

Commercial Development: Lighting Standards

The Green Valley Institute exists to help the communities and citizens of The Last Green Valley, also known as the Quinebaug-Shetucket National Heritage Corridor, sustain their environment and quality of life while growing their economics.

We are a non-regulatory organization dedicated to:

- Improving the knowledge base from which land use and natural resource decisions are made,
- Building local capacity to protect and manage natural resources as our region grows.

The GVI was created through a formal partnership of the Quinebaug-Shetucket National Heritage Corridor and the University of Connecticut's College of Agriculture and Natural Resources, University of Massachusetts' Cooperative Extension System and other partners.



Regulations and design standards for commercial development can enhance town character, create a sense of place and encourage economic development. This fact sheet is the fifth in a series on this topic. Other fact sheets in the series are an overview of commercial development, and individual fact sheets with suggested regulation standards for site planning, architecture, signage and landscaping. **Lighting** provides safety, sets the tone for the exterior spaces of a commercial development, impacts the visual aspect from the road and enhances the experience of those using the space.

Objectives for Commercial Lighting

Lighting for commercial properties should be designed to provide the minimum level of illumination necessary for security, safety and visual appeal for both pedestrians and motorists.

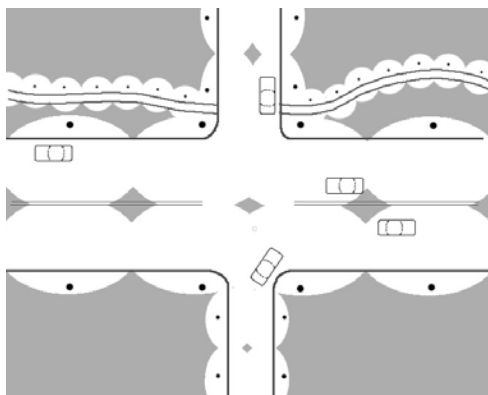


Functional, aesthetic and safety goals should be met with fixtures that are designed as integral site elements.

Lighting should not cause distractions or hazards to motorists and pedestrians, should minimize skyglow, and respects abutting property owners by avoiding off-site spillover or glare. Spillover onto abutting residential uses should not exceed 5 footcandles at the property line.

General Lighting Standards

Establish a hierarchy of site lighting to will provide safety and security throughout the project and complements the buildings, pedestrian amenities and site elements.



This illustration shows a distinct hierarchy in illumination levels for the major roadway, side street, one-way drive and the pedestrian walkway.

Select poles and fixtures at an appropriate scale for the buildings and surrounding spaces, and the human scale.

Coordinate the layout of fixtures with the landscaping plan to compliment the spacing and rhythm of plantings, especially

large shade trees. Consider the growth pattern of trees and shrubs to avoid future dark areas and deep shadows.

Highlight unique building or landscape features if the lighting does not create glare or distractions.

Position and size fixtures to avoid spillover onto neighboring residential properties or glare on adjacent roadways.

Design the lighting plan so that all fixtures complement the architecture, landscaping and other elements of the site in terms of form, color and style.

Use luminaries, including decorative fixtures, classified by Illuminating Engineers Society of North America (IESNA) as full cut-off, preferably with metal halide lamps.

Standards for Lighting Vehicular Areas

Provide the minimum lighting necessary for motorist and pedestrian comfort and safety; eliminate glare or spillover onto adjacent property and an increase in skyglow.

Design illumination for roadways and drives that follow a regular pattern in coordination with the layout of the buildings and other site elements.

Use a hierarchy of fixtures to define major and minor roadways and drives with a concentration of illumination on intersecting drives or access ways.

Illuminate within 5% of the levels defined by IESNA recommendations for road/driveways and parking lots.

Locate light poles within raised planting areas wherever possible to avoid damage from vehicles and plows.



The height of these fixtures are in proportion to the scale of the buildings and trees, well-placed throughout the parking lot and located within planting beds to minimize damage.

Standards for Lighting Pedestrian Areas

Consider a pedestrian's needs and safety in developing the lighting plan.

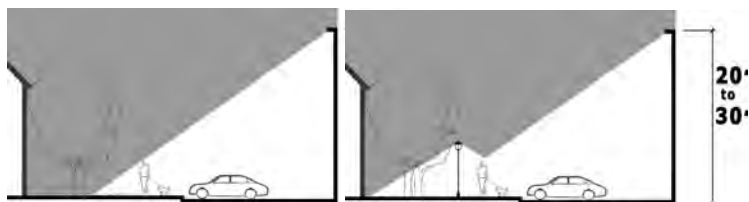
Provide adequate, but not excessive, illumination for the space occupied by people and the elements within those spaces such as stairs, walls, benches, curbs and landscaping. Eliminate dark spots by the coordination of the lighting with other site elements.

Illuminate walkways with enough peripheral distribution to illuminate the immediate surroundings within 5% of the levels defined by IESNA recommendations for pedestrian spaces.

Design the placement and spacing of fixtures to follow a regular pattern that is coordinates with the pedestrian ways and other site elements. Highlight significant design elements such as gateways, plazas, major building entrances, and the like.

Select light fixtures for pedestrian spaces that are appropriate for the project that relate to the human scale with a maximum height of 15'.

Lighting for pedestrian spaces and walkways must provide sufficient illumination for safety. Locate fixture to provide an overlapping pool of illumination based on the fixture height, style and lamp wattage.



In some situations, parking lot lights may be sufficient to illuminate a walkway. The illustration at the left shows insufficient lighting for pedestrian comfort, to light the area behind the trees, additional lighting, mounted lower, is needed as shown on the right.

Standards for Lighting Facades and Features

Design lighting of the building facade and other elements to enhance key architectural elements or areas with attractive landscaping as a component of an overall lighting plan.

Illuminate vertical surface at less than 5.0 footcandles.



Locate, aim and shield all fixtures so illumination is directed only onto the feature and away from any other area; avoid spillover onto adjacent areas.

Mount facade fixtures to wash the building face with even light in a downward direction.

Place uplights and/or washes to direct only onto a selected tree or shrub.

Standards for Lighting Gas Stations, Convenience Stores and Drive-throughs

Provide sufficient lighting for user safety without creating glare onto adjacent properties.

Illuminate the area around gasoline pumps at a higher level of light for the safe and effective use of pumps; illuminate within 5% of the levels defined by IESNA recommendations for gas pump areas.

Illuminate areas beyond 20' from canopies for gas pumps with based on standards for parking lots.

Use only under-mount recessed luminaires for canopies; use flat or regressed lenses with a cut off angle less than 85 degrees above the vertical so the light source is invisible to passing motorists.



The illumination under this canopy would not meet these standards.

Standards for Signage Lighting

Illuminate the vertical surface of externally-lit signs with sufficient light to provide a noticeable contrast with the surrounding building or landscape without causing undue glare or reflection.

Locate the light fixtures of externally-lit signs to direct only onto the face of the sign and avoid light spillage beyond the sign.

Conceal all light sources with appropriate canopy, screen ground-mounted fixtures or partially bury to minimize the view of the light source.

Select light fixtures to complement the color and design of the sign and the architecture and ease of maintenance.



This up-light fixture is carefully located and aimed to illuminate the sign without spilling beyond.



These down-lights illuminate the sign and provide architectural interest in keeping with the overall facade design.

Additional Information:

Green Valley Institute: www.GreenValleyInstitute.org

Illuminating Engineers Society of North America (IESNA): www.IESNA.org

Scarborough, ME Design Guidelines: www.scarborough.me.us/planning/pb/spguidelines.pdf



A publication of the Green Valley Institute. Please contact us at 860-774-9600 to schedule a workshop on this topic.