



URBAN DESIGN AND AMENITY

Urban design and amenity: overview

Rotorua is the primary urban centre in the district, and is a service centre for rural communities throughout the Bay of Plenty. Approximately 80% of the district's residents live in the city or urban area. The appearance and vitality of the central business district, the services and facilities that are available to people, and other aspects such as heritage, transport and residential development are all key features of city life in Rotorua.

An urban area is one where built structures are concentrated. Urban amenity is what people like about the urban environment. It means different things to people, but includes clean air, open spaces or a sense of safety. The design of an urban area impacts directly on amenity and people's experience. The central objective of urban design is to ensure that the needs of a community continue to be met in a way that can adapt to the ever-changing dynamics of modern life.

The urban design and amenity theme includes monitoring of six environmental indicators: noise, air quality, walkways, and residential, commercial and industrial development.

How are we going?

Air quality is an emerging issue for Rotorua. Most urban areas are within the Lake Rotorua basin, where typically air quality can fluctuate.

Noise levels are getting better, or quieter in rural and industrial zones, however they have increased slightly in residential areas. Overall, noise complaints have decreased with the exception of stereo noise complaints.

Since 2001 council walkways have increased by three kilometres. Council has also taken over the management of the Redwoods recreational area.

Residential section sizes are smaller than in 2001, dwelling density is greater and there are fewer potential lots available for development. The most common type of land use consent granted in residential zones was for building closer to a neighbour's boundary or building a house that is taller than 7.5 metres.

What are we doing?

The biggest potential impact on urban design and amenity will be the review of the district plan, which sets out the rules for what is allowed on land in the district. Aspects such as section size, dwelling density, subdivision thresholds, noise levels and activities in the CBD will be considered.

A Local Air Management Area Plan is being designed to address air quality issues. The focus of this plan will be to find ways of reducing smoke from residential fires.

National noise level standards are under review and will impact on the district's noise levels set in the district plan. The review of the district plan will have an impact on urban design and amenity. The plan sets the rules for the types of activities allowed on land in the district. This means that things such as section size, dwelling density, subdivision thresholds noise levels and activities in the CBD may change.

Other projects will inform the district plan about issues and opportunities for the CBD, such as the Rotorua Lake Front Strategy and the CBD Revitalisation Project.



Urban design indicators are:

Indicator	State
Air quality	STEADY
Noise levels	GETTING BETTER
Noise complaints	GETTING BETTER
Residential development	GETTING BETTER
Industrial and commercial development	STEADY
Walkways	GETTING BETTER



Purpose of indicator

Air quality has environmental as well as health implications. In urban areas where people, traffic and domestic fires occur in a concentrated area it is important to monitor and manage the level of particulate matter in the air. Particulate matter are molecules that float in the air and can include smoke, gases, pollen and dust.

Current information and trend

Particulate matter in the air can be large (50-100 μm) or very small (0.005 μm). The measure used when monitoring particulate matter in Rotorua is PM10 (10 μm), which is small and able to be inhaled and penetrate the nose and upper airway. The micrometre, symbol μm , is one millionth of a metre and is commonly used to measure wavelengths of infrared radiation.

There are three sites that are continuously monitored for PM10, carbon monoxide (CO) and hydrogen sulphide gas (H₂S). The sites at Pererika Street and Edmund Road generally monitor residential fire emissions and some vehicular emissions, while the monitoring station at Fenton Street has been located to monitor vehicle emissions.



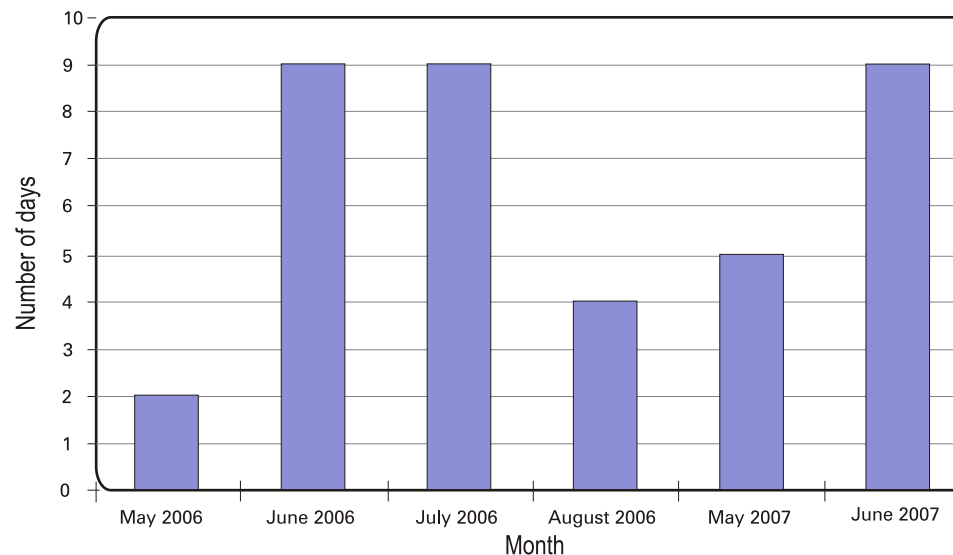
Monitoring at Edmund Road shows that exceedances of the National Environmental Standard - Air Quality (NES-AQ) occur only in the winter months, suggesting that the poor air quality can be directly attributed to emissions from domestic fires (Figure 7.1). There is little difference in the number of exceedances for the two years shown.

