the Historic Resource Strategies to develop a national structure (and database) to manage and protect the heritage resource in a sustainable manner;
- to forecast and obtain the funding required to maintain the heritage resource at an acceptable standard.

Roles and responsibilities

Heritage places on land administered by Department of Conservation are managed in co-operation with the community. Places of significance to Maori are managed according to Maori tikanga in partnership with tangata whenua. Under section 6 of the Conservation Act 1987, the Department manages all historic resources on the land it administers for conservation purposes as well as advocating conservation of historic resources generally (DoC 1995:9).

Process for plan preparation

The process followed for the asset management plan is still being developed. It has three distinct phases – data collection, evaluation, and implementation. The data collection phase relies on building knowledge of assets. Conservation plans have been completed for approximately a third of the heritage assets with information on the remainder from the *Register of Actively Managed Historic Places.* Conservation plans identify heritage values, significant fabric, assess risks and threats, policies for conservation and use, condition inspection and provide management condition options for significant heritage assets. A 'use appraisal' may provide overall guidance on options for public and business use. The key components of the appraisal are core property data, adaptive re-use options, visitor facilities and interpretation.

Paul Mahoney explains the objective of the asset management plan during the evaluation phase is to forecast the costs of remedial and maintenance work, and demonstrate the necessity for heritage investment (Mahoney, pers. comm., 1999). Once funding has been allocated a work programme will be developed. The heritage asset management process will be followed by each of the conservancies and be integrated through a national database. Figure 4.4 provides a synopsis of the plan preparation process.

Figure 4.4 The Department of Conservation process for plan preparation

Defining documents	Core work activity	Scoping work
Data Standards	**Data collection phase:** Maintain Asset Register — Identify, gather information, and register assets	Asset Inventory
ICOMOS Conservation Plan / Use Appraisal and /or business case	**Evaluation phase:** Set service standard — Assess values, condition, risks, and prepare conservation plans. Funding secured. Develop conservation policies, visitor management strategies and determine future use.	Process yet to be defined
Remedial Work Specification / Maintenance Work Specification	**Implementation phase:** Remedial work (repair and adaptation) — Work specified, resources allocated, prioritise tasks, implement remedial work plan. Maintenance programme (maintain and monitor) — Work specified, resources allocated.	Condition Inspection / Ongoing Inspection

(Source: Mahoney 1999)

Identification and assessment

Conservancies have prepared comprehensive area histories of heritage assets and land areas to build knowledge of the diverse conservation estate (DoC 1996:13). Existing information on historic resources was supplemented by recent information from archaeological surveys and historical research carried out progressively on DoC land. The significance value criteria is derived from the Historic Places Act registration criteria (MacReady, pers. comm., 1999).

Assessments are nationally consistent and provide for community participation. Final registration decisions are made by the New Zealand Historic Places Trust (DoC 1996:21). Once registration is completed, physical assessments identify public safety issues, condition of heritage fabric and threats (vandalism, climatic etc) to guide remedial work and maintenance programmes (DoC 1996:68). Annex 5 shows an example of the *Auckland Conservancy Historic Places Register*. Each heritage site in the *Historic Places Register* includes the name and date of the site or structure as well as a detailed description and assessment.

Service Levels

A 'vision' or desired state determines the service level to be achieved for each heritage asset over a ten year period. Factors which influence the vision are the ability to find compatible sustainable uses, the optimum conservation outcome, tangata whenua interests, resource allocation, ability to meet community and service expectations and specific political directives (Mahoney, pers. comm., 1999). Visions are developed through an informal workshop process drawing on the knowledge of staff associated with management of the heritage assets.

There are three vision/service level categories. These are:

1. Fully utilised asset: the asset receives the highest level of remedial work so it can comply with building, health, safety and building legislation. Regular maintenance ensures the standard is retained. Decisions to invest in heritage assets to meet these standards are made on potential income generation. An example of this is Government Buildings in Wellington, currently leased to the Victoria University Law School.

2. Museum asset: this category has significant public interest and the primary goal is to retain its heritage values. This means the asset does not have to comply with modern infrastructure requirements because it is not required to deliver services beyond its original intent. The category receives a lower level of investment but remedial and maintenance levels ensure access, safety and heritage values are retained. An example of this category is Nairn Street Cottage in Wellington which is visited by people wanting to see a house representing colonial domestic life. An entry fee may be charged at these sites.

3. Landmark asset (protected status): these are assets with significant heritage values which contribute to the cultural landscape. The objective of this category is to keep the asset in sound condition. Examples of this are lighthouses and Central Otago stone cottage ruins (Mahoney, pers. comm., 1999).

Most service level decisions are made on a case-by-case basis. The assessment of heritage values (social/historical, traditional/cultural, archaeological, technological, aesthetic, architectural, rarity) and the degree of threat guides priority setting for active management of heritage places (DoC 1996:20). The vision/level of service will vary considerably according to the use of the heritage asset.

Lifecycle management

Lifecycle plans are developed according to whether the heritage asset requires passive or active management to deliver the desired vision/service level. The designated status guides resource allocation, maintenance and monitoring processes. The designations are:

1. Protected status – the heritage asset is maintained to prevent harmful human actions but accepts natural environmental decay. Approximately 90 percent of DoC's heritage assets fall into this category. The category accepts a level of continual evolution and change.

2. Conserved status – the heritage asset is maintained to minimise deterioration caused by human and environmental conditions. Approximately 10 percent of DoC's heritage assets fall into this category and are on the Register of Actively Managed Historic Places. Service levels for this category have been set according to the condition of the heritage asset, income generation potential, location and visitor numbers/interest. There is a hierarchy of service standards within this category.

Conservation plans are integrated within the asset management process. ICOMOS standards guide all conservation work. Retaining the original fabric and the patina of age is an important part of conserving the Department's heritage assets. Remedial work and maintenance specifications give detailed instruction on the conservation work required to ensure heritage values are respected. Where replacement of the original fabric is necessary, replacement materials are selected so they will degrade in the same manner over time (Mahoney, pers. comm., 1999). Although perpetuity is the goal for most of the Department's heritage assets, there is acceptance that some assets are still evolving and others will have a finite lifecycle.

Resource allocation

Forecasting and resource allocation methods are used for funding applications to Treasury and to direct the Department's resources (labour, knowledge, etc). Forecasting relies on information from conservancies through the Heritage Resource Strategy and staff experience with heritage assets. DoC is currently in the initial stage of estimating the costs for initial remedial work requiring capital funding to bring assets up to the desired vision/service level. The second stage is forecasting the costs and resources to meet ongoing maintenance and operation requirements according to asset lifecycle terms (Mahoney, pers. comm., 1999).

The financial value of heritage assets may be required to support funding applications where significant investment is needed for an asset to be fully utilised. It may be necessary to use cost-benefit analysis, replacement costs, contingent valuation or other financial methods to support funding applications to Treasury. An example of a heritage asset which received significant government funding was the conservation of Government

Buildings. Conservation of the Buildings enabled the asset to be returned to profitable use by the Victoria University Law School for a thirty year term.

Monitoring and evaluation

Formal monitoring procedures are being developed for the national Historic Heritage Asset Management Plan and are already provided for in the *Actively Managed Historic Places* plan. The performance indicators and measures developed for the heritage asset management plan are outlined in Annex 6. They are designed to cover the whole asset management process including staff performance, cost efficiencies and heritage loss. Performance indicators and measures may be further refined as the heritage asset management plan is finalised.

Annex 1 : Surveys required to determine asset heritage significance, condition, environment, adaptability and viability

- **Historical analysis** is carried out during the registration or scheduling process when heritage significance is determined from a range of values (historical, cultural, architectural, scientific).

- **Physical analysis** requires a site examination by a conservation architect or similarly qualified expert to identify the components and context of the structure or site.

- **Condition survey** – this is an assessment of the heritage asset's structure and condition to determine what is required to ensure the life of the asset can be managed sustainably. This process establishes a timeframe for managing the asset by estimating the life span of the asset, balancing capital costs and maintenance costs against life expectancy. The condition survey will also determine the amount of backlog maintenance required and the cyclic maintenance programme to ensure the asset is maintained to appropriate standards (Warr & Rice 1996:11).

- **Environment survey** – Assessing the heritage asset's micro-environment and the value of the asset in terms of energy requirements means it can be evaluated against the energy intensive costs of building and maintaining a new building. 'A heritage building can be analysed in terms of operational energy and resources, construction and maintenance energy and resources; inputs and outputs (heat, waste, water); interactions and relationships (eg community); lifecycle; embodied energy (materials, resources, humans and other energy inputs); use of materials (durability, efficiency); availability of materials and trades; the passive capability of building fabric to even out fluctuations in temperature and relative humidity; design and construction features (noise, heat, insulation, ventilation, lighting) and reusability and replacement (Warr & Rice 1996:12).

- **Adaptability survey** – The value of the heritage asset can be influenced by its adaptability to future change. it can be assessed in terms of its daily use (hours per day); adaptability of space/rooms (large simple spaces or complex layout); size and mix of spaces; openings and access; circulation and communication routes; the potential to introduce modern services; fit to needs, loose fit, limitations of fit (Warr & Rice 1996:12). Any new use should impose the minimal degree of change to ensure the long-term adaptability of the place. A new use should be selected to maximise the existing capabilities.

- **Viability survey** – The heritage asset should be evaluated according to its long-term viability in the broader social and physical environment (Warr & Rice 1996:12). This is determined by examining 'how the asset embodies the ongoing culture (cultural continuity); mapping the place in the built and social environment (in relation to other built resources, community facilities and needs, transport, economic base, access etc); how it uses established support networks that may help sustain a place and provide energy to keep it going (maximising existing support networks and encouraging community ownership and attitudes); establishing viable long-term use to attract funding; establishing viable long-term use to prevent vandalism and lower maintenance costs (Warr & Rice 1996:12).

Annex 2: Information record for New South Wales Government State Heritage Inventory

The format shown in the accompanying figure gives the range of information that would normally be included in a record submitted to the Heritage Council for inclusion in the State Heritage Inventory Program (S.H.I.P.) database.

Property name	LONG BAY INDUSTRIAL CORRECTIONAL CENTRE - GATEHOUSE	Heritage No. 063001
Previous name	ENTRANCE BLOCK	Asset No. 063001
Address	Anzac Parade Malabar NSW 2036	

Client region Eastern
Local Govt RAND Randwick
Electorate MARU Maroubra
Current use Gatehouse
Previous use Entrance block

SHI category Building/s

SHI sub-cat Gaol

SHI theme Law and order

Architectural style Federation Gothic

Architects		from	to
Government Architects Branch		1899	

Builder/Artisan		from	to
.		1901	1905

Element	Materials	Condition
Roof	Slate	
Walls	Sandstone and brickwork	

Evaluation criteria

	Rare	Associative	Representative
Historic	State		
Aesthetic			State
Social		State	State
Scientific			
Other			

Heritage listings

AHC		NPWS		NT	
HC		OD		RAIA	
DOP		PW		IE	
LC	LEP 102	other			

DP Plan No
Site area
Current zoning 5(a) Special Uses
Legal owner Dept of Corrective Services
Map reference

Information sources "Long Bay Complex Conservation plan" 1995, Heritage Group, NSW Dept of Public Works and Services

DEPARTMENT
Division

History
The Entrance Block is an integral part of the former Reformatory for Women designed by the Government Architect. W Vernon in 1899. It is one of the earliest buildings constructed on the Long Bay site and was built between 1901-1905 by day labour under the control of the Public Works Department. As the public face and frontispiece of the scheme, the Entrance Block was given the most architectural emphasis. The drawings for the Entrance Block bears the signature of George Oakeshott, Chief Draftsman in Vernon's office, who had been responsible for post office design from 1891 and later held high office in the Public Service.
Prisoners arrived inside the archway in a prison tram and were received and processed in the series of rooms on the left hand side of the entrance arch. Rooms on the right hand side of the entrance arch were for the prison officers and visitors. The remainder of the building on the right hand side appeared to have a separate entry, and contained a Mess Room, Kitchen and WC with sleeping accommodation for officers upstairs consisting of a Dormitory, four 'Cubicles' and a common Bathroom. Accessibility to the first floor rooms was via open balconies. These had lead floors and stone arches with ocean views towards the south west. The balconies were enclosed c1914.

Description and Construction
The Entrance Block is architecturally the most impressive building on the site. The two-storey symmetrical building is of contrasting brick and rock-faced stone construction, designed in the idiom of a medieval castle gatehouse, in the Federation Gothic style with touches of Art Nouveau especially at roof level. The construction is of high quality. The roof is of slate, lead and copper, with careful detailing such as the tapering diagonal buttresses, the carved Royal Arms, recessed arches over the entrance and the portcullis-style ironwork gate of which parts still remain. Inside the entrance arch is a coffered ceiling of diagonal timber boarding with cross beams and radiused braces supported on corbel stones. Internally, the layout has been somewhat altered. The left wing of the Entrance Block is used for staff amenities, the right wing houses general office and tactical armoury store on the ground floor and administration offices on the upper floor. Much of the original joinery and finishes are intact. The front elevation has a new doorway and a timber latticed shelter for visitors. The walls facing the cell wings have ferns growing in the brickwork and disfigurement due to surface-fixed services and ad hoc security measures. There is evidence of the original iron grille and internal gates which had been removed and replaced by a larger version.

Significance
The Entrance Block is of considerable significance. It is an integral part of the former Reformatory for Women. It is an impressive entrance to the Reformatory and, due to its siting and architectural qualities, is one of the major landmarks of the Long Bay complex visible from a wide surrounding area. It is a substantially intact and important example of the design work of the Government Architect's Branch under Walter Vernon. It is associated with the way prisoners were admitted and discharged, and demonstrates the type of accommodation provided for officers at Long Bay then. It demonstrates the skills and workmanship of the day labour of the time. All original fabric, detailing, joinery, metalwork, are of considerable significance.

Recommended Conservation Strategy
Refer to Conservation Plan 1995 prior to planning or undertaking any proposed works. Continue its usage as the main interface between the prison and the outside world. Adaptive reuse is possible provided that damage to the original fabric is minimised and the exterior fabric is retained. Carry out maintenance and repair works as recommended in the Conservation Plan. Retain any remains of tram tracks that may still be under the paving beneath the arch. When planning any new development, ensure that views of the facade from the surrounding area are not obstructed. The original complex and accompanying plantings should remain the dominant feature in the landscape.

Annex 3: Wellington Regional Council Asset Standards (Draft)

	Heritage building/structure - 061
Overview	

Historic buildings, structures, monuments, memorials, markers etc. post 1900. They may not be recognised under the Historic Places Act but are historically significant or interesting. An example would be the WWII bunkers at Belmont Regional Park.

Assessment and Monitoring	
Resource survey and data management	GIS database of sites. Original plans (buildings, bridges, etc), Literature and historic records
Monitoring of condition	Specified for each site
Monitoring of threats	Specified for each site
General	

Protection and stewardship	
Protection, restoration	Restoration of degraded or damaged sites to appropriate condition
Fire	Fire Protection Plan. Fire extinguishers and alarms in all buildings
Pests	Treatment for borer beetles in old timbers
People	Rules for visitor access and use if necessary.
Legal status	Ensure use and management is consistent with status under the HPA

Modes of failure and risk	
Amenity Safety Environment Heritage Legal / contractual Financial Corporate policy	Inadequate maintenance can result in deterioration of structures or loss of amenity value for visitors. All sites can have particular needs based on the values being protected and interpreted. Poor maintenance reflects poorly on the organisation. Deferred maintenance can lead to more expensive remedial work at a later date. Vandalism, and damage from fire are potential risks at some sites.

Inspection and maintenance	
inspection schedule	Refer maintenance
inspection procedures	Refer maintenance
maintenance schedule	Specified for each site
maintenance standards	Specified for each site

Condition Grading Standards		
Grade	*Condition*	*General Meaning*
0	Non-existent	No longer in existence
1	Excellent	Sound physical condition. *No repairs required*
2	Good	Minor areas of failure to non-structural elements. *Repairs required within five years to reinstate excellent condition*
3	Average	Moderate areas of failure to non-structural elements, minor deterioration of structure. *Repair or strengthening required within 2 years to reinstate to excellent condition*
4	Poor	Extensive areas of failure to non-structural elements, moderate failure of structure. *Repair or strengthening required within three months to avoid failure*
5	Very Poor	Failure of structure or imminent failure. *Repair or strengthening required immediately. Repairs are possible where more than half of original fabric exists. Where less than half of fabric exists, the structure should be recorded and removed (unless acceptable as a ruin, or already a ruin).*

Annex 4: Wellington Regional Council condition grading standards

Sample document: Heritage lighthouses

6.0   ASSET CONDITION GRADING STANDARDS

HERITAGE SITES AND STRUCTURES – LIGHTHOUSES – 061

Overview
Lighthouses registered by the New Zealand Historic Places Trust are either category I or II. Category I buildings are *"Places of special or outstanding historical or cultural heritage significance or value"*, while category II buildings are *"Places of historical or cultural heritage significance or value"*.

*"By preserving light stations, we preserve for everyone a symbol of that chapter in ... [New Zealand] history when maritime traffic was the lifeblood of the nation, tying isolated coastal towns and headlands through trade to distant ports. Historic and cultural resources represent our patrimony."*1

The framework for conservation of such buildings is the ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value. Conservation processes in the Charter are: non-intervention; maintenance; stabilisation; repair; restoration; reconstruction; adaptation; and interpretation. The selection of appropriate conservation levels is based on: retention of authenticity; retention of heritage values; minimum and reversible interventions; and complete documentation

Information available on structure

Condition assessment	a report detailing the physical condition of the structure and fabric, especially necessary prior to writing a maintenance plan, in which repairs are identified and given priorities.
Conservation plan	a two-stage methodology based on J Kerr's The Conservation Plan
NZHPT Field Record form	the NZHPT prepare a field record form on each building registered with them
Heritage inventory	a separate document or part of a conservation plan which lists heritage fabric and assesses heritage values
Local authority inventory record	some local authorities have prepared inventories of heritage buildings listed in the district plan which summarises heritage values

Design

Components	Framed and clad structure, external walkway, openings, glazed lights
Construction type	Wooden tower, Masonry tower, Wave-swept tower, Concrete tower, Cast iron plate tower, Skeletal tower, Straight pile, Screw pile, Crib, Caisson
Dimensions	Varies
Materials	Masonry, steel, bronze framed glazing, glass, timber, render, plaster

Potential threats

Design	inappropriate initial design or subsequent additions

Inadequate records	inadequate information or the loss of such information may prejudice knowledgeable interventions
Misinformed or unskilled conservation	can result in damage and the loss of heritage fabric
Natural and man-made disasters	fire, earthquake, flood, landslide and tsunami can result in the damage or complete loss of heritage fabric
No use	where a structure is empty, it is prone to vandalism and other damage which a resident user would be aware of and take measures to repair or advise those who may be able to repair
Physical deterioration	rusting of steelwork and/or reinforcing, undermining of foundations, salt damage to masonry, abrasion from wind and sand, insect attack, maintaining damp and abrasion from vegetation, microbiological decay, coating wear, rodent attack and droppings, bird attack and droppings, sealant deterioration, mortar deterioration, deterioration of services, inadequate ventilation, freezing, pollution, vibration, settlement of foundations
Regulatory requirements	can result in incompatible modifications for Building Act or other requirements
Visitor impacts	excessive numbers of visitors can degrade the heritage fabric as well as the surrounding area

Mitigation of threats

Disaster preparedness	central storage and supply of tarpaulins, acrow props, building materials
Fire and intruder protection	install appropriate alarms and fire suppression systems
Inspections	minimum yearly and following every major climatic event and natural disaster
Maintenance schedule	Basic maintenance includes washing 6 monthly, exterior painting 5-8 yearly, interior painting 10 yearly, oiling of hinges yearly, borer fumigation 20 yearly, reputtying windows 20 yearly, cleaning out gutters, 3 monthly, vegetation control 6 monthly, biocide application 5 yearly, repointing 50 yearly
Maintenance standards	The standard for the major architectural elements is the US National Park Service Cyclical Maintenance for Historic Buildings, J Henry Chambers, 1976. The standard for movable cultural property should be the National Trust, The National Trust Manual of Housekeeping, by Hermione Sandwith and Sheila Stainton.
Maintenance	preventative cyclical maintenance to be carried out for all fabric and setting from daily housekeeping level to at least 20 yearly maintenance.
Records	keeping of adequate records on all conservation works including new research as it comes to light
Regulatory requirements	identify potential conflicts and attempt to resolve conflicts with minimum loss of heritage value
Repair process	completion of repairs specified by conservator according to condition assessment priorities and carried out by appropriately qualified crafts people
Visitor management	record visitor movements with respect to condition and control visitors where problems arise

Annex 5: Example of Auckland Conservancy Historic Places Register

AUCKLAND CONSERVANCY: HISTORIC PLACES REGISTER

NAME: Bach # 14, Rangitoto Wharf

Record Updated: 29 March 1996

Photo taken November 1992 R. Brassey

Scale 1:50 000

Source NZMS 260 R11

AUCKLAND CONSERVANCY: HISTORIC PLACES REGISTER

NAME: Bach # 14, Rangitoto Wharf   BUILT: c 1933

Record Updated: 8 October 1996

1 Description

Themes: REC   *Location:* NZMS 260 R11 2676000 6486400
Land Status: Scenic reserve R11/009   *Controlling Authority:* DOC

Present Management Status:

NZAA Site Record: No   *Registered by HPT:* No
Specified in CMP: N/A   *Conservation Plan:* No
ARC CHI/RCP No: None   *District Plan:* No

Present Use & Facilities: Visitor use of reserve very high. Bach lessee deceased, informal lease by family until 1996.

Integrity: Little apparent change   *Condition:* Average

Physical Description: Narrow bach developed from original gabled shed. Lean-to & verandah built at front, lean-to at rear. Verandah enclosed by solid balustrade, has supports salvaged from a bungalow. Heavy canvas blinds roll up under roof. Construction generally adaptive & improvised. Colour: cream/brown & white trim.

History: Occupiers 1937: McQuarrie & Sullivan. 1955, 57 Arthur John Sullivan, deceased 1986. Informal occupancy until 1999 granted to spouse (Mrs Sullivan).

2 Assessment

Physical/Architectural Significance: As part of complex of baches and community facilities established between c1920 - 37. The verandah is unmodified & demonstrates the typical 1930s condition when open verandahs faced the sea, functioning as outside rooms. Solid balustrade precludes any interpretation of the space as an entry porch. Verandah & double doors at rear indicate a desired connection with the outside. This bach also demonstrates the additive lean-to tradition first seen in colonial cottages & early villas.

Historic Significance: Collectively as a component of the c1920 - 37 bach settlements. Individually significant because it has always remained in the family of the original owner/builder.

Site Quality: Situated in forest margin looking out into the Korea Channel. Immediate site is utilitarian. Outbuildings include toilet, shed, smokehouse & boatshed (check).

Future Use: To be investigated. ?Lease to community group.

