will be areas of formal cemetery, where gravesites and access are maintained in a more traditional setting, and where visitors can experience the heritage of the site in an open setting. Trees will be used as features along with plantings and flower beds. Other parts of the Karori Cemetery will be maintained as bush and garden settings where gravesites can be discovered as part of a walk through a tree and bush environment. These areas will still be maintained and managed - but not to a formal standard.

Information is available so visitors can locate gravesites and find their way around the sites of heritage significance. The cemetery will also have linkages to the Outer Green Belt and into Otari-Wilton's Bush.

5. CURRENT AND PREDICTED RATES OF USE

In terms of burial (not including the disposal of ashes that requires less space and can be delivered in a variety of ways), Karori Cemetery has a number of plots available for use. As most of these are pre-purchased, and multiple interments are possible, it is difficult to specify the length of time that this cemetery will be able to cater for demand. Potentially thousands of plots could be used in this manner.

If a member of the family is buried at Karori, further interments in the grave are allowed. The profile of the cemetery has increased because of heritage, recreation, genealogical and amenity reasons, which has led to an increase in the popularity of the cemetery for burial.

5.1 CURRENT USAGE

Numbers of interments and cremations until 2001:

Burials	
Makara Cemetery	8,700 interments
Karori Cemetery	79,300 interments
Cremations	
Karori Crematorium	68,400
Total	156,400

Karori Cemetery has the greatest number of interments of any cemetery in New Zealand and the second highest total number of cremations.

It is predicted that rates of interment will continue at much the same levels in the immediate future, but will slowly decline due to the finite number of available plots. The availability of gravesites in the Karori Cemetery is dictated by current ownership and whether graves have space within them to accept more burials. There is no intention to close Karori for at least another 10 years. When Karori Cemetery does close there are still certain exceptions where people are allowed to be buried within the Cemetery (as set out under the Burial and Cremations Act) and memorials and

headstones can still be erected providing they meet the normal requirements set out by Cemetery Management.

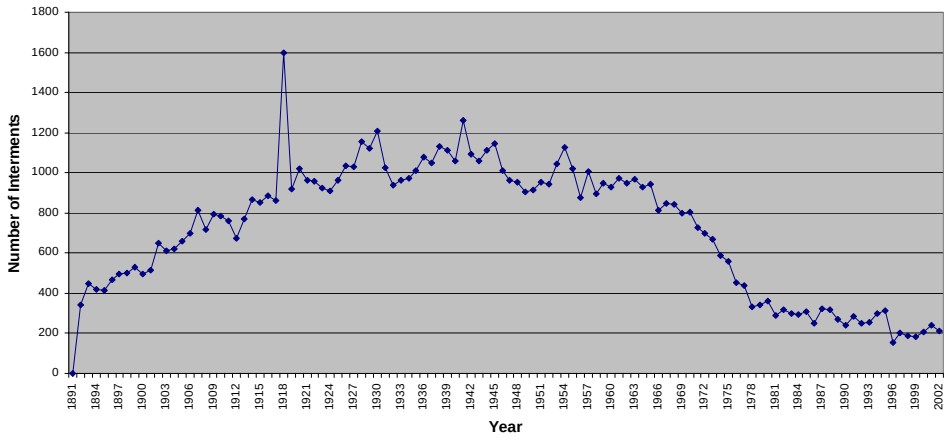
Makara Cemetery has a large amount of undeveloped area available for burials. The current rates of interment will mean that it is likely that infrastructure and facilities will be required within 5-15 years to expand the capacity of the Cemetery within the developed area. Some of this expansion work will occur ahead of time to open up areas for special burial areas.

