

## Green Building Practice Summary

12/13/2010

**Sector:** Residential

**Category/Practice:** OEQ / Exterior Lighting Fixture Design

### Proposed GB Practice

#### Description

Exterior lighting fixtures must have the “Fixture Seal of Approval” from the International Dark-Sky Association, or meet equivalent criteria approved by the Building Official.

Exception: This provision doesn’t apply if the fixture location provides equivalent shielding.

#### Applicability

New Construction: Applies

Existing Buildings/Additions: Does not apply

Existing Buildings/Alterations: Does not apply

#### Intent

Reduce light trespass and light pollution; help to preserve view of the night sky

### Benefits and Costs

#### Triple Bottom Line Benefits

Economic: No direct benefit. Potential for small electrical energy savings; compliant fixture directs light where it's needed, meaning it may be possible to use a lower wattage bulb to provide the same amount of useful light.

#### People:

- Improve safety by reducing nighttime glare and directing light to where it is needed.
- Reduction of intrusive light trespass
- Improved view of the night sky

Environment: Outdoor lighting can negatively impact wildlife

#### Costs Passed to Owner

Incremental costs are expected to be “very low” (\$0 to \$50) to “low” cost (maximum four fixtures @\$30 maximum = \$120). Some of the lowest-cost fixtures may not be available in a compliant equivalent.

## Implementation

### **Availability of Products and/or Services**

A wide variety of compliant fixtures are readily available at little or no additional cost.

Retrofit kits and shields can be purchased to bring some types of conventional fixtures into compliance.

### **Practicality**

See “Known Objections” below.

### **Certification Issues**

To increase the range of choice, the Building Department may establish local criteria for compliance.

### **Enforcement Procedures**

Permit application/plan review: N/A (lighting fixtures are rarely selected by this stage of the design/building process)

Field inspection: At final inspection, inspectors will visually check fixtures for compliance.

Certificate of Occupancy: N/A

### **Support Materials Needs**

A fact sheet regarding compliant lighting would be helpful for builders, home buyers and lighting retailers.

### **Training Needs – Industry**

In new construction, the home buyer often selects lighting fixtures. Education will be needed to ensure that owners and builders understand the requirement. This education should extend to local lighting retailers.

### **Training Needs – Staff**

Staff will need to understand the compliance criteria to answer questions and consistently enforce the proposed requirement.

## Background

### **Current Practice**

A wide range of exterior fixture designs is in use. Some are well-shielded while others have no shielding.

### **Context**

Exterior lighting can be a source of glare (making it difficult to see), light pollution (lighting the sky) and light trespass (lighting on one property intruding on adjoining properties). These attributes can cause safety problems, disrupt wildlife, reduce the view of the night sky and annoy neighbors.

The [International Dark Sky Association](#) has worked to raise awareness about these issues and the advantages of using more carefully designed fixtures. Fully shielded (or “full cutoff”) fixtures

direct light where it is needed, providing quality lighting without the problems noted above. The IDSA has developed the [“Fixture Seal of Approval” program](#) to identify dark sky-friendly fixtures.

Some major lighting retailers identify “dark sky-compliant” fixtures in their product line.

The City addresses exterior lighting design – including glare, light pollution and light trespass – in the Land Use Code. These regulations apply to site lighting and do not regulate exterior lighting on buildings.

### **Known Objections**

- Restriction of choice
- The City should first revamp its street lighting guidelines to meet Dark Sky criteria.
- Reducing light pollution from new construction is a drop in the bucket compared with light pollution from existing development.
- Owners may remove compliant light fixtures on a new building and replace them with the fixtures they really wanted.

### **Notes**

- Provide education to owners of existing buildings to raise awareness about glare, light pollution, light trespass. Encourage fixture change-out to Dark Sky-friendly products.