Future Management: 1. Make decision about which buildings are to be retained (18.5.1)
                                2. Minimize deterioration of historic fabric (18.5.3)
                                3. Conserve associated vegetation survivals (18.5.7)
                                4. Prepare & implement generic conservation plan (18.5.3)
                                5. Consider interpretation (44.1.2, 5)

Threats: Vandalism, lack of exterior maintenance, inappropriate modification

Annex 6: Performance indicators and measures for the Department of Conservation Heritage Asset Management System

Performance Indicator	Measure
High proportion of heritage places are maintained	Percentage and number of heritage places are maintained: trends
High proportion of heritage places are repaired	Percentage and number of heritage places are repaired: trends
Low level of heritage places are damaged, modified or destroyed	Percentage and number of heritage places damaged, modified or destroyed
High proportion of conservation plans are completed on time and updated on time	Percentage and number of conservation plans completed on time and updated on time
Research is conducted in high priority areas and linked to practice	Qualitative evaluation using case studies
High proportion of staff complete heritage protection training	Percentage and number of who complete heritage protection training: trends
High client satisfaction	Qualitative evaluation of client satisfaction using interviews and focus groups
Appropriate procedures are followed when spending dollars	Favourable results of audit
Good balance of expenditure on repairs and maintenance	Ratio and dollar value of expenditure on repairs and maintenance: trends

(Draft) Mahoney 1999

Appendix 7: Summary of methodology for determining the remaining economic life of assets

Methodology	Calculation	Example of an infrastructure asset (25 year old water utility) calculation
1. Estimate taxation life of asset	Based on IRD's estimated useful asset life	45 years (from IRD taxation list)
2. Identify baselife of asset	Benchmark taxation life against asset lives determined by other organisations.	40 years
3. Prepare scaling factor to allow for asset age.	Calculate the age of the asset. Economic life from age alone: Baselife x age factor	44 years
4. Prepare scaling factor to allow for asset use/utilisation.	Economic life from utilisation alone: Baselife x utilisation factor	50.6 years (utilised 30% of original capacity expectation)
5. Identify remaining life.	Combine baselife with age and use factors. Baselife x age x utilisation	25.6 years
6. Prepare scaling factor to allow for asset condition.	Takes into consideration the structural integrity of the asset using a grading scale. Baselife x age x utilisation x condition	If condition is graded 4 (poor) on a scale of 1-5, remaining life is estimated at 14 years.
7. Prepare scaling factor to allow for asset performance.	Takes into consideration the performance (change in use, compliance and risk analysis) of the asset. Baselife x age x utilisation x performance	If performance is graded 4 (poor) on a scale of 1-5, remaining life is estimated at 5 years.
8. Identify remaining life with impacts of predictive factors.	Baselife x age x utilisation x condition x performance	5 years
9. Remaining economic life	Age – remaining life =	20 years

NZIAMM 1996:4.37

Appendix 8: Information sent to expert reviewers (Chapter Five with integrated questionnaires)
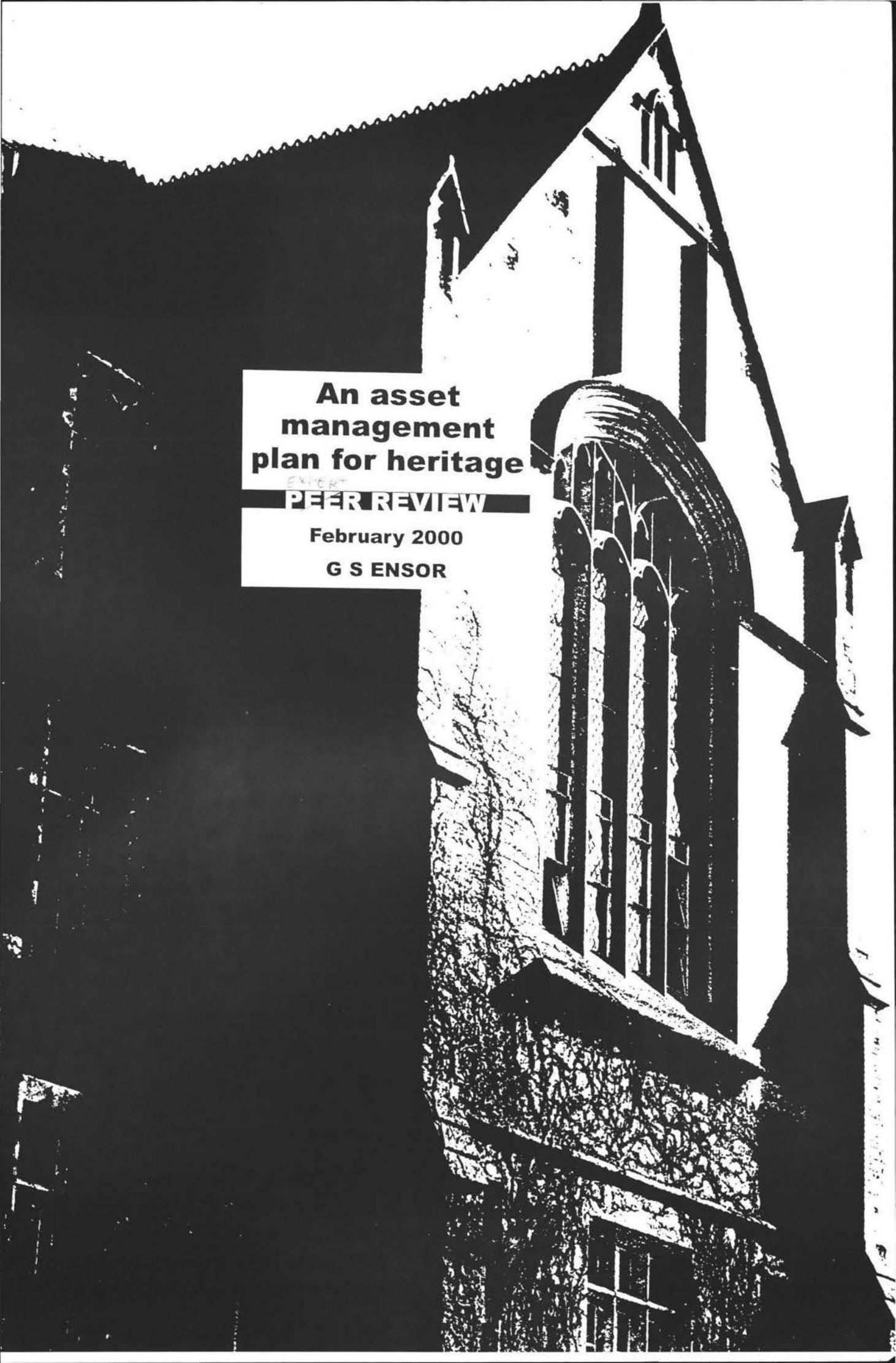
An asset management plan for heritage

EXPERT

PEER REVIEW

February 2000

G S ENSOR

Chapter Five

An asset management plan for heritage

Note to the reviewer

The purpose of the peer review is to gain responses on various aspects of the research. The questions are integrated within the text and are designed to:
- *obtain your views on heritage place management and whether the asset management plan is a worthwhile approach to heritage management (Question Box 1);*
- *to collect specific comments on the viability, strengths, weaknesses, and possible improvements to each of the areas investigated (Question Boxes 2, 3, and 4); and*
- *establish whether you consider the modified asset management plan for heritage management (or parts of the plan) capable of implementation (Question Box 5).*

An outline of the Dissertation and summary of the case studies in Chapter Four are included in Appendix 1.

Many councils and agencies in New Zealand use the asset management plan for managing infrastructure assets so there is the potential for the methodology to be applied to heritage asset management. With the capability and skills in place, the challenge will be adapting the plan to deliver good heritage management. Ultimately, the asset management plan may contribute to better recognition of the value, role and requirements of heritage assets, particularly in financial resource allocation and long-term management. These are the foundations of sustainable   heritage management.

The objectives of conventional infrastructure asset management are to provide a lifecycle approach, cost effective management, a defined level of service and sustainable use of resources (NZIAMM 1996:1.2). Many of the principles of asset management can be applied to heritage management but there are some fundamental differences. These are:
- The objective of infrastructure asset management plans is optimising service delivery where heritage assets need special consideration of heritage values.
- The demand driven, cost effective bias of infrastructure asset service levels does not recognise the special values of heritage assets.
- Lifecycle management for infrastructure follows a process from creation through to renewal, replacement and disposal – some stages of the process are not relevant to heritage assets.
- Standards and objectives for infrastructure asset maintenance, operations and monitoring are very different for heritage assets.
- Resource allocation methods used for infrastructure asset management plans do not take into consideration the special values of heritage assets.
- Reinterpreting sustainable management objectives to encompass the needs and interests of future generations.

This Chapter comprises three sections based on the primary features of asset management. These are service levels, lifecycle management and resource allocation. The purpose of the Chapter is to develop a set of principles to guide heritage place management using the asset management

framework. The first part of each section looks at the conventional asset management theory derived from *New Zealand Infrastructure Asset Management Manual* and other sources. This is followed by a review of how case studies in Chapter Four interpreted the asset management principles. The theory and practice provide the basis for determining where and how changes need to be made to adapt the plan to heritage management. The proposed modifications and a series of principles for heritage asset management conclude each section.

Question Box 1 General questions on heritage place management and asset management planning *Please write your responses in the separate booklet.*
1.1 What do you think are the main causes of heritage place loss in New Zealand?
1.2 What do you consider are the current problems (if any) with heritage place management in New Zealand?
1.3 Have you used or developed an asset management plan? If you have, please briefly describe the objective of the plan and state whether you consider it a successful approach.
1.4 Do you consider the adaptation of an asset management plan could be a worthwhile approach for heritage management in New Zealand?

Service Levels

Note to reviewers: Levels of service

This section analyses the service level concept applied to infrastructure asset management plans and adapts it to recognise the special features of heritage assets and management.

The purpose of your review of the proposed interpretation of service levels for heritage asset management is:
- *to determine whether you consider the adaptation realistic and applicable in New Zealand; and*
- *to use your evaluation of the strengths and weaknesses to guide further modification and improvement.*

In Box 2 at the end of the section, a series of questions are posed to gather your comments, criticism and ideas.

Service level theory

Service levels for infrastructure asset management are usually activity based and designed to deliver the needs and demands of customers. The *New Zealand Infrastructure Asset Management Manual* explains service levels as:

> "The defined service quality for a particular activity (i.e. roading) or service area (i.e. streetlighting) against which performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental acceptability and cost" (1996:glossary).

Clarifying levels of service is the first stage in the asset management planning process. Service levels are developed from legislative requirements and customer expectations (NZIAMM 1996:2.26).

The standard approach for infrastructure asset management is to base service levels at current levels and regularly review and revise levels to reflect changes in customer demand (NZIAMM 1996:2.26). Customer expectations are derived from what customers want and how they want it delivered. This information is gathered through consultation, surveys and customer feedback. Matching infrastructure capacity and delivery with customer expectations requires a process of scoping, research, analysis and consultation to develop service levels (NZIAMM 1996:4.74). Infrastructure asset management planning focuses on the technical levels and delivery processes of service. An important objective of infrastructure service levels is matching the cost (price/quality) with service expectations to optimise service at the least cost (NZIAMM 1996:26).

Service levels can be developed for individual assets or for groups of similar assets, similar customer expectations or legislative requirements. A comprehensive understanding of the asset, service, economics and customer is essential for developing service levels. The service levels need to be measurable and deliverable. Part of achieving appropriate service levels is ensuring customers are aware of the financial impact of different service level options (NZIAMM 1996:4.82).

Service levels for heritage

Developing service levels for heritage assets is a more complex process than for infrastructure assets. Heritage assets are important components of communities and nations and while there are some obvious tangible benefits or services, there are many intangible qualities which contribute to a sense of place or contain inherent spiritual associations. This means the retention and conservation of heritage assets enable the 'service' (amenity, historical, spiritual benefits, etc) to be realised. The service levels define *how* the service is delivered.

The challenge is developing service levels for heritage assets that recognise the expectations of people and users while managing the resource in a sustainable manner. An example of a service level for a historic lighthouse would be unlimited external access and interpretation for the public while limiting the interior for navigational uses only. Regular supervised open days could enable the public to experience the interior. In this way, the public are able to experience the lighthouse without adverse impact on the function or heritage structure.

Where infrastructure service levels aim to optimise service levels at the least cost, heritage asset service levels aim to optimise service levels (public access and utilisation) without compromising heritage values. Although cost is a factor, it need not predominate service level setting. Service levels for heritage assets may be benchmarked against whether they are achieving the primary objective of sustainable management of heritage assets.

Heritage protection may be the underlying goal of many heritage asset management plans, but 'sustainable management' recognises the needs of future generations and the evolving nature of heritage places which reflect community values. The concept of sustainable management is aligned with the purpose of the Resource Management Act 1991. In the Act, 'sustainable management' is defined as:

> 'managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –
> (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
> (b) Safeguarding the lifecycle-supporting capacity of air, water, soil, and ecosystems; and
> (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.' (Section 5 RMA)

Not all heritage can be protected and sustainable management recognises that many heritage assets are still in a state of evolution. That is, people are still contributing to the cultural value of the asset through its ongoing use. An example of this is an historical alpine hut still in regular use and contributing to alpine sports experiences (Mahoney interview 1999).

Hall and Arthur (1996) examine how to manage the human dimension of heritage management and without divorcing people from their historical and cultural heritage through over-protection. They emphasise the difficulty in balancing heritage protection with the demands of the people visiting or using heritage places. One of the major threats to heritage assets is damage by people whether deliberate or inadvertent. Service levels can be developed to minimise the impact of people on the heritage resource and at the same time maximise the experience for visitors or users.

Heritage is the summation of people's values and perceptions so it is essential that heritage assets are managed in such a manner that people can experience the special values. Appreciation and enjoyment of heritage places by people is the key to heritage protection (Hall and Arthur 1996:6). In many cases, protection of heritage assets is in response to public demand so heritage education and interpretation can be valuable tools. Evidence shows that keeping heritage assets in a viable and appropriate use is the most effective way of protecting them (Brand 1992). Service levels can translate people management issues into achievable goals and actions which will sustain the heritage asset.