5.2 CAPACITY AND FUTURE RATES OF USE

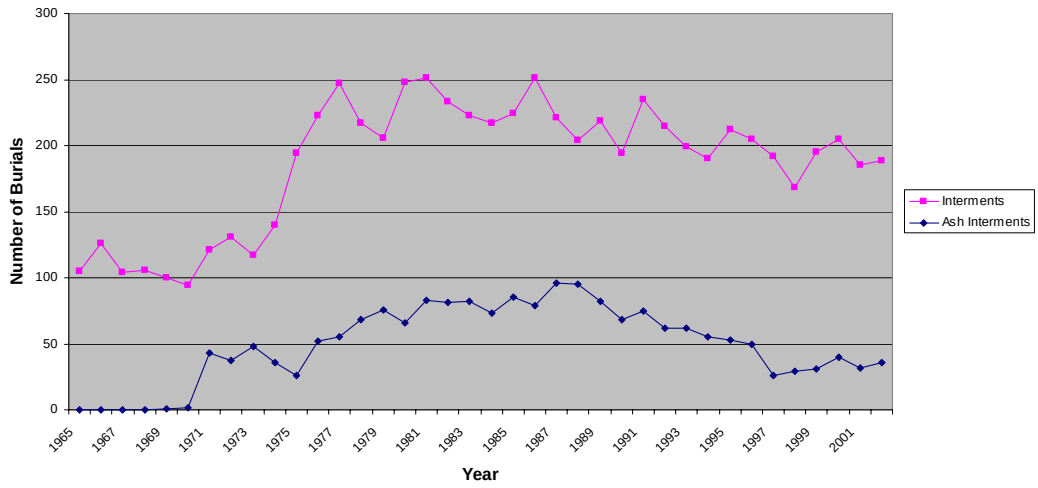
The expansion of Makara Cemetery (into new areas) is governed by the rate of use for established areas and, to a lesser extent, the amount of burial that occurs at Karori Cemetery. Any expansion will occur in a planned way to ensure infrastructure and amenity works occur consistently and where required. Expansion into undeveloped areas away from the existing ring road for is not anticipated for another 10-15 years. The exception is the Catholic area, which has had money set aside within the implementation plan in Section 10.

Current rates of burial at Makara Cemetery and burial and cremation at Karori Cemetery are illustrated in Graphs 1, 2 and 3.

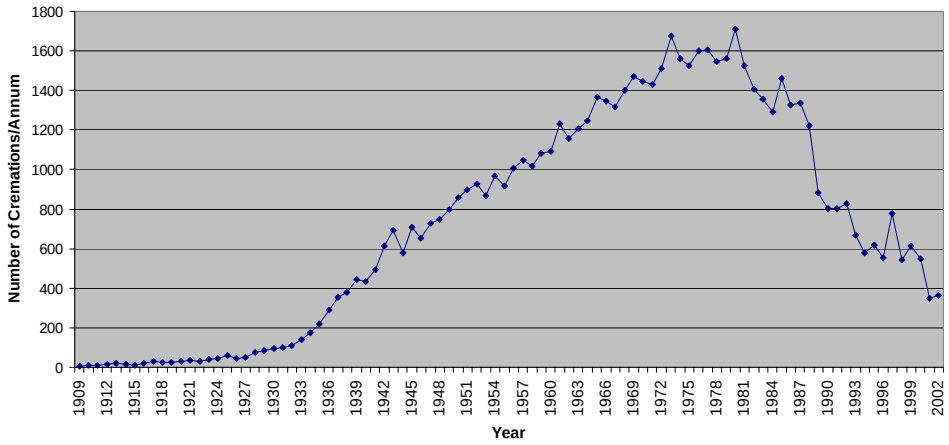
Graph 1 - Interments at Karori Cemetery



Graph 2 - Interments per year at Makara Cemetery



Graph 3 - Cremations at Karori Crematorium



Cremation numbers at Karori Cemetery have dropped due to increased competition within the cremation market as funeral directors have opened private cremators. The crematorium will remain open as long as the following criteria are being met:

- There is a current discharge consent for the crematorium
- There is no substantial upgrade or repair work required
- The crematorium is used on average 3.75 times per week.

If the crematorium fails to meet these criteria a review will be undertaken.

The main Chapel will also be continually assessed to ensure that its viability. It will remain open while it meets the following criteria:

- There is at least one service per fortnight
- There is no substantial repair or maintenance work required.

The administration infrastructure at Karori Cemetery is ideally located, due to Karori Cemetery receiving the majority of calls in regard to genealogical research and location of graves. It is also convenient to the city and is within a short commuting distance to Makara Cemetery. If in the future Karori Cemetery is required to be closed, then relocation of the infrastructure to Makara Cemetery could be considered.

The decreasing trend for interments over the past 20 years is due to many elderly moving away from Wellington to retire and the high proportion of transient people buried at their birthplace outside of Wellington.

