



Subject **Findings of the 2007 Streetlight Theme Audit**

Circulation	All Road Controlling Authorities All Regional Councils ARTA Department of Conservation Controller and Auditor General Local Government New Zealand
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Purpose

To advise Approved Organisations of the recommendations and suggestions arising from the recently completed Theme Audit of Streetlighting (November 2007).

Scope of Audit

The audit was programmed due to concerns arising from observations during recent audits of (amongst other issues) supply agreement irregularities, continued use of obsolete technologies, increasing interest in new technologies and their uptake, and concerns about the ability of Council's to provide appropriate lighting to achieve safe and secure networks.

The scope of the theme audit was:

- To assess the contribution provided by Approved Organisations' street lighting installations and management towards meeting the outcomes of the New Zealand Transport Strategy through the key result areas for Land Transport NZ 2006/07.
- To assess the management of street lighting within a sample of 20 Approved Organisations.
- To provide a report summarising the findings of the survey, for publication to all interested parties.

- To determine whether in light of the survey's findings there is any need to make any changes to standards, guidelines and processes at national and Approved Organisation levels and to recommend accordingly.

Audit Conclusions

The summary findings of the audit were that:

- Street lighting contributes towards the outcomes of the New Zealand Transport Strategy through the key result areas for Land Transport NZ.

The New Zealand Transport Strategy outcomes contributed to are:

- *Assisting safety and personal security;*
- *Improving access and mobility;*
- *Protecting and promoting public health; and*
- *Ensuring environmental sustainability.*

Land Transport NZ key result areas contributed to are:

- *Improve the transport system;*
 - *Encourage sustainable travel patterns;*
 - *Increase the availability of modal choice;*
 - *Improve safety and integration of transport networks;*
 - *Promote safer use of the network; and*
 - *Reduce transport environmental impacts.*
- There is a general need to enhance skill levels and knowledge in street lighting technology.
 - There are a number of industry issues where it is likely that progress can best be made through joint action by Land Transport NZ with Local Government New Zealand, Electricity Commission and Transit New Zealand. Examples of such issues include:
 - *Tariff structures that are confusing, inconsistent, and may be a disincentive to improve energy efficiencies;*
 - *Reluctance of network companies to enter into agreements for the repair of cable faults;*
 - *Training needs; and*
 - *Other issues, such as:*
 - *agreement and adoption of more consistent depreciation lives;*
 - *improving energy efficiency and identifying other areas for savings;*

- *wider use of monitoring surveys or SLIM data analysis as a basis for upgrading plans; and*
 - *Adoption of a consistent and practical means of in situ light output measurement for the checking of the effectiveness of installations;*
- Lighting levels and upgrading programmes are reasonably well related to roading hierarchies. The consistency of application of lighting levels between authorities has not been explored.
 - Individual Approved Organisations have significant stocks of obsolete luminaires and unrealistic renewal programmes to upgrade these with modern luminaires.
 - The principal types of luminaires in use are high pressure sodium (76% of total stocks); mercury vapour (15%); and fluorescent (5%).
 - Street lighting inventories are not as complete or as well verified as the inventories for pavements.
 - One-third of Approved Organisations are charged for street lighting energy supply on an annual lump sum cost basis.

Recommendations & Suggestions

The report makes a number of recommendations and suggestions to both Land Transport NZ and Approved Organisations (Number in brackets refers to the appropriate section in the report).

Recommendations to Approved Organisations

That Approved Organisations:

- (a) include lighting deficiencies and shortfalls from planned lighting levels in the deficiency database prepared as a part of their Safety Management Systems or Asset Management Processes (section 4.2);
- (b) require a statement of design compliance for new installations similar to that specified in AS/NZS 1158 "Road Lighting" before they will accept handover from contractors or developers (section 5.2.2);
- (c) ensure renewals programmes are realistically based in relation to stocks of obsolete luminaires and the deterioration of old fittings (section 5.2.5);

Suggestions to Approved Organisations

That Approved Organisations:

- (a) consider adopting a lighting strategy document in line with the requirements of AS/NZS 1158 (section 4.2);
- (b) consider adopting the use of "white" lights to floodlight pedestrian crossings (section 4.2); and
- (c) adopt a design life value for the purposes of assessing "whole of life costs" of installations in the range 20-30 years as most likely to reflect actual performance (section 5.2.3);

Recommendations to Land Transport New Zealand

That Land Transport NZ's General Manager, Partnerships and Programmes:

- (a) foster the development and establishment of introductory and refresher level courses in street lighting standards and technology, for both asset management and urban planning disciplines (section 3.2); and
- (b) discuss with Local Government New Zealand and Transit New Zealand the issues raised in this report with a view to initiating joint action to obtaining better service from suppliers and to providing better levels of service to road users (section 3.4).

Subsequent Activity

Subsequent to the theme audit, discussions have been held with Mike Jackett who carries out training on street lighting design for NZIHT, and who advised on the audit, and the messages from the audit have been incorporated into the training materials used in the NZIHT training.

Discussions have also been held with Stuart Ross (Electricity Commission) and Geoff Swainson (Local Govt NZ) to discuss the findings.

Enquiries

For further information on the theme audit outcomes, please contact Julian Chisnall at Land Transport NZ's National Office by email julian.chisnall@landtransport.govt.nz , or phone 04 916 5605.



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