There are four areas of heritage interest which reflect the association of different communities or customers with the heritage resource (Hall and Arthur 1996:7). These are:

1. Economic: tourism, recreation, visitor spending, sponsorship, paying users.
2. Social: personal associations, community values and interest, cultural significance, sense of place, religious sites
3. Political: national symbols, heritage ownership, indigenous significance, institutional arrangements
4. Scientific: historical evidence, technological significance, (Hall and Arthur 1996).

Service levels can be developed for heritage assets to recognise the needs of some or all customer interests. The type, location, function and condition of a heritage asset will also be significant determinants in developing service levels. The service levels must take into consideration legislative requirements such as resource consents, building regulations, health and safety legislation and other relevant legislation (NZIAMM 1996:2.28).

Service levels for heritage assets are still in an experimental stage. The case studies in Chapter Four demonstrate different approaches generated from the expectations of the community as well as recognising the needs of those (customers) who use heritage assets.

Case study review

Balancing customer interest and use against protection of the asset can be a difficult task. The case studies in Chapter Four demonstrated different approaches to service levels. The primary goal of each heritage asset management plan was to ensure the sustainable management of the heritage resource. This meant accommodating a level of use ranging from interpretation and visitor experience to full commercial use.

The service levels adapted by the New South Wales Government heritage asset management plan are designed to recognise and balance heritage values with utilisation. Regular monitoring programmes are designed to ensure service levels associated with keeping the heritage asset in a productive capacity did not compromise heritage values (NSWG 1996:21). The service levels for the NSW heritage asset management plan are set initially to meet the requirements of its employees working in heritage buildings. Service levels may also be developed to meet the needs of agency customers and the community who experience heritage assets in a different manner (e.g. as visitors or aesthetic appreciation).

The Wellington Regional Council designed service levels to manage heritage asset condition at a standard that ensures sustainable management of the resource. The service levels are also aimed at

delivering recreational and cultural interest to the regional community and meeting corporate goals. Service levels have been developed on a generic basis for assets with similar characteristics e.g. heritage buildings, marae buildings and wharenui.

The Department of Conservation uses a hierarchical approach to service levels. Different service levels are used according to whether the asset is fully utilised or treated as a 'museum' or 'landmark' asset. The Department also recognises that some of its heritage assets are still evolving and service levels reflect this. They develop service levels on a case-by-case basis.

Proposed modification to service levels for heritage assets

It is proposed that the primary objective of service levels for heritage asset management planning is the sustainable management of heritage assets. In this context 'service' equates to heritage values. This requires a shift of emphasis from the conventional asset management concept of 'service' to a broader context where service can be defined in terms of spiritual, aesthetic, scientific, historic or other less tangible values. Service levels define how the service (heritage value) is delivered – both the tangible and intangible. Heritage assets serve people, communities and nations by providing amenity value, historical continuity and a sense of place. To be effective, service levels need to prioritise heritage protection over customer or user expectations. At a lower priority level, service levels can also be used to set objectives for commercial uses or other purposes where service delivery is a factor. This is a significant departure from infrastructure asset management plans.

Any decisions regarding the use and management of the heritage asset need to be benchmarked against the primary objective to ensure the asset's heritage values are given priority. This means that the life of the heritage asset will be optimised and the needs and expectations of direct users (eg building accommodation) of heritage assets will be secondary to the protection of the asset's heritage values. The purpose of this approach is to enable the use of heritage assets without compromising their value.

Developing service levels for heritage will involve trial and error. The case studies demonstrated three approaches that aimed to achieve sustainable management of heritage assets whether in active or passive use. Ensuring heritage places are protected for future generations is an important aspect of sustainable management. The principle of developing service levels is to prioritise sustainable management of the heritage asset over the use or service delivery to customers. In this way, heritage values are less likely to be compromised in favour of short-term customer/user demand or profit driven decision making. A series of principles have been developed to guide the design and application of service levels for heritage asset management.

Principles for heritage asset service levels

1. The objective for service levels is to achieve sustainable management of heritage assets and recognise the interests of future generations.
2. Sustainable management of heritage assets relies on the interest and support of individuals, communities and nations and service levels need to reflect this.
3. In the context of heritage assets, the 'service' translates to the heritage value it offers people, communities and nations, be it historic, aesthetic, scientific, social or simply contributing to a sense of place.
4. Service levels define how the heritage values are delivered whether it be interpretation, public access, or commercial use.
5. Service levels for heritage assets may be benchmarked to determine whether they are achieving sustainable management of the resource.
6. Protection of heritage values takes precedence over all other factors.
7. Service levels which can maintain active uses for heritage assets are the most effective means of achieving sustainable management.

Question Box 2 Review of heritage service level modifications
Please write your responses in the separate booklet.

2.1 Do you consider that service levels (designed for infrastructure management) need to be adapted to heritage management?

If not why not?

If you agree, do you think the modification appropriate?

Please make any further comments on how the modifications could be improved or suggest alternative approaches?

2.2 What do you consider to be the strengths of the approach to heritage service levels?

2.3 What do you consider to be the weaknesses of the approach to heritage service levels?

2.4 Do you agree with all/some of the 'principles for heritage asset service levels'?

Please state any principles you disagree with, reasons why and suggestions for improvement.

2.5 Please make any further comments on the approach to service levels for heritage.

Lifecycle Management

Lifecycle management theory

The asset management planning process is based on the lifecycle of an asset. This means it is an integrated systematic planning process spanning from asset creation to disposal. The process emphasises effective utilisation and establishes the financial requirements for maintenance and rehabilitation throughout the life of the asset. The lifecycle process begins with asset planning strategies, and is followed by asset creation, accounting and economics, operations and maintenance, condition and performance monitoring, rehabilitation, renewal or replacement, disposal, audit and review (NZIAMM 1996:2.2). The lifecycle process is summarised in Table 5.1.

Lifecycle management is reliant on good quality information to guide decisions and forecast trends. It is important to have a comprehensive understanding of the customers, community, political and economic environments, engineering and other areas of expertise as well as current systems and processes. The asset management process relies on an integrated multidisciplinary approach especially in the initial stages of plan development.

Identifying demand is the first step in asset management planning because this guides decisions on what should be acquired. The need for an asset is identified through a strategic analysis (function and costs of full asset life). This is to ensure the operational, maintenance, disposal and replacement costs are evaluated before acquisition (NZIAMM 1996:2.3). It is also important that financial considerations are balanced against asset utilisation and the ability to meet service delivery requirements.

Table 5.1 summarises the lifecycle asset management plan process (NZIAMM 1996).

Lifecycle Infrastructure Asset Management Process	Actions
Asset planning strategies **Aim:** To meet customer needs in most efficient and effective manner.	Clarify purpose of service, level of service, length of service, evaluated future demand: lifecycle costs; determine adaptability of asset to a new level of service: justify costs for service levels: asset performance predicted: determine probability and consequences of asset failure.
Asset creation /acquisition **Aim:** To satisfy or improve a level of service.	Determine need for new asset/service; evaluate proposed project; clarify objectives, level and length of service; investigate alternative; determine future maintenance, operation costs and monitoring requirements.
Asset accounting and economics **Aim:** To consider all costs and revenues associated with an asset and provide forecasts for input into the funding process.	Determine lifecycle costs; predict risk of asset failure and costs to avoid failure; clarify funding requirements and arrangements for asset; produce an asset valuation.
Asset operations and maintenance **Aim:** To manage the operation and maintenance of assets.	Operations: determine whether asset is operating efficiently and effectively; develop a performance monitoring programme; audit operational practices; monitor asset failure; monitor costs. Maintenance: monitor asset/function fit; set reliability targets; performance recording systems; comparative asset maintenance assessments; audit maintenance levels and procedures.
Asset condition and performance monitoring **Aim:** To identify under performing assets, predict asset failure, and determine corrective action.	Condition assessment: prepare inventory on asset and establish requirements to maintain asset condition at adequate levels (including rehabilitation and replacement). Performance monitoring: determine asset's reliability, service requirements met, health, safety and environmental requirements met; compare current utilisation with capacity.
Asset rehabilitation/renewal **Aim:** To restore the asset to ensure required levels of service can be achieved.	Evaluate cost of rehabilitation versus replacement; determine funding requirements (full lifecycle costs) and options.
Asset disposal/ rationalisation **Aim:** To plan for the disposal of assets.	Identify assets for disposal; determine legal, environmental, social or heritage barriers to disposal: assess the costs for disposal versus alternative uses; audit assets to avoid technological obsolescence.
Asset management audit and review **Aim:** To ensure a continuous asset management improvements cycle, maintain best industry practices and quality standards.	Assess quality of asset management processes, information systems and data, asset management plans and implementation. Audits of asset management plan effectiveness, corporate performance in achieving asset management objectives and benchmarking against Best Practices to ensure continuous improvement cycle is maintained.

Asset economics and accounting is a significant feature of lifecycle planning. Recognition of all costs associated with asset ownership throughout the asset's lifecycle enables future financial commitments to be planned for (NZIAMM 1996:2.3). The majority of decisions affecting lifecycle costs are made at the early planning stage. For this reason it is important to examine options for cost reductions before the asset is created or acquired. The development of cost forecasting capabilities by heritage management authorities is particularly important in this regard.

The effective and efficient operation and maintenance of assets is essential to ensure service levels are met by the asset throughout its lifecycle. This is achieved through condition and performance monitoring. Condition monitoring focuses on the physical aspect of the asset and includes risk management. Performance monitoring evaluates whether the asset is meeting its service level objectives. Asset rehabilitation or renewal is required when the asset is unable to meet its service levels. The decision to rehabilitate or renew an asset will usually be tested against financial and economic criteria to define the point at which funding will or will not be available. The lifecycle process includes regular asset management audits and a review at the end of an asset's life. These can be both internal and independent to facilitate continuous improvement of the asset management plan (including service levels) and maintain best industry practices (NZIAMM 1996:2.11).

Lifecycle management for heritage assets

Evidence from the case studies in Chapter Four suggests the lifecycle approach can be applied to manage heritage assets if a few modifications are made to the conventional infrastructure model. The lifecycle process translates some of the key aspects of the heritage management process presently used in New Zealand (Table 2.3) into a widely recognised management system. Conservation plans can also be successfully integrated into the asset management plan. Lifecycle planning for heritage should minimise risk of asset failure and avoid crisis style management which usually serves heritage very poorly.

Table 2.3 The heritage management process

Process for management of heritage places
1. Location, identification and documentation of heritage places.
2. Assessment of the value or significance of the heritage place to the community or sections of the community
3. Heritage policy is developed. Planning and decision-making, weighing the values of the heritage place with other considerations (context, economic, political etc)
4. Heritage policy is implemented. Includes implementation of decisions for future use and management including conservation, recording and if necessary, disposal.
5. Evaluation

(Pearson and Sullivan 1995:9)

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There are some significant deviations from the infrastructure asset management plan but the lifecycle process offers many advantages for heritage management. Long-term planning ensures better understanding and decision making regarding each stage of the asset's life. One of the most significant features of lifecycle planning is regular maintenance and performance monitoring to enable better planning and prevent deterioration of heritage assets. This addresses one of the key problems of heritage management – how to turn policy into conservation action (Pearson and Sullivan 1995:213).

Case study review

Each of the agencies in the case studies have designed lifecycle plans to enable service levels to be met. Forecasting costs and work is achieved through preliminary planning and followed up by regular monitoring. There is universal recognition that remedial and maintenance work is essential to perpetuate the life and maintain the integrity of heritage assets. ICOMOS principles are recognised as an essential to achieving remedial and maintenance objectives for heritage assets. All the agencies aim to conserve heritage assets in a sustainable manner and have set service levels to reflect the level of use and value.

The New South Wales Government heritage asset management plan focuses on the service levels required to ensure active use to perpetuate the life of heritage assets. In the context of continued asset use, the Government considers regular monitoring investment and maintenance will extend the lifecycle of heritage assets indefinitely. Their approach emphasises finding appropriate uses for heritage assets.

The Wellington Regional Council follows the New Zealand Infrastructure Asset Management Manual lifecycle process. A systematic lifecycle process for heritage assets within the context of the wider park management ensures an integrated approach. Forecasting, monitoring and long-term maintenance planning to extend the life of heritage assets as long as possible are features of the plan.