Forecasting of cemetery 'life' will be continually monitored by Cemeteries Management. At a point in the future effective management will require that Karori Cemetery be closed, however there is no intention of closing the cemetery within the life of this Management Plan. This process will need to be carefully considered, but is governed by the Burial and Cremations Act (BCA). An exact date cannot be predicted, however once the cemetery fills above a certain, level a period will be able to be specified after which the cemetery will close. Monitoring of capacity forecasting will indicate when closure should be progressed.

There is potential for Karori Cemetery to be classified under the Reserves Act 1977 as a Historic Reserve as Bolton Street Memorial Park has been. The potential for this will be assessed when Karori Cemetery is at a stage where it is ready to be closed.

5.3 NATIONAL MORTALITY STATISTICS

From the middle of the 19th century until the 1930s, New Zealand had the lowest mortality rates in the world. A temperate climate, low population density, lack of heavy industry and good nutrition gave New Zealand an early advantage over other nations in terms of health conditions.

A large part of this improvement occurred before the 1930s. The infant mortality rate fell steadily with a major reduction in infectious and respiratory diseases, previously the main causes of death.

Women continue to outlive men. A century ago, women could expect to outlive men by two years. By 1950-52, the female advantage had increased to four years, and by 1990-92, it was about six years. In recent years, the female-male differences in mortality appear to have declined to just over five years.

Since 1970-72, there has been a gain of 5.7 years in the life expectancy at birth of men, and five years for women. Unlike earlier years, a major part of this improvement has occurred at retirement ages.

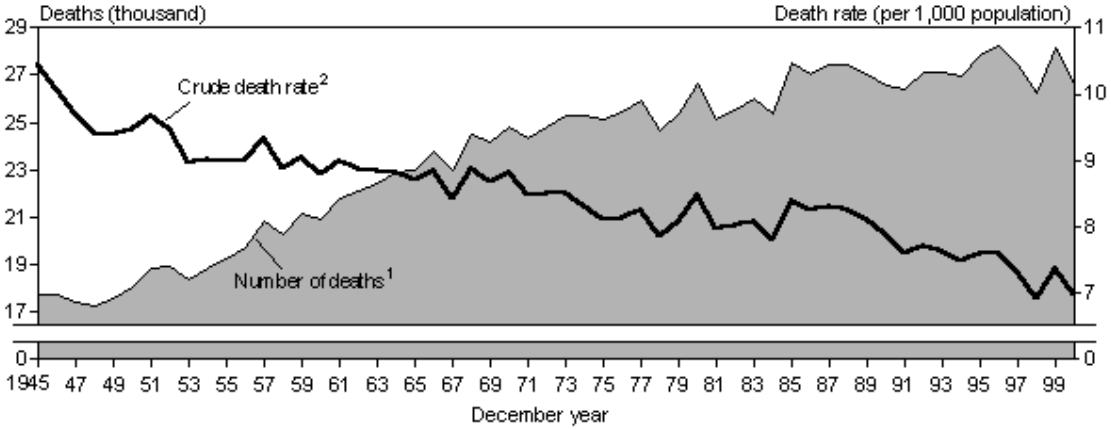
Life expectancy also varies according to ethnicity. The life expectancy at birth for Mäori males increased from 54 years in 1950-52, to 68 years in 1990-92 - a gain of 14 years. For females the figure rose by rose by 17.1 years - from 55.9 to 73.0 years. However, in 1991-92 a newborn New Zealand European male child could expect to outlive his Mäori counterpart by 5.4 years. For females, the difference was 6.2 years.

(Source – Statistics New Zealand)

Deaths and Death Rates

Total Population

1945–2000



1. Registrations.
2. Per 1,000 estimated mean population.

Note: The number of deaths and death rates from 1991 onwards are based on the resident population concept. Figures prior to 1991 are based on the de facto population.

5.4 NEW CEMETERY SERVICES

Core Drilling
New techniques for intering ashes into monumental plots are offering an increasingly professional service - with the ashes now being intered into the plot without undermining the foundations. The practice in the past was to dig out the front of a plot (in the pathway most often), then the ashes were intered from the front. This often resulted in damage to the path and in some cases erosion. These days the core drilling machine cuts through concrete and makes a hole about 200mm in diameter. The hole is then capped off with either a concrete plug or a vase holder for flowers.

