



Helping Communities face the challenges and impacts of growth while maintaining their character and sense of place.

Preserving Dark Skies

The dark and starlit skies prevalent in the rural regions of NH are an important natural resource for their esthetic value and contribution to our quality of life.



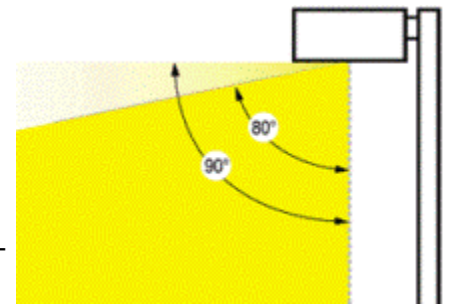
However, dark skies are threatened by high levels of light pollution from increasing development throughout the state. A majority of the light pollution in NH is produced by outdoor lighting at buildings, parking lots, homes, and streets. One method of controlling light pollution is through zoning ordinances allowing municipalities to conserve electricity and mitigate the impact of artificial light.



iTRaC is the Nashua Regional Planning Commission's new approach to community planning that focuses on integrating transportation, land use and environmental planning. The program was developed to assist communities in dealing with the challenges of growth in a coordinated way that sustains community character and a sense of place.

Innovative Mitigation Techniques

When adequately designed, outdoor lighting can meet a municipality's demands for safety while maintaining rural character. Proper outdoor lighting can also prevent road glare and reduce traffic accidents. Lighting regulations address commercial, municipal, and residential lighting and can be implemented at the local, regional, and statewide level through ordinances or provisions in site plan and subdivision regulations. One commonly adopted regulation requires the installation of efficient, high pressured sodium fixtures, which consume 80% less energy than standard 175-250 watt mercury bulbs and are less hazardous. Another widely used provision controls the degree of light cutoff in outdoor lighting fixtures. Full cutoff lighting, for example, emits no light above the 90° horizontal angle and limits light intensity between 80° and 90°.



Full-Cutoff

Less than 2.5% of light is emitted upward and 10% or less is emitted at the 80° angle.



Semi-Cutoff

5% of light or less is emitted upward; 20% of light or less is emitted at the 80° angle.



Cutoff

No more than 10% of light is emitted at the 80° angle.



Non-Cutoff

No limits on light emission.



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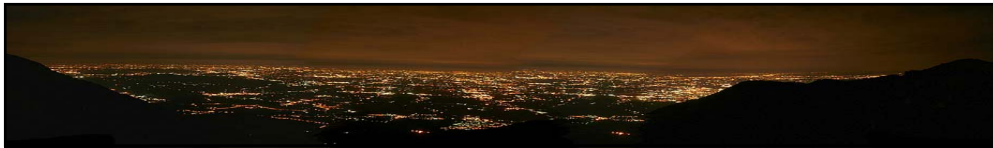
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Legal Basis for Dark Skies

The only state level mandate addressing the effects of outdoor lighting on traffic safety is RSA 236:55, which forbids the installation of any light along a highway that blinds travelers. The Commissioner of Transportation is responsible for enforcing this section of the RSA on class I, II, and III highways. Town Selectmen are responsible for enforcement on class IV, V, and VI roadways. Many local zoning ordinances adopt this law, which can also control light encroaching onto neighboring property. As of 2007, at least 30 NH communities have implemented stricter outdoor lighting standards through ordinances and/or planning board regulations, such as site plan reviews or subdivision regulations. Outdoor lighting regulations will vary according to the needs and character of each community.



A model dark skies ordinance can be found in the *Innovative Land Use Planning Techniques Handbook*, produced by the NH Dept. of Environmental Services, NH Association of Regional Planning Commissions, NH Office of Energy & Planning, and the NH Local Government Center. This is a model outdoor lighting ordinance for inclusion in the municipal zoning regulations of small or medium sized towns. Municipalities can adopt this ordinance as written or can supplement it with additional design standards in their site plan review regulations. A "Preserving Dark Skies" chapter is also available. This ordinance and chapter can be viewed at http://des.nh.gov/organization/divisions/water/wmb/repp/innovative_land_use.htm.



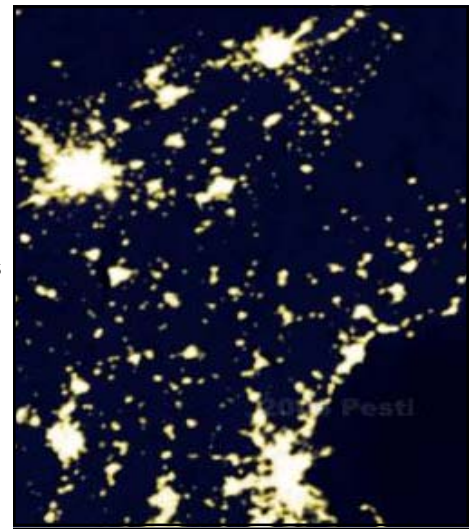
Dark Skies Case Studies

The following are examples of outdoor lighting statutes adopted by NH communities to preserve dark skies and mitigate the adverse effects of light pollution.

Peterborough ~ prohibits all upward lighting and sets varying maximum levels of outdoor illumination within commercial and village areas. The outdoor lighting mandate outlined in Peterborough's zoning ordinance provides a successful model for larger towns and urban areas.

Raymond ~ site plan review design standards require the usage of full cutoff light fixtures and prohibit upward lighting. This only applies to commercial and multi-family developments.

Shelburne ~ requires all outdoor lighting be controlled to minimize the spillover of light onto adjacent properties. In addition, non-decorative lighting in outdoor areas should be directed below the horizontal plane, excluding non-directional residential lighting such as a porch, driveway, or walkway. This provides an example of how a simple lighting ordinance might be implemented in a small town.



Light pollution between the urban and rural sectors of the northeast.