The Department of Conservation manages two categories of heritage assets – protected and conserved status. Lifecycle management for each category is developed to prevent harmful human actions. They accept a level of natural environmental decay for protected status but minimise environmental deterioration for conserved assets (often in active use). A range of condition and performance measures guide maintenance requirements. There is acceptance that some heritage assets will have a finite lifecycle and service levels are developed to minimise human and environmental impacts as much as possible. Regular monitoring ensures remedial and maintenance work can be carried out on heritage assets to prevent loss.

Proposed modification for heritage asset lifecycle management

The NZ Infrastructure Asset Manual life cycle asset management process has been used as the benchmark to determine if and where changes are required to adapt the asset management plan to meet heritage asset requirements.

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1. Asset planning strategies

The initial stage of the planning process is to determine whether an asset should be created or acquired using a detailed analysis of requirements/needs, service levels, costs, risks and lifecycle estimation at the outset. Whether the heritage asset is acquired or already in ownership, the primary focus of the planning stage will be to identify and assess heritage values, and the most appropriate use (rather than need) for the heritage asset.

Determining a viable use for a heritage asset will depend on a number of factors including the past function of the asset, community and corporate/owner expectations, economics, location, condition, safety and the type of heritage values (e.g. architectural, technological, cultural etc) that must be protected. If the heritage asset must be modified for re-adaptive use, the planning strategy will provide a systematic and integrated assessment process to ensure appropriate decisions are made. This involves preparation of a heritage inventory (first part of a conservation plan), feasibility study, and assess construction and conservation costs, operations and maintenance costs, service levels, and how community and private interests will be managed.

2. Asset investment/acquisition

For a heritage asset there is no actual 'creation' stage in the lifecycle process although this stage could equate to the point at which an agency/owner intervenes to manage the heritage asset/s. There may be no cost associated with the acquisition but considerable investment in rehabilitation may be required. Heritage assets may be acquired privately or publicly, whether voluntarily or as the result of community pressure, bequest or other means. Many councils and public agencies have inherited heritage assets therefore the creation/acquisition stage is best translated into plans for managing the heritage asset from there on. This would include objectives for the asset, determining service levels and more detailed analysis of the issues raised in the planning strategy.

The *New Zealand Infrastructure Asset Management Manual* proposes a value management approach to lifecycle planning which can also be applied to heritage asset management This entails avoiding unnecessary expenditure, questioning assumptions, generating new and innovative ideas, optimising resources (money, time, energy) and simplifying methods and procedures.

3. Asset accounting and economics

There are some significant differences between accounting and economics for infrastructure and heritage assets which require the conventional approach to be modified. The main accounting and economic factors for assets are life costs, risks, funding and valuation.

The approach to lifecycle costs for heritage assets differ from infrastructure assets because heritage usually has a community expectation of an infinite lifecycle. This will mean long term funding strategies aimed at keeping the heritage asset at specific service levels rather than accepting depreciation as part of a process because asset renewal is not an option. Investment in maintenance and rehabilitation will increase as heritage assets become more vulnerable with age. Therefore, cost reduction opportunities associated with infrastructure lifecycle management are unlikely to be appropriate for heritage assets.

Risk management for heritage assets has many similarities to that of infrastructure. The main difference is that planning for failure modes needs to take into consideration that replacement of a heritage asset is not an option.

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Another digression from infrastructure asset management is heritage asset valuation. This is because the valuation must incorporate heritage values and community expectations as well as financial values. Currently, most infrastructure asset valuations are based on the replacement cost of the asset or the ability of the asset to generate earnings. Although replacement valuation has little applicability to heritage, some heritage assets are able to generate income and a valuation may be determined on this basis. Translating heritage values into financial terms may not always be possible but there should be some form of objective recognition to support an financial valuation. An example could be inclusion of additional notes on heritage values with financial statements and plans.

Translating community expectations into investment for heritage assets can be achieved through cost-benefit analysis and more specifically through use of contingent valuation (consultation process). Heritage assets are likely to be best served by evaluating ratepayer/community willingness to pay for investment. Another approach which may arise where developer interests need to be balanced against community interests is the developer willingness to accept compensation. That is, the amount of financial compensation the heritage asset owner is willing to accept in lieu of modifying or destroying the heritage asset. It should be noted that the decisions concerning investment and compensation are influenced by the cultural and political climate of the day and may not necessarily take into account the interests of future generations.

Another approach to asset valuation is depreciation by age. This is inappropriate for heritage assets because it is often the significant age of the asset which gives it its value. This method discriminates against heritage assets because unlike infrastructure, the older heritage assets are, the greater their value (financial and cultural).

With many heritage assets there may be no return on investments so profit performance indicators may need to be replaced with indicators for asset performance (retention of heritage values and where applicable, meeting user expectations), condition, customer satisfaction and consistent long-term achievement of service levels (NZIAMM 1996:1.5).

4. Asset operations and maintenance
The process followed for infrastructure is very similar to heritage. The day-to-day management and maintenance of heritage assets is important to reduce the risk of fabric failure, environmental damage, careless use and vandalism. Service levels need to be appropriate for the heritage asset because a good match between condition and function, will mean operations and maintenance costs will be lower. In many cases any remedial or maintenance work will impact on the original fabric and threaten the integrity of the asset so this needs to be minimised. It is essential that the heritage values are protected and both operations and maintenance plans should detail how this will be achieved.

The principles of operating a heritage asset are effectiveness and efficiency without compromising the heritage values. Efficiency relates to the best use of funds to ensure the viability and use of the heritage asset. The level of utilisation for a heritage asset needs to permit modification of the usage if the activity is shown to be damaging the asset and in particular, its heritage values. A monitoring programme will highlight whether the operations plan is successful (effective and efficient).

Regular monitoring will be able to alert heritage managers to maintenance requirements to keep the heritage asset at a consistent standard and service level. The focus is on prevention rather than cure

so early warning of deterioration is important. Conservation plans can be integrated into maintenance programmes to guide actions for each heritage asset. Maintenance information should be documented with timeframes in conservation plans where possible. Understanding the heritage asset is essential to ensure appropriate maintenance work is carried out.

Conventional infrastructure asset maintenance aims to upgrade, refurbish or replace failing materials to extend the life to continue or improve performance capacity. Maintenance of heritage assets must follow ICOMOS principles which ensure the integrity (age and special heritage characteristics) of the heritage asset are retained. A proposed methodology for conservation treatment/maintenance follows a process of:
1. documentation of problem and proposed changes, remedial or maintenance work
2. analysis of factors causing deterioration
3. diagnosis
4. review of treatment options
5. testing of treatments/approach before application to the heritage asset
6. decision on the best conservation option
7. treatment (including documentation)
8. continuous evaluation, monitoring and maintenance (Pearson and Sullivan 1995:252).

An important aspect of maintenance is the retention of the heritage asset's characteristics which convey time and 'experience'. Heritage assets contain many irregularities which need to be conserved as part of the patina of age and history. This means in many cases, that maintenance methods need to retain the patina of age whether it be rust on corrugated iron or lichen on timber. For this reason heritage buildings should not be made to look like new and maintenance treatments need to be carefully managed so the patina is not destroyed as this could affect the heritage values and sense of age. In many cases specialist conservation architects and craftspeople would be employed for maintenance work because heritage asset fabric is often fragile, non-standard (e.g. cob brick), and requires traditional craft techniques to emulate the original fabric. All work should be recorded so the new work can be identified, modified or removed in future.

5. Condition and performance monitoring
Condition and performance monitoring is one of the principal features of asset management plans and one of the primary reasons why the plan is an effective tool for managing heritage assets. Knowing the state of assets is the key to developing effective operations and maintenance programmes to prevent deterioration of heritage assets.

Regular monitoring of heritage assets will identify whether the use is appropriate, predict and prevent asset/fabric failure, assess whether service levels are appropriate and determine what corrective action to take and when. Although the condition does not necessarily affect the use of a heritage asset, it is often a significant factor in retention of heritage values and therefore its performance as a heritage asset.

The asset management process is record and measurement based so condition and performance assessments are objective (NZIAMM 1996:2.8). The benefits of knowing the current condition and performance levels of infrastructure assets are also relevant to heritage assets. The reasons are:
*   the ability to plan for long-term delivery of service levels, maintenance requirements to meet those service levels and accurate prediction of future expenditure
*   avoidance of premature asset failure mitigated with minimal intervention (consistent with ICOMOS principles) and cost-effective preventive actions

- risk management associated with asset failures
- refinement of maintenance and rehabilitation strategies due to better knowledge of the asset condition
- awareness of business risk/heritage values and potential loss to the government, organisation, community or owner (NZIAMM 1996:2.9).

Condition and performance monitoring programmes comprise grading scales and measures to objectively evaluate asset performance, requirements and costs. Both infrastructure and heritage asset monitoring employ specialised skills for assessing and resolving any problems. Condition and performance measures need to be developed for heritage assets to enable effective and consistent monitoring. Monitoring programmes for heritage assets will ensure the assessment process is repeatable because the lifecycle expectation is often for perpetuity.

One of the difficulties of evaluating performance of heritage assets is there is no single measure that will reflect the relationship between the asset's level of service and the community/customers. Where there is no income generation or profit performance measures, indicators may need to measure asset condition/performance against customer satisfaction.

6. Asset rehabilitation/renewal
The NZ Infrastructure Asset Management Manual defines the asset rehabilitation/renewal stage as the activity of restoring assets to ensure that required levels of service can be delivered (1996:2.10). An analysis of the infrastructure rehabilitation/renewal stage shows that the renewal aspect is not directly applicable to heritage asset management. This is because it is unlikely that heritage assets can be renewed without compromising their integrity or losing their heritage values.

In a broader interpretation, rehabilitation could refer to the replacement or restoration of components of a heritage asset. This would be carried out to protect the heritage values, functional condition, performance and extend the life of the asset. ICOMOS principles should be adhered to for any rehabilitation plans. Rehabilitation would most likely be in response to asset failure or adaptive re-use. It may involve considerable investment and would be carried out after long intervals of time. Infrastructure rehabilitation costs are often assessed against replacement, customer benefits, funding availability, and maintenance costs (NZIAMM 1996:2.10). Economic justification for rehabilitation investment in heritage assets could be assessed in response to heritage significance, community interests, customer benefits, and income potential.

The benefits of heritage asset restoration will extend beyond the direct users of the asset to the greater community. Decision making on whether to invest in heritage asset rehabilitation may include community input. Rehabilitation should be in accordance with ICOMOS principles and appropriately funded to ensure these standards can be met.

7. Asset disposal/rationalisation
There are a number of circumstances which may necessitate the disposal of heritage assets. These are safety issues, development pressures, or loss of heritage values through deterioration or changing community attitudes. Legislation and district plan rules largely dictate the parameters for safety and development pressures. Heritage asset disposal as a result of deterioration is not uncommon and often relies on the community (including NZ Historic Places Trust) to rally and protect the asset. District Plan heritage schedules are indicators of community attitudes and preferences for protecting heritage assets. If a heritage asset is no longer considered significant its

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heritage values will not assure its protection and may become vulnerable to disposal like any other asset which no longer serves a purpose.

Rationalisation may occur in circumstances such as compilation of heritage registers where only representative examples of heritage assets are required. The impact of this could be that heritage assets not on the register are not eligible for funding and consequently at a higher risk of deterioration or disposal.

The disposal of a heritage asset is permanent – the heritage values intrinsic to the asset can not be replaced. Therefore decisions relating to heritage asset disposal need to investigate alternative options, follow a formalised process and include community consultation. If a heritage asset is to be disposed of, it should be recorded for posterity. This would entail thorough documentation, photographic and video recording of the asset and its context/location.

8. Asset management plan audit and review

The purpose of asset management plan audits are to ensure a continuous improvement cycle, maintain best industry practices and to assess the quality of processes, information systems and plan implementation (NZIAMM 1996:2.11). Audits cover three main areas – corporate direction, asset management plan effectiveness and benchmarking against best practices (NZIAMM 1996:2.12).

The approach used for infrastructure asset management plan audits is appropriate for heritage assets. The benefits of the audit and review for heritage assets are the opportunity to ensure that all processes are integrated, that heritage *is* being protected, and if not why not. The audit can take into consideration wider issues which may affect the effectiveness of heritage asset management plans such as political influences, funding or community issues. Best practice benchmarking can be derived from ICOMOS principles to ensure conservation standards are achieved. Other factors such as cost predictions, asset performance and condition, and customer satisfaction can also provide valuable information and guidance for improving heritage asset management plans.