Disinterment
This is a service which has been offered for some time, but is becoming more well known and common. This service allows disinterment followed by cremation and either reinterment at a different location within the cemetery or the ashes may then be taken home by the family or reintered/scattered at a different cemetery or location. This service could potentially have implications for the life of Karori Cemetery as it creates more space for interments.

Rose Garden Development
More recently at Karori Cemetery there has been an extension to the memorial rose garden (ash interments). An additional eight rose gardens have been added to this area. This has provided an additional 374 plots for interment and 74 plots for ash scatter. Both of these services have provision for small bronze or granite plaques.

At the current rate of 80 interment plots per year and 15 memorial plots per year it is envisaged that the current space will last between three and a half to four years before an expansion to the northern end of the rose garden area is needed. Expansion of this area may be a project which is completed in years five-ten of the Implementation Plan. This will be subject to ash interment numbers. There are also several other small areas of land which could potentially be developed in a similar method to that of the Rose Garden at Karori Cemetery, and again this will be dependent on demand.

New Technologies and Options for Burial
As with any service there are continual advancements and new options for how the service can be carried out. A growing trend in the United Kingdom is the establishment of a natural burial site. This process involves the body being buried in an environmentally friendly manner with no embalming or casket. Instead, the body is enclosed with a shroud or cardboard coffin at a depth of one metre. The site is then covered with compost soil mix and planted with eco-sourced natives. The overall aim is to restore an area back to native bush/park.

Options for natural burial have advantages over traditional methods such as:

- Shorter decomposition period
- Allows recycling of body nutrients
- Regenerating bush provides carbon sink and fauna habitat
- Less toxins released than traditional methods
- Less indirect environmental effects than traditional methods
- Allows use of steeper land usually difficult to use for traditional burial methods.

Natural burial provides these environmental benefits and lessons effects of traditional methods as well as increasing burial options available to the public. The method also may allow for land at Makara which would be difficult and expensive to develop for

traditional burial to be put to an efficient and environmentally friendly use. For these reasons the Council will actively pursue partnerships with natural burial specialists for the development of a natural burial site at Makara Cemetery.

New options or technologies such as this will be investigated for their suitability at Wellington cemeteries. All new services will be consistent with the Burial and Cremations Act and Bylaws.

Partnerships
The investigation of new facilities, such as natural burial, may provide opportunities to lower the risks to Council by partnerships or other arrangement with external organisations interested in providing these services.

Telarc ISO 9001; 2000 Certification
In September 2001 Wellington City Council Cemeteries and Crematorium became the first cemetery in the country to achieve ISO 9001:2000. This accreditation recognises that all administration and operational procedures are formalised, well thought through and are carried out in a high quality, consistent manner. These procedures and processes greatly reduce the possibility of error and provide excellent record and data keeping. The audits that take place are carried out under the ISO 9001:2000 requirements and are carried by an independent Telarc Auditor.

6. REGULATORY FRAMEWORK

Access to, and use of, the cemeteries is generally controlled by the Parks and Gardens Business Unit. The following legislation regulate control and guide the development and management of Makara and Karori Cemeteries:

- **Burials and Cremations Act (1964)**

Under the Burial and Cremation Act (1964) local authorities are required to provide and maintain cemeteries. Section 4(1) states:

> **Local authorities to provide cemeteries –** (1) "It shall be the duty of every local authority, where sufficient provision is not otherwise made for the burial of the bodies of persons dying while within its district, to establish and maintain a suitable cemetery." Burial and Cremations Act 1964.

The Act covers the establishment, maintenance and regulation of cemeteries, finance, trustees, burial grounds, cremation, closing of cemeteries, general provisions, offences and regulations, savings and repeals. The Act does not apply to Maori burial grounds.

- **Cemetery and Cremation Bylaw**

The Bylaw will provide the regularity context for enforcing appropriate behaviour of the public in cemeteries. Bylaws generally try to make activities and places safer for residents, workers and visitors. They are rules that have been decided over the years by Wellington City Council under the authority of the Local Government Act 1974.

The Wellington Bylaw for Cemeteries and Cremation 1991 is currently due for review. Many of the parts of the Bylaw are no longer relevant or are inconsistent with current cemetery management methods. The handbook (described below) has been