October 1, 1993

TRAFFIC ENGINEERING DIRECTIVE

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SUBJECT: GUIDELINES FOR HIGHWAY LIGHTING

In general, the West Virginia Division of Highways will follow the latest edition of the AASHTO publication, "An Informational Guide For Roadway Lighting" and "NCHRP Report 152, Warrants for Highway Lighting" in regard to warrants for highway lighting and design values. The major goal of these lighting guidelines will be to balance the objectives of providing nighttime illumination where it is needed versus the need to limit energy consumption and continuing maintenance costs.

As further amplification of where highway lighting will be installed, the following guidelines are set forth:

1. **The need for continuous roadway lighting on full-control access facilities will be evaluated in accordance with warranting conditions for lighting for freeways in the above-mentioned AASHTO and NCHRP publications. The following full and partial controlled access facilities are either lighted or the lighting has been included in the construction of the facility:**

    a. **Charleston Interstate System**
    b. **I-70 in Wheeling**
    c. **I-470 in Wheeling**
    d. **WV Route 2 between I-70 and I-470 in Wheeling**
    e. **US Route 50 from Clarksburg to I-79**
    f. **South Side Expressway in Charleston**
    g. **US 119 from MacCorkle Avenue to Davis Creek Interchange**
    h. **US 22 in Weirton from Ohio State Line through Main St. Interchange (WV 2 north).**
    i. **Greenbrier Street in Charleston**

Other segments will be evaluated as conditions arise in accordance with the AASHTO and NCHRP publications.

2. **For individual interchanges along full and partial-controlled access facilities, the**

need to install lighting will be evaluated in accordance with AASHTO warrants for interchanges under design. The AASHTO warrants will be reviewed to determine if lighting at the interchange should be included as part of the initial construction. If not included in the initial construction phase, the interchanges will be evaluated on a one-by-one basis in accordance with the NCHRP Report 152 after they have been open to traffic for a sufficient amount of time.

3. **In regard to lighting of intersections on partial-control access facilities, the lighting will generally be limited to intersections and the need will be determined based on NCHRP Report 152.**

4. **In regard to lighting on non-control access facilities, either continuous or intersection lighting, the need will be evaluated in accordance with NCHRP Report 152. If the existing lighting has to be removed in the course of construction of the roadway within a municipality, the Division will replace the lighting in accordance with the design values given in the AASHTO Guide.**

5. **Normally, lighting of interchanges will consist of safety lighting only. Safety lighting includes lighting the mainline exit ramp area, the terminal areas of the ramps and crossroad, closely spaced adjacent intersections on the crossroad and any other decision points within the interchanges which may involve channelization. In general, the safety lighting will be directed to lighting of areas where the driver has to make a decision in choosing his lane. Acceleration lanes will not be lighted, unless special conditions exist.**

6. **At the intersection of ramps and crossroads, special consideration shall be given to lighting these intersections, even though the interchange may not warrant lighting. This lighting will be evaluated in accordance with NCHRP Report 152.**

7. **At rural intersections which are being signalized by the Division, minimal highway lighting will normally be provided by the joint use of signal poles at any intersection that does not already have highway lighting in the area.**

8. **Rest areas and weigh stations on the Interstate System will be lighted in accordance with AASHTO Guide.**

9. **Pedestrian underpasses constructed by the Division will be lighted if they are of sufficient length. For overpasses, steps and sidewalks constructed by the Division, lighting will be provided if the adjacent area has or will have lighting.**

10. **Bridges of sufficient length or magnitude to be considered as separate projects will**

be evaluated for lighting as follows:

a. Bridges in a built-up area where there is existing lighting at both ends will be lighted.

b. Bridges between areas where there is existing lighting at one end but not at the other end, will be evaluated in accordance with the AASHTO Guide. If the lighting is not warranted, then provision for future lighting will be installed as part of the bridge construction.

c. Bridges in the area where there is no existing adjacent lighting in the area will be evaluated based on the probability of development in the adjacent area or on special conditions which might justify future lighting. If lighting is not justified at the time of construction but it can be demonstrated that there is a high probability of the need for future lighting, then provisions for future lighting will be contained in the initial construction of the bridge.

The foregoing has presented general guidelines in determining where lighting will be installed by the Division. The design values will generally be those found in the AASHTO Guide and will reflect good engineering practices in the choice of support systems.

The Division will use high-pressure sodium illumination for this highway lighting in order to reduce energy consumption. Also, the Division will pursue a policy to convert the existing mercury-vapor highway lighting to the high-pressure sodium lighting as conditions allow.

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