The asset management plan provides a transparent and accountable process which has significant potential for protecting heritage assets. This is because the asset management process relies on thorough documentation and analysis of assets followed by accountable actions and measures. It will be less likely for heritage assets within the asset management framework to deteriorate or be disposed of without informed decisions on the options and consequences of the actions. The audit and review process further supports the clarity of the plan.

Lifecycle process summary

Table 5.2 is based on the infrastructure lifecycle asset management process and provides an overview of how the heritage asset lifecycle process could be implemented. The process is action oriented and aimed at developing a comprehensive understanding of the heritage asset and its environment.

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Table 5.2 Overview of the heritage asset management plan process based on the heritage asset lifecycle. (adapted from Table 5.3 and the NZIAMM 1996).

Heritage Lifecycle Management process	Actions
1. Asset planning strategies **Aim:** To protect heritage assets and meet customer needs in most efficient and effective manner.	Prepare heritage inventory to identify heritage values of assets. Clarify community expectations. Determine most appropriate use, level of service, length of service, lifecycle costs; determine adaptability of asset to a new level of service; justify costs for service levels; asset performance predicted; determine probability and consequences of asset failure.
2. Asset investment or acquisition **Aim:** To acquire or improve a heritage asset meet service levels.	Determine need for acquisition or investment in rehabilitation or means of intervention and costs of heritage asset; determine potential uses and service levels; evaluate proposed project; For all heritage assets - clarify objectives, level and length of service, investigate alternatives, determine future use and maintenance, lifecycle operation costs and monitoring requirements, establish full costs of asset rehabilitation/acquisition. Acquire heritage assets for District Plan schedule (community consultation, expert advice).
3. Asset accounting and economics **Aim:** To consider all heritage asset costs and revenues.	Determine lifecycle operating and rehabilitation costs; predict risk of asset failure and allocate funds to avoid failure; Calculate income potential, determine funding requirements and arrangements for asset; produce an asset valuation incorporating heritage values.
4. Asset operations and maintenance **Aim:** To manage the operation and maintenance of heritage assets.	**Operations:** ensure asset is operating efficiently, effectively and heritage values are protected; develop a performance monitoring programme; audit operational practices; monitor to avoid asset failure; monitor costs. **Maintenance:** prepare conservation plan for heritage asset and develop maintenance programme consistent with ICOMOS principles; monitor use of heritage asset to reduce maintenance and risk of failure; set reliability targets; performance recording systems; comparative asset maintenance assessments; audit maintenance levels and procedures.
5. Asset condition and performance monitoring **Aim:** To identify heritage assets at risk from condition failure or under performance and determine corrective action.	**Condition monitoring:** refer to heritage asset's conservation plan to determine whether condition, especially heritage values, are being appropriately maintained. Document condition changes to determine when maintenance or rehabilitation may be required in future to perpetuate the life of the heritage asset. Regular condition monitoring should enable corrective action to avoid asset failure. **Performance monitoring:** monitor asset's use to ensure it is compatible with its condition and does not compromise heritage values. Monitor reliability of asset to determine whether service, health, safety and environmental requirements are met and if not take corrective action. Compare current utilisation with capacity.
6. Asset rehabilitation **Aim:** To restore the asset to ensure heritage values are protected and levels of service can be achieved.	Evaluate cost of rehabilitation versus permanent loss of heritage asset to the owner, agency or community; determine funding requirements (full lifecycle costs) and options.

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7. Asset disposal/ rationalisation **Aim:** To plan for the disposal of heritage assets.	Identify heritage assets for disposal; determine legal, environmental, social or heritage barriers to disposal; assess the costs for disposal versus alternative uses. May require community consultation if it affects assets on heritage schedules. Heritage asset should be fully recorded before disposal
8. Asset management audit and review Aim: To ensure a continuous asset management improvement cycle, maintain best industry practices and quality standards.	Assess quality of asset management processes, information systems and data, asset management plans and implementation. Audits of asset management plan effectiveness, corporate performance in achieving asset management objectives and benchmarking against best practices to ensure continuous improvement cycle is maintained.

Lifecycle management has the potential for managing and protecting heritage assets. It is possible to adapt the infrastructure asset lifecycle management process with a few modifications to meet the specific requirements of heritage assets. The process is integrated and includes checks and balances to ensure an information rich, comprehensive process is followed. Lifecycle management facilitates strategic long-term planning of heritage assets to prevent asset failure or loss. A series of principles have been developed to guide lifecycle plans for heritage assets.

Principles for heritage asset lifecycle process

1. The heritage asset lifecycle process is capable of translating heritage policy into effective and efficient series of management actions.
2. The integrated approach enables heritage asset condition to be given priority over asset use and thereby protecting heritage values.
3. ICOMOS principles and conservation plans can be incorporated into the lifecycle process and guide maintenance and rehabilitation.
4. Condition and performance monitoring is essential to prevent heritage asset loss.
5. The condition of heritage assets should retain their age and heritage characteristics rather than be maintained or rehabilitated to a new state or condition.
6. All stages of the process can be documented with clear accountabilities and responsibilities which improves understanding and management of a heritage asset.
7. Lifecycle management enables long-term strategic and financial planning aimed at perpetuating the life of heritage assets.
8. Heritage asset valuation needs to take into consideration intangible qualities and heritage values which may not be attributed economic values.
9. The lifecycle process can be applied at any scale – from an individual heritage asset to a council's heritage schedule.

Question Box 3   Review of lifecycle management modifications for heritage assets

Please write your responses in the separate booklet.

3.1 Do you consider lifecycle management could be adapted to heritage management?

If not why not?

If you agree, do you think the modification appropriate?

Please make any further comments on how the modifications could be improved or suggest alternative approaches?

3.2 What do you consider to be the strengths of the proposed heritage lifecycle management modifications?

3.3 What do you consider to be the weaknesses of the proposed heritage lifecycle management modifications?

3.4 Do you agree with all/some of the 'principles for heritage asset lifecycle management'?

Please state any principles you disagree with, reasons why and suggestions for improvement.

3.5 Please make any further comments on the proposed heritage lifecycle management modifications.

Resource Allocation

An essential component of the asset management plan is forecasting asset expenditure and revenue, and prioritising resource allocation. The objective of resource allocation is to ascertain the future financial liabilities regarding operation, maintenance, rehabilitation or replacement of the asset and facilitate cost saving opportunities for each asset (NZIAMM 1996:2.5). Knowing an asset's total lifecycle costs improves on-going management, decision making, allows comparison of asset alternatives to optimise operation and maintenance programmes, benchmarks the actual cost performance of the asset and enables comparative reviews against other assets to guide future acquisition decisions (NZIAMM 1996:4.54).

Resource allocation relies on forecasting techniques to guide investment. Forecasting entails the provision of financial information to assess the operating and capital cost profile for the management of an asset over a defined time period. Assessment of the asset lifecycle provides a sound basis upon which to predict these costs. This financial information will often be used as part of the wider financial planning processes employed within the agency or council. For example, the forecasts in asset management plans are an important component in long-term financial strategy's developed by councils under the Local Government Act.

Resource allocation (or investment appraisal) applies to the prioritising of funds between competing investments or assets. The methods employed to evaluate and value the prospective investments will influence which assets are preserved or improved and which assets are abandoned or rationalised. For this reason it is important to select methods that will take into consideration the values to be quantified, information availability and quality, and the expense (Kerr 1986:49).

Asset valuation methods are required to comply with statutory requirements, industry standards, reflect the value of the assets to the community, be consistent, cost effective and integrated with asset management practices (NZIAMM 1996:4.32). The *New Zealand Infrastructure Asset Management Manual* stresses that the valuation from an asset management perspective evaluates the remaining useful life rather than the standard economic life (1996:4.32). The typical process adopted by the Manual involves scoping assets to determine the most appropriate method, followed by research, analysis, trial and implementation of the most appropriate method.

The recommended valuation treatment for assets in the I is market value and depreciated replacement cost methodologies (NZIAMM 1996:4.34). Market value is defined as the estimated value of an asset if it were sold on the date of valuation between a willing seller and buyer. The replacement cost is calculated from replacement of an existing asset with a substantially identical new asset. The depreciated replacement cost is defined as 'the replacement cost of an existing asset after deducting an allowance for wear or consumption to reflect the remaining economic life of the existing asset' (NZIAMM 1996). Table 5.3 shows the types of valuations used for specific assets.

Table 5.3 Assets matched with appropriate valuation methods (NZIAMM 1996:4.34).

Asset type	Service area	Basis of valuation
Infrastructure assets	Land	Market value
	Buildings	Depreciated replacement cost
	Commercial plant	Depreciated replacement cost
	Reticulation systems	Depreciated replacement cost
	Road Formation, pavement etc	Depreciated replacement cost
	Traffic facilities	Depreciated replacement cost
	Bridges	Depreciated replacement cost
Ordinary fixed assets	Land	Market value
	Buildings	Market value

The valuation of infrastructure assets is derived from:

- the replacement costs;
- assessment of optimisation (the most cost effective replacement which performs the same or improved function);
- remaining economic life (age, service utilisation, condition assessment, performance assessment); and
- the decline in value.

The economic life and depreciation rates of assets need to be identified for assets to be eligible for depreciation tax deductions (an allowance to take account of assets that wear out or become obsolete), to guide investment (replacement or repair), and to prioritise funding allocations (NZIAMM 1996:4:36). The Income Tax Act 1994 provides a schedule to guide economic life and depreciation calculations. The *New Zealand Infrastructure Asset Management Manual* has used the Act's schedule as a starting point for assessing standard economic lives. The methodology used is summarised in Appendix 2. A series of predictive factors (age, use, performance) contribute to a realistic economic valuation of the existing life of the asset.

Resource allocation for heritage assets

A range of resource allocation methods used for infrastructure asset management planning can be used or adapted to heritage asset management planning. Most forecast methods can be directly applied to heritage assets for the purpose of predicting future trends and changes, and prioritising investment. Achieving sustainable management objectives for heritage assets may be more difficult. There is a public expectation that many heritage assets will be there for the enjoyment of future generations in perpetuity and resource allocation methods and decisions need to recognise this.

Another departure from conventional infrastructure asset management planning is consideration of a complex set of factors relating to heritage values, community value, intangible qualities and value

to future generations. Resource allocation methods need to be carefully selected and may need adjustment to be effective for heritage asset planning.

Resource allocation methods cannot easily take into account values which are not expressed in prices such as heritage values. The allocation of funds for investment in assets relies on an accurate assessment of the values that society places on the asset (Kerr 1986:1). Unlike infrastructure assets whose value to society is derived from the delivery of services, heritage assets derive value from less tangible qualities (spiritual, historical, etc) intrinsic to each asset. Difficulties arise when different types of assets and values are compared when competing for funds. For this reason it can be easier to make resource decisions when values are measured in a common unit (such as dollars) so direct comparisons can be made (Kerr 1986). This raises some problems because it can be difficult to attribute financial values to heritage assets for several reasons. These are:

- the financial value cannot be determined by the market alone because this value has a limited time horizon and may be too subjective;
- the financial value needs to reflect cultural and heritage values;
- the benefit of retaining the asset may have an uneven effect on individuals/community;
- intangibles such as social and spiritual values which contribute to a 'sense of place' are hard to value but must be considered;
- heritage assets have a range of significance values and should not all be deemed 'priceless';
- heritage valuation needs to be a pragmatic process with well-justified criteria to ensure transparent and consistent evaluation methods are used;
- depletion costs may cause heritage values to rise as more heritage is lost;
- contextual and rarity values must be taken into account (Blaschke 1996).
- Intergenerational issues where assets need to be valued in a manner that ensures their viability for future generations.

Heritage assets may not have a market value, depreciated replacement value or be capable of returning an income as infrastructure assets do. This is because heritage assets can not compete in the market place or be depreciated without losing all their value (*age* is their value). This can make it difficult to determine a realistic value and justify investment. If heritage assets are to compete for funding within the asset management framework it is likely that a financial value will need to be attributed for comparative evaluations to be made. A series of criteria can be applied to determine whether or not a heritage asset should be evaluated in financial terms (Ellis 1998:2). The criteria are:

- Service potential or utilisation: This is the ability of the heritage asset to generate income, meet its service levels, or achieve the agency's objectives/outputs. This does not necessarily mean cash flows, but applies more broadly to its potential to achieve specific objectives such as research, education or amenity value;
- Control: The ability of the agency to control the service potential of a heritage asset;
- Threshold: The estimated value of the heritage assets must be above a government specified recognition threshold (e.g. $2,000);
- Probable benefits: This applies where service potential in some form will be generated by the heritage asset;
- Reliable measure: The heritage asset has a cost or value that can be reliably measured and could include ability to meet service levels (Ellis 1998:3).

