DESIGN BULLETIN #32/2006

LED Lamp Usage in Traffic Signals, Pedestrian Signals and Beacons

Summary
This Bulletin is issued to inform practitioners and department staff that light-emitting diode (LED) lamps should be used for all future traffic signal, pedestrian signal and beacon installations rather than incandescent lamps.

Using LED lamps instead of incandescent lamps in signals and beacons will lead to significant energy consumption savings due to increased energy efficiency over the 7 to 10 year LED life expectancy. Compared to conventional incandescent bulbs, LED's use 80 to 90 percent less energy. As a result, greenhouse gas emissions will be reduced.

Key Changes
Changes to the department practice for signal/beacon lamp selection have been made, these include the following:

- LED lamps should be used when installing new traffic signals, pedestrian signals and flashing beacons. This includes red, amber, and green circular ball modules; amber and green arrow modules; bimodal amber/green arrow modules; pedestrian walk and don't walk modules; bimodal pedestrian modules; and red and amber flashing beacons.

- The LED modules must be compliant with the current edition of the Institute of Transportation Engineers (ITE):
    - LED Circular Signal Supplement Purchase Specification -2a - VTCSH Part 2: LED Vehicle Signal Modules (Interim)
    - LED Arrow and LED Pedestrian Signal Specifications (Vehicle Traffic Control Signal Heads - Part 3: Light Emitting Diode (LED) Vehicle Arrow Traffic Signal Modules, and Pedestrian Traffic Control Signal Indications - Part 2: Light Emitting Diode (LED) Pedestrian Traffic Signal Modules)

The new guidelines as indicated in this Bulletin are to be implemented immediately as per the usual practice. Any projects not yet tendered shall comply with this Bulletin.

Individuals implementing LED lamps should note the wattage of the connection when installing the LED lamp. This information will be necessary for calculating energy consumption at locations that are not metered.

Effective Date: January 3, 2006.

Contact
Contact: Richard Chow or Corinna Mulyk, Technical Standards Branch, Alberta Infrastructure and Transportation.

References

ITE LED standards are available in electronic form on the following website:
http://www.ite.org/standards/led.asp