Monitoring results from the Pererika Street station (Figure 7.2) indicate that since 2002 there has been less time when air quality is 'excellent'. In Rotorua a number of climatic and

topographic factors contribute to air quality. Because Rotorua is situated in a basin, winds are not prevalent.

Temperatures in the atmosphere can encourage an 'inversion layer' to form. In an inversion layer the air or smoke from domestic fires or other activities is trapped in a warm layer of air close to the earth by a colder denser layer on top of it. When this occurs PM10 is likely to exceed the standard of 50 $\mu\text{m}/\text{m}^3$ over a 24 hour period. Once PM10 is high enough to warrant 'action' a Local Air Management Area (LAMA) Plan must be prepared. A LAMA is currently being prepared for Rotorua.

Figure 7.1 Edmund Road monitoring station number of exceedances of national air standards



Source: Environment Bay of Plenty, 2006

Urban design and amenity: air quality

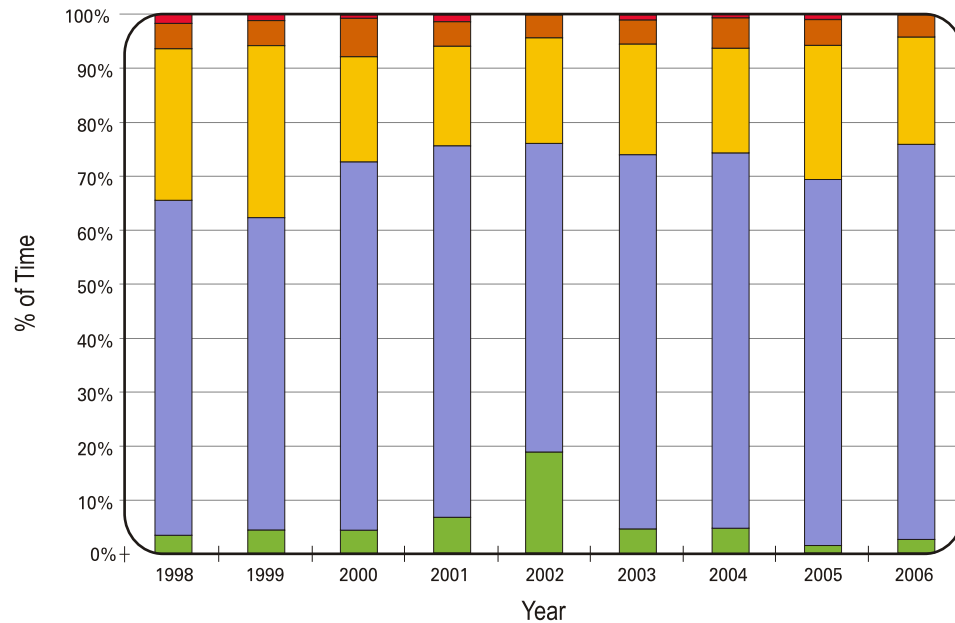


Indicator 7.1 Number of exceedances within the urban area (Particulate Matter <math><10\mu\text{m}</math>)

STEADY

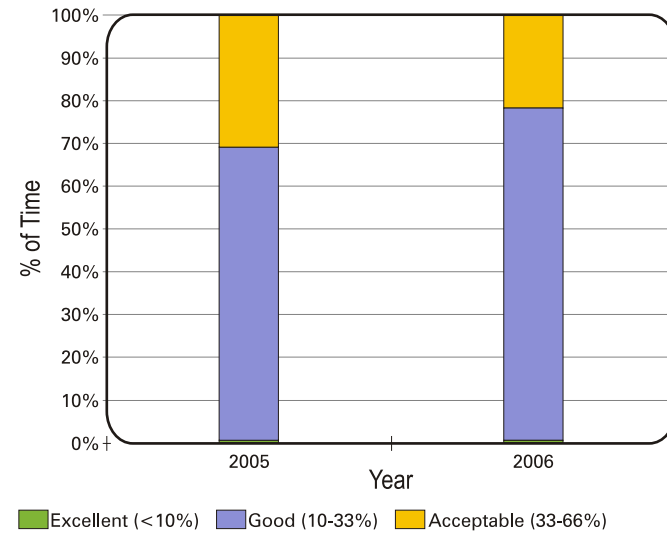
The Fenton Street station only shows two years of monitoring data (Figure 7.3). Over that period there is an increasing proportion of time that is in the good air quality category.

Figure 7.2 Particulate Matter (Pm₁₀) - Pererika St 24 hour average data - EPI categories for Pm₁₀ standard



Source: Environment Bay of Plenty, 2006

Figure 7.3 Particulate matter (Pm₁₀) - Fenton St 24 hour average data - EPI categories for Pm₁₀ standard



Source: Environment Bay of Plenty, 2006

What the community said

Approximately 52% of the community felt there were activities damaging the air quality in Rotorua

