

# Different approach results in change



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Waitakere City Council

Waitakere City Council has made a habit of doing things a bit differently. That ability to think outside the square is something it prides itself on.

So it is no surprise it took a different approach for tendering a lighting system for people using the Project Twin Streams Walk and Cycleway network – 9.4 kilometres of pathways running along the Waikumete, Opanuku and Oratia Streams.

In March the council celebrated the opening of the first 5.7 kilometres of the network to be illuminated by light-emitting diode (LED) lights, believed to be the largest LED public space project in New Zealand.

Waitakere was already looking at ways to improve the energy efficiency of

street lighting and wanted to transfer some of this learning to the walk and cycleway lighting system.

Tenderers were asked to include information on their sustainable business practices and energy usage of the lighting product to calculate anticipated energy consumption based on a set running time. Prices were evaluated on a split of capital costs and operational costs.

LEDs use around half the electricity compared to standard lighting products and Waitakere has already installed LEDs in more than 60 per cent of traffic signals and a small quantity of solar walkway and street lights.

The operational costs of the lighting will be lower and any future changes in use, such as lengthening the lighting times beyond commuter traffic, will have minimal operational and financial impact on the council.

## Case study – LED luminaries

Coll Electrical Limited was awarded the contract to design, provide product and install lighting on the seven kilometres of the network based on its submission, which included lighting design and LED product supply from Advanced Lighting Technologies NZ Ltd (ADLT).

Due to the limited budget, the tender was awarded to provide lighting to comply with AS/NZS 1158.3.1 Lighting Subcategory P4. From site trials, ADLT was able to show that by slightly reducing the spacing between poles to no greater than 35 metres spacing the light levels (especially the verticals) could be increased considerably. This provided a significantly improved lighting solution at minimal additional cost.

The 214 light fittings installed are BetaLED LEDway fitted with 20 watt LED

and purpose-designed optics that distribute the light effectively and evenly along the long, narrow path, with very controlled and minimal spill light. Poles are five metres high – the maximum height permitted under the resource consent. Horizontal illuminance levels achieved are in excess of Cat P3 and on some sections in excess of Cat P2.

Some sections of the path are as close as one metre to property boundaries. In order to ensure the spill light across these boundaries was kept within prescribed limits, invisible internal backlight shields have been fitted. The degree of cut-off with these LED fittings is vastly superior to that from conventional HID products.

All fittings have multi-output drivers which enable the light output from each fitting to be increased at any time, should it be required for any section of path in the future.

Total power consumption is less than one kilowatts per kilometre. The expected life of the LEDs is more than 100,000 hours of operation and the fittings in excess of 20 years. Energy use, maintenance, spill light and sky glow are all significantly reduced.

At the same time the quality of the lighting solution has been improved with high colour-rendering white light and improved uniformity.

Another project deserving attention is the 9.4 kilometre Project Twin Streams Walk and Cycleway network. This is a series of six pathways running along the Opanuku, Oratia and Waikumete streams. They provide a safe off-road environment for walking and cycling for those heading to work, to school or just out enjoying some leisure time.

The pathways also provide links to public transport, schools,



leisure and community facilities, parks and reserves and local town centres, local parks and native bush and feature a variety of community artworks.

Lighting the pathways improves visibility and creates a greater sense of security for commuters. These timer-operated lights will be on in the morning and evening week days during peak commuter times.

*To find out more about the network and to download a fun map of the network go to [www.projecttwinstreams.org.nz](http://www.projecttwinstreams.org.nz) or contact:*

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