The cost-benefit analysis using contingent valuation methods may address most of the issues of heritage asset management. The case studies in Chapter Four indicated that agencies were concerned with evaluating the costs and benefits to both the community and the organisation to determine funding priorities. This is perhaps best achieved by using the contingent valuation in combination with other financial allocation methods. Contingent valuation is designed to create an artificial market or evaluation. This technique amounts to asking people what they would be willing to pay for the conservation of an asset (Bard and Pearce 1995:5). In this way, the level of public commitment can be evaluated and may also assist in forecasting the interests of future generations.

The cost-benefit analysis can be used to support or prevent development decisions relating to the asset (Pagiola 1996). The valuation of the asset's service potential in event of changes is measured against the costs of the changes and existing service potential. Where service potential is limited as is often the case for heritage assets, achieving cost-effectiveness would be the objective. In most cases this will mean achieving the most cost-effective way of achieving the conservation objective. Pagiola (1996) highlights the problem of the many intangible benefits of heritage and the difficulty translating these into measurable values. He proposes subtracting all measurable benefits from project costs and subjectively comparing the outstanding costs against the unmeasurable values.

A more comprehensive interpretation of the cost-benefit analysis developed by Bard and Pearce (1995), addresses some of the difficulties arising from the case studies. That is, to secure funds to finance maintenance and conservation of assets. To simplify the process, Bard and Pearce (1995:5) propose two types of values:
- the money value of benefits of development (eg increase in heritage tourism expenditure);
- the money value of resource costs of development (eg. labour, materials, machinery etc).

These two parameters can be used to calculate the benefits of conservation minus the costs of conservation. The result provides the value of conservation by defining the total economic value of conservation using a series of values. These are *use values* (function) + *indirect values* (indirect functions and benefits) + *option value* (future use) + *existence value* (the value of the conserved state to people even if they don't use it – they simply want it to exist) (Bard and Pearce 1995:5). This is a complex but comprehensive method which can take into consideration some of the less tangible benefits of heritage. The method requires more time and resources to resolve the valuation problems of non-market situations such as heritage.

The valuation methods discussed are but a few of the many available. They each address different aspects of resource allocation. The method for service utilisation would prove useful for guiding financial investment where there is income generation and also where there is significant heritage value to the community (public good). The contingent valuation method could establish the latter value. Pagiola's (1996) version of the cost-benefit analysis effectively incorporates heritage values and conservation objectives to guide investment decisions. The emphasis of this method is more on the outcome than the present valuation. Bard and Pearce's (1995) also takes a creative approach, translating

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heritage values into a valuation method which recognises the intangible values of heritage assets. It is probably the most comprehensive method and again focuses on the value of conservation investment.

Heritage asset valuation has been associated with determining heritage significance values, not financial values. Heritage values need to be factored into financial valuations because these qualities give the asset its value and context.

As the range of cost-benefit methods alone have indicated, theories on resource allocation and heritage valuation are beginning to emerge from practice. The three case studies investigated in Chapter Four reveal that agencies are quick to customise resource allocation processes to meet their specific needs. A brief review of the case studies follows.

Case study review

The methods used in the case studies were dictated primarily by the use of the heritage assets. This meant factors such as income earning potential could be factored into investment decisions. In the two New Zealand case studies, financial valuations of heritage assets were not used as both agencies focussed on forecasting the lifecycle (remedial and maintenance) costs required to meet service levels. It is perhaps important to note that all the agencies kept methods and processes as simple as possible. This is probably due to the public ownership and interests in the heritage assets and the need for open and comprehensible processes.

The New South Wales Government applies a system which includes an economic appraisal, risk analysis and value management to provide financial values of heritage assets. This is done to encourage agencies to find uses for heritage assets rather than create new assets.

The Wellington Regional Council does not require a financial valuation of heritage assets for its asset management plan. It relies on asset accounting methods to forecast the potential costs of remedial and maintenance work. The information is initially to be used for securing approval from councillors for funds to enable delivery of the specified service levels for the region's parks and forests.

The Department of Conservation has two valuation methods. If necessary, it will use the replacement value (replacing with identicate) to support a claim, but the priority is forecasting costs of remedial and maintenance work for funding applications to Treasury. Maintenance cost estimates are calculated on a case-by-case basis with the objective of meeting specified service delivery levels.

Proposed modifications to resource allocation for heritage assets

It is evident from the wide range of theories and practice that resource allocation for heritage assets has not been fully resolved. The two New Zealand case studies focussed on lifecycle cost forecasts rather than resource allocation and reflects the early stage of their asset management planning process. Choosing or adapting the right forecast or

financial method to achieve a desirable outcome is likely to be the key to achieving good heritage asset management.

Forecast methods should be selected to recognise the current public interest in heritage assets as well as the needs of future generations. Recognition of the needs of future generations may lead to long-term financial plans aimed at extending the life of heritage assets in perpetuity. A failure to have good forecasts (and hence long term organisational planning) will result in a crisis based approach to management of heritage assets. The provision of sound financial forecasts through the asset management process is critical to enable councils, agencies and heritage owners to see the challenges ahead and the decisions which will need to be made. This will help achieve sustainable management of heritage assets.

Resource allocation within the asset management framework offers plenty of scope for innovation in the future. Translating heritage values into measures that enable heritage assets to compete with other assets for funds will not be an easy task. It may not be possible or desirable to translate heritage values into financial terms. There is a wide range of resource allocation techniques available, some of which offer non-financial valuations. The cost-benefit analysis is one method which offers a well recognised approach that can be customised to guide resource allocation for heritage assets. It is important that the interests of the community are taken into account when allocating resources to heritage assets. For this reason it is important that resource allocation methods for heritage management allow for some level of public consultation, are kept simple and in a format that can be understood by those affected.

Principles for resource allocation for heritage assets

1. Heritage values and the intangible qualities of heritage assets may not be possible to translate into financial terms.
2. Heritage asset valuation should recognise heritage values in financial decision making even if they cannot be translated into financial terms.
3. Forecast methods and resource allocation techniques should accommodate sustainable management objectives.
4. Resource allocation methods should be selected with care so as not to compromise heritage assets.
5. Heritage assets cannot be replaced or depreciated - its significant age is likely to mean it no longer has a recognisable financial value.
6. Financial methods should be chosen for there simplicity where the public have an interest in the heritage asset.
7. Resource allocation decisions should be based on and be consistent with lifecycle asset management.

Question Box 4 Review of resource allocation for heritage management
Please write your responses in the separate booklet.

4.1 Do you consider resource allocation approaches need to be adapted to heritage management?

If not why not?

If you agree, do you think the modification appropriate?

Please make any further comments on how the modifications could be improved or suggest alternative approaches?

4.2 What do you consider to be the strengths of resource allocation approaches for heritage assets?

4.3 What do you consider to be the weaknesses of resource allocation approaches for heritage assets?

4.4 Do you agree with all/some of the 'principles for heritage asset resource allocation'?

Please state any principles you disagree with, reasons why and suggestions for improvement.

4.5   Please make any further comments on the proposed heritage asset resource allocation approaches and principles.

Conclusion

Service levels, lifecycle management, resource allocation are the primary features of asset management planning. In this Chapter, each feature has been analysed in the context of infrastructure asset management and then modified to meet the needs of heritage assets. A series of principles have been developed to guide heritage asset management planning. Collectively, these have sought to overcome both the deficiencies of the conventional asset management plan (designed for infrastructure) and current heritage management practice. The most significant modifications to the conventional asset management plan are:

- Sustainable management of heritage assets is the primary objective of heritage asset management plans.
- Service levels are adapted to recognise heritage values and prioritise these over other demands.
- The lifecycle process is adapted to recognise the specific lifecycle stages of heritage assets (no creation, renewal, replacement options).
- Standards for heritage asset management (condition, maintenance and monitoring) are guided by the New Zealand ICOMOS Charter.
- Resource allocation methods need to accommodate the special values of heritage assets which may not translate into financial terms.
- Forecasts need to consider perpetuity of heritage assets as an objective for long-term plans and financial strategies.

Question Box 5 Conclusion

Please write your responses in the separate booklet.

5.1 Do you consider the adaptation of the asset management plan to heritage management feasible? Please support your response with reasons.

5.2 If you made comments regarding heritage place loss and heritage management issues (Question Box 1), do you consider the heritage asset management plan would contribute to resolving any of the issues raised? Please explain how you think the asset management plan could be applied in those situations.

5.3 Do you consider the collective principles for service levels, lifecycle management, forecasts and resource allocation are adequate to guide heritage asset management planning? Please support your comments with reasons.

5.4 Who do you consider would most likely use the heritage asset management plan?

5.5 Is the heritage asset management plan approach capable of implementation by agencies/local government/heritage managers? Please explain reasons why or why not.

5.6 Please make any further comments.

Glossary

Adaptive re-use	New uses for heritage buildings or places. This may requires considerable modification to enable a new use.
Asset management	The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required levels of service (NZIMM 1996:ix).
Asset management plan	A plan developed for the management of one or more assets that combines multidisciplinary management techniques (including technical and financial) over the lifecycle of the asset in the most cost effective manner to provide a specified level of service. A significant component of the plan is a long-term cashflow projection for the activities (NZIMM 1996:ix).
Burra Charter	Australian version of the ICOMOS charter

Conventional asset management plan The infrastructure derived asset management plan as proposed by the *New Zealand Infrastructure Asset Management Manual*.

Conservation plan	A document which provides detailed information about the significance, history, fabric (materials and construction), condition, means of conservation, and maintenance requirements for a heritage structure or site.
Cost-benefit analysis	Comparison and evaluation of costs and benefits to assist decision making.
Criticality	A risk management factor. Critical assets are monitored and maintained proactively to a condition which ensures it can perform the required function reliably (WRC:2:10 1999).

Cyclical maintenance plan A cyclical maintenance plan may be prepared in conjunction with a conservation plan and includes maintenance requirements, a timeline to indicate when actions are required and in some cases, a monitoring strategy.

Depreciation	The wearing out, consumption or other loss of value of an asset whether arising from use, passing of time or obsolescence through technological and market charges (NZIMM 1996:xi).

Depreciated replacement cost The replacement cost of an existing asset after deducting an allowance for wear or consumption to reflect the remaining economic life of the existing asset (NZIMM 1996:xi).

Deprival value	The value of an asset to the present owner if the owner were deprived of the asset and was required to continue to deliver the same level of service (NZIMM 1996:xi).
Economic life	The period from the acquisition of the asset to the time when the asset, while physically able to provide service, ceases to be the lowest cost alternative to satisfy a particular level of service (NZIMM 1996:xi).
Financial statements	Balance sheets, profit and loss accounts, statement of changes in financial position, notes and other statements which collectively are intended to give a true view of the state of affairs and profit or loss for an entity for a defined period (NZIMM 1996:xi).

Heritage	Broad term used to describe the historic heritage buildings, items, sites and spiritual associations unique to every individual and community.
Heritage asset	Term used to describe heritage places in asset management plans.
Heritage place	Heritage buildings, sites and places with spiritual associations.
Heritage significance	Degree to which a place possesses a certain value. (WRC:5:3 1999).
Heritage values	The primary attributes of a heritage place and is derived from the significant historical, social, aesthetic and scientific values.
Historic heritage	Same definition as 'heritage'.
ICOMOS charter	Council on Monuments and Sites charter of heritage conservation principles and standards.
Infrastructure assets	Stationary systems forming a network and serving whole communities , where the system as a whole is intended to be maintained indefinitely at a particular level of service potential by continuing replacement and refurbishment of its components (NZIMM 1996:xii).
Level of service	The defined service quality for a particular activity or service area against which service levels usually relate to quality, quantity, reliability, responsiveness, environmental acceptability and cost (NZIMM 1996:xi).
Lifecycle	The cycle of activities that an asset goes through while it retains an identity as a particular asset i.e. from planning and design to decommissioning or disposal (NZIMM 1996:xii).
Lifecycle cost	The total cost of a an asset throughout its life including planning design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs (NZIMM 1996:xii).
Maintenance	All actions necessary for retaining an asset as near as practicable to its original condition, but excluding rehabilitation or renewal (NZIMM 1996:xii).
Maintenance plan	Collated information, policies and procedures for the optimum maintenance of an asset (NZIMM 1996:xii).
Market value	The estimated amount at which an asset would be exchanged on the date of calculation, between a willing buyer and a willing seller (NZIMM 1996:xiii).
Performance indicator	A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target (NZIMM 1996:xiii).
Performance monitoring	Continuous or periodic quantitative and qualitative assessments of the actual performance compared with specific objectives, targets or standards (NZIMM 1996:xiii).
Rehabilitation	Works to rebuild or replace parts or components of an asset, to restore it to a required functional condition and extend its life, which may incorporate some modification (NZIMM 1996:xiv).
Remedial work	Action to restore an asset to its previous condition after failure or damage.

Renewal	Works to upgrade, refurbish or replace existing assets with assets of equivalent capacity (NZIMM 1996:xiv).
Replacement	The complete replacement of an asset that has reached the end of its life (NZIMM 1996:xiv).
Replacement cost	The cost of replacing an existing asset with a substantially identical new asset (NZIMM 1996:xiv).
Remaining economic life	The time remaining until an asset ceases to provide service level or economic usefulness (NZIMM 1996:xiv).
Sustainable management	Definition from the Resource Management Act 1991: 'managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while – (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and (b) Safeguarding the lifecycle-supporting capacity of air, water, soil, and ecosystems; and (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.' (Section 5 RMA)
Valuation	Estimated asset value which may depend on the purpose for which the valuation is required ie. replacement value for determining maintenance levels or market value for lifecycle costing (NZIMM 1996:xv).

Maori terms

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hapu	Sub-tribes, usually a number of families with a common ancestor (MfE 1991)
iwi	Tribal group
kaittiakitanga	The exercise guardianship or stewardship.
mana	Spiritual power, prestige, authority.
marae	Complex around a wharenui (meeting house) (MfE 1991)
tangata whenua	In relation to a particular area, means iwi, hapu that holds management over the land (RMA 1991).
taonga	A term of very deep and spiritual meaning. Taonga can be treasures such as sacred possessions of the tanagata whenua. (MfE 1991)
wahi tapu	A place sacred to Maori in the traditional, spiritual, religious, ritual or mythological sense (WRC:5:3 1999).
wairua	Spirit.
whanau	An extended family

Bibliography

Bibliography

Allen, H. 1998. *Protecting Historic Places in New Zealand*. Department of Anthropology. University of Auckland, Auckland.

Australian Heritage Commission. 1995. Sharon Sullivan (editor). *Cultural Conservation – Towards a National Approach*. Australian Heritage Commission. Special Australian Heritage Publication Series Number 9. Australian Government Publishing Service, Canberra.

Bailey, M. 1999. Wellington Heritage Building Inventory. *Planning Quarterly*, 132, March 1999, 8-9.

Barde, J.P. and D.W. Pearce, (editors) 1995. *Valuing the Environment*. Earthscan Publications Limited, London, United Kingdom.

Barron, M. and D. Targett, 1985. *Manager's Guide to Business Forecasting: How to Understand and Use Forecasts for Better Business Results*. Basil Blackwell, New York.

Barrow, T. 1985. *An Illustrated Guide to Maori Art*. Methuen, New Zealand.

Blake, A. 1995. Aspects of significance. In Australian Heritage Commission, *Cultural Conservation – Towards a National Approach*. Special Australian Heritage Publication Series Number 9. Australian Government Publishing Service, Canberra. 239-240.

Blaschke, P. 1996. Sustainable Heritage Management. *Planning Quarterly*, 123, December 1996, 13-14.

Boer, B. 1995, *in* Australian Heritage Commission. *Cultural Conservation – Towards a National Approach*. Special Australian Heritage Publication Series Number 9. Australian Government Publishing Service, Canberra.

Bowman, I. 1999. *Regional Parks and Natural Forest Asset Management Plan for Heritage Structures*. Wellington Regional Council, Wellington.

Bowron, G. and J. Harris, 1994. *Guidelines for preparing Conservation Plans*. New Zealand Historic Places Trust, Wellington.

Brand, V. 1992. *Buildings at Risk – a Sample Survey*. English Heritage. London.

Busch, W. 1996. Tactical plans provide key linkage. *New Zealand Local Government*, January 1996, 20-21.

Craig, I. 1994. England's best methods could protect New Zealand's past. *Planning Quarterly*, 114, 15-19.

Davison, G. and C. McConville, 1991. *A Heritage Handbook*. Allen & Unwin, North Sydney, Australia.

Department of Conservation, 1995. *Atawhai Ruamano Historic Heritage Strategy: Conservation 2000*. Department of Conservation, Wellington.

Department of Conservation, 1996. *Historic Resources Strategy*. Auckland Conservancy, Auckland.

Department of Conservation, 1998. *Historic Heritage Management Review – A Discussion Paper for Public Comment*. January 1998. Department of Conservation, Wellington.

Department of Conservation, 1998a. *Historic Heritage Management Review- Report of the Ministerial Advisory Committee*. October 1998. Department of Conservation, Wellington.

Dobby, A. 1978. *Conservation and Planning*. Hutchinson of London, Great Britain.

Ellis, G. 1998. Cultural and heritage Assets: Financial and Budgetary Management: Memorandum 14. Australia Central Territories, www.act.gov.au

Fill, B.A.1997. *A Community Based Funding Model to Conserve New Zealand's Built Heritage*. MRP Thesis, School of Resource and Environmental Planning, Massey University.

Feilden, B.M. 1994. *Conservation of Historic Buildings*. Butterworth-Hienemann Ltd, Oxford, United Kingdom.

Forbes, S. 1999. Unpublished draft Wellington Regional Council Asset Management Planning – Heritage, First level Analysis. Wellington Regional Council, Wellington.

Gatley, J. 1996. Unpublished conservation plan: Bank of New Zealand Heritage Inventory. Wellington.

Gilkison, B. and KPMG, 1999. *Accounting for a Clean Green Environment*. Gilkison O'Dea and KPMG, Nelson, New Zealand.

Government of Victoria, 1995. The Asset Management Series. www.home.vicnet.au/-assetman. Parts 1-7.

Hall, C.M. and S. McArthur (editors), 1996. *Heritage Management in New Zealand and Australia: The Human Dimension*. Oxford University Press. Australia.

Highfield, D. 1987. *Rehabilitation and Re-use of Old Buildings*. E. & F.N.Spon, London.

Hughes, P. 1996. Local Authorities and heritage management. *Planning Quarterly*, 123, 10-11.

Holman, D. 1990.Comment from the retiring Chairwoman of the New Zealand Historic Places Trust. *Planning Quarterly* 100, 22.

Jacobs, J. 1961. *The Death and Life of Great American Cities: The Failure of Town Planning.* Vintage, New York.

Johnston, C. 1995. Heritage Studies. In Australian Heritage Commission, *Cultural Conservation – Towards a National Approach.* Special Australian Heritage Publication Series Number 9. Australian Government Publishing Service, Canberra. 395-398.

Kerr, G.N. 1986. *Introduction of Non-Market Valuation Theory and Methods.* Studies in Resource Management No. 1. Centre for Resource Management. Lincoln College, Canterbury.

Lowenthal, D. 1985. *The Past is a Foreign Country.* Cambridge University Press. Cambridge, Great Britain.

Lowenthal, D. 1986. *Possessed by the Past: The Heritage Crusade and the Spoils of History.* Viking. New York.

McCarthy, J. 1995. Historic Sites: What Future? In Australian Heritage Commission, *Cultural Conservation – Towards a National Approach.* Special Australian Heritage Publication Series Number 9. Australian Government Publishing Service, Canberra. 372-376.

McLean, G. 1998. *New Zealand Historic Places Trust Ministerial Advisory Committee Historic Heritage Review.* Information paper No 1: Registration. New Zealand Historic Places Trust, Wellington.

Marquis-Kyle, P. and M. Walker, 1994. *The Illustrated Burra Charter: Australia ICOMOS.* Australian Heritage Commission, Canberra.

Merriman, N.1991. *Beyond the Glass Case.* Leicester University Press, Leicester, United Kingdom.

Ministry for the Environment, 1991. *Consultation with Tangata Wheuna.* Wellington.

Ministry for the Environment, 1999. Resource Management Act Amendment Bill Introduction to Parliament (last updated 15 September): Clause by clause explanation; Draft regulations. www.mfe.govt.nz

Nahkies, B. 1998. *The Economics of Heritage Buildings: A contribution to the Historic Heritage management Review*. New Zealand Historic Places Trust, Wellington.

New South Wales Government, 1996. *Heritage Asset Management*. Department of Public Works and Services, Policy Division, NSW Government, Sydney.

New Zealand Historic Places Trust, 1997. *Incentives for Heritage Conservation: The Role of Local and Regional Government in New Zealand*. New Zealand Historic Places Trust, Wellington.

National Asset Management Steering Group and Association of Local Government Engineers New Zealand. 1996. *New Zealand Infrastructure Asset Management Manual*. Wellington.

New Zealand Local Government (no author specified), 1998. Effective Asset Management Blueprint. *New Zealand Local Government*, September 1998.

Parliamentary Commissioner for the Environment, 1996. *Historic and Cultural Heritage Management in New Zealand*. Parliamentary Commissioner for the Environment, Wellington.

Pagiola, S. 1996. *Economic Analysis of Investments in Cultural Heritage: Insights into Economics*. Environment Department, World Bank.

Pearce, D. Markandya and Barbier, 1990. *Blueprint for a Green Economy*. United Kingdom Department for the Environment. Earthscan, London.

Pearson, M. and S. Sullivan, 1995. *Looking after Heritage Places: The basics of heritage Planning for Managers, Landowners and Administrators*. Melbourne University Press, Melbourne.

Reeves, S. 1991 Heritage Orders and the RMA. *Planning Quarterly* 104, 11.

Reid, I. 1996. Measuring performance. *Leaders: Magazine of the New Zealand Society of Local Government Managers*. 3 (4), 14, 25.

Resource Management Act 1991. Data Services Limited 1996.

Smith, B. 1996. The most pressing issues. *Leaders: Magazine of the New Zealand Society of Local Government Managers*. 3(4),13-14.

Toffler, A. 1970. *Future Shock*. Pan Books, London, Great Britain.

Victorian Government, 1995. *The Asset Management Series*. Australia. www.home.vicnet.net.au

Warr A, and J. Rice, 1996. Asset Management. *In Place: A Cultural Heritage Bulletin.* Vol. 2 September 1996.

Weeks K.D. and A.E. Grimmer, 1995. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Constructing Historic Buildings.* US Department of the Interior National Park Service. Washington DC.

Wellington Regional Council Vol 1. 1999. Draft Regional Parks and Natural Forestry Asset Management Plan: Volume 1, Summary. Wellington

Wellington Regional Council Vol 2. 1999. Draft Regional parks and Natural Forestry Asset Management Plan: Volume 2, Methodology. Wellington

Wellington Regional Council Vol 5. 1999. Draft Cultural Heritage Service Levels and Standards: Volume 5. Wellington.

Wellington Regional Council Vol 7. 1999. Draft Life Cycle Plans for Regional Parks and Forests: Volume 7. Wellington

Woodward J. 1996 *A Review of Local Authority Heritage Protection Measures.* New Zealand Historic Places Trust, Wellington

Womersley, J. 1995. Co-ordination, facilitation and administrative support for heritage conservation in Australia. *In* Australian Heritage Commission. *Cultural Conservation – Towards a National Approach.* Special Australian Heritage Publication Series Number 9. Australian Government Publishing Service, Canberra. 76.

Young, G. 1995. History and Conservation : the Interface. *In* Australian Heritage Commission. *Cultural Conservation – Towards a National Approach.* Special Australian Heritage Publication Series Number 9. Australian Government Publishing Service, Canberra. 421.

Legislation

Building Act 1991

Conservation Act 1987

Historic Places Act 1993

Local Government Act 1989

Resource Management Act 1991

Personal communications

Bell, Karen. Ministry for the Environment. 23 July 1999. Discussion

Clelland David. Consultant to Wellington Regional Council. 29 September. Interview

Dobbie, Brian. Visitor Asset Management System. 3 November. Interview.

Laws, Graham. Project leader, Wellington Regional Council.7 October, 18 October.

MacReady Sarah. Department of Conservation Auckland Conservancy. 6 October. Email

Mahoney Paul, Central Regions Office, Department of Conservation. 13 October, 3 November 1999. Interview.

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