# City of Cambridge Lighting Guidance and LED Testing

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- High energy/cost savings
- Safety improvements
- Image improvements
- Attractive and secure night environment
- Public satisfaction







These luminaire types consist of:

#### Type A & B Streetlight

These luminaires consist of LED utility streetlights which are used on a majority of the residential streets in Cambridge mounted to wood utility poles or on their own streetlighting pole. They are supplied with adjustable drive current allowing them to be set a three different output setting meeting the needs of varied lighting requirements.

#### Type C Park/Pedestrian Light

These luminaires are used for pedestrian park areas and are currently available in only metal halide sources. When LED are used in this fixture type then revisions will be made to this manual.

#### Type D 1907 Teardrop Replica

This replica of a 1907 teardrop luminaire is used on primary commericial arterials through the city. These LED luminaires are available in a variety of lumen output and distribution types.

## Type E Acorn Style Fixture

This replica style acorn is used in conjunction with the Type D teardrop luminaire in commercial areas with high pedestrian volumes as well as a few select areas within the city. These luminaires are supplied with LED's at a set drive current and two distribution types.

The locations for the use of each of these fixture types is contained in the figure below. Catalog cuts for the base design of these fixture types are included as an annex to this manual.









## Luminaire Types







# Cambridge – Inman St.

# 1<sup>st</sup> test – Substitute equivalent output and distribution



**Relevant Standards** 

ANSI/IES RP-8 Standard Practice for Roadway Lighting (US) AASHTO Roadway Lighting Design Guide (US) FHWA Roadway Lighting Handbook (US) TAC Guide for the Design of Roadway Lighting (Canada) IMSA Roadway Lighting Certification (International) CIE 115 Lighting of Roads for Motor and Pedestrian Traffic (International) FHWA Recommendations for Crosswalk Lighting TM-11 Light Trespass Recommendations RP-33 Lighting for Exterior Environments



# City of Cambridge – Inman Street – 2<sup>nd</sup> test – Design per IES Criteria

### **IES RP-8 Recommendations**

Roadway lighting levels

Sidewalk lighting level Light trespass level (TM-11-00) 9 lux average
0.6 cd/m<sup>2</sup>
2 lux minimum vertical
8 lux pre-curfew maximum
3 lux post-curfew maximum

### **Existing Condition**

Roadway lighting levels

Sidewalk lighting level Light trespass level Power/unit 20 lux average
1.3 cd/m<sup>2</sup>
2.5 lux minimum vertical
25 lux maximum
185 watts

### Test Installation Condition Pre-curfew

Roadway lighting levels

Sidewalk lighting level Light trespass level Power/unit 12 lux average 0.8 cd/m<sup>2</sup> 3 lux minimum vertical 6.9 lux maximum 86 watts



So, to get the most benefit from your new streetlighting system.....

- Make a plan
- Create a cohesive lighting statement
- Use the correct fixture/optical system

