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SECRETARY

MEMORANDUM

To: Jeffrey Van Horn, Director of Economic Development Coordination

Via: Mark Luszcz, Chief Engineer ML

Via: Maureen Kelley, Deputy Director, Design

From: Peter Haag, Chief of Traffic Engineering

Date: January 2, 2026

Subject: Subdivision Entrance Lighting

Section 5.15 of the 2019 Development Coordination Manual (DCM) provides guidance when lighting may be required for an entrance or offsite improvement, and the process for the lighting design to occur. Per the Federal Highway Administration, lighting is a proven safety countermeasure that can be applied to roadway segments, intersections, and pedestrian crossings to decrease nighttime crashes by 28 – 42% depending on the facility type. Based on requests received by DelDOT to provide roadway lighting at all residential subdivision entrances, the DelDOT Traffic Engineering Section is recommending this technical memorandum expand upon Section 5.15 of the DCM as follows:

Lighting Design and Photometric Analysis Guidance

Lighting is required for all new entrances to residential subdivision developments (including apartments, condominiums, and mixed-use developments with a residential component) which require auxiliary lanes (left turn lanes, right turn lanes, or bypass lanes) located along state-maintained roadways, regardless of the number of housing units. However, hammerhead intersections are excluded from the guidance provided in this memorandum while roundabouts are subject to following DelDOT's *Lighting Policy.* Lighting provided at a new subdivision entrance shall be paid for by the developer, including the lighting fixtures, analysis, design, and installation. Any maintenance and operating costs associated with the lighting are discussed in more detail in the following sections.

Lighting photometric analysis and design for an entrance shall be performed in accordance with applicable guidelines and standards contained in DelDOT's Lighting Policy. The developer's engineer will be responsible for all components associated with lighting. DelDOT's Traffic Engineering Section or their representatives will only be responsible for reviewing and approving the analysis and design. At proposed entrance locations where lighting already exists, the developer shall evaluate the existing lighting to ensure it meets applicable criteria within DelDOT's *Lighting Policy*. If any deficiencies are identified, the developer shall be required to upgrade the lighting system to be compliant with DelDOT's Policy including, but not limited to, upgrading existing High Pressure Sodium (HPS) fixtures to Light Emitting Diode (LED) fixtures.

When designing the lighting, all fixtures provided at the entrance shall be LED fixtures. Every effort shall be made to utilize utility pole-based lighting, and standalone light poles shall be avoided. In locations where utility poles may not be readily available, coordination shall occur with the local utility company to determine if additional utility poles can be installed to accommodate the utility pole-based light fixtures. Any additional utility poles recommended shall be installed in accordance with DelDOT's Utility Regulation, outside of the clear zone, and within existing right-of-way or easement. In scenarios where the utility company is unable to install lights on nearby utility poles or the utility company cannot install new utility poles, the developer shall provide the proof of all communications and the written response from the local utility company that it is not possible to provide the utility pole-based lighting. In such scenarios, lighting will not be provided in that area, and no other standalone lighting will be required. All the communications and written responses shall be summarized in a section within the lighting report and copies provided in an Appