

3.1 GENERAL

The Chapter presents various considerations that the lighting designer must recognize in the early stages of design. Some of these issues are discussed during the Scoping Meeting, but most of them must be established by Field Inspection and Public Hearing. Reference the [TEDM Section 1 – General, Chapter 2, 2.2](#) for a complete discussion of the Project Development Process.

3.2 LIGHTING WARRANTS

The TE/L&D Manager will determine the need to perform lighting warrants.

The primary purpose of warrants is to assist administrators and designers in evaluating locations for lighting needs and selecting locations for installing lighting. Warrants give conditions that should be satisfied to justify the installation of lighting. Meeting these warrants does not obligate the state or other agencies to provide lighting or participate in its cost. Conversely, local information in addition to that reflected by the warrants, such as roadway geometry, ambient lighting, sight distance, signing, crash rates, or frequent occurrences of fog, ice, or snow, may influence the decision to install lighting. The design stage can begin once the decision has been made to install new lighting.

The AASHTO Roadway Lighting Design Guide provides three separate warrants for freeway lighting:

- Continuous Freeway Lighting
- Complete Interchange Lighting
- Partial Interchange Lighting

Several cases are described under each lighting warrant. The cases discuss warranting conditions based on average daily traffic volumes, roadway geometry, and night-to-day accident rates.

The National Cooperative Highway Research Program (NCHRP) Report #152 “Analytical Approach to Illumination Warrants” may also be used for determining the priority of freeway lighting projects. This warranting procedure is the primary method used by VDOT. It is heavily weighted on night-to-day accident data. For new road construction, this data must be based on similar roadways found within the State.

3.3 SELECTION OF POLE AND LUMINAIRE TYPES

The VDOT Regional Traffic Engineer may have a general concept on how the facility should be lighted. Together with the Resident Engineer, they best understand the requirements of the residents and the flow of traffic through the facility. The designer should review lighting options with the TE/L&D Manager and local VDOT personnel prior to the initial selection of light pole and luminaire equipment.

A detailed discussion of standard VDOT lighting equipment is provided in [Appendix VB-2](#). The following items should be considered when selecting poles and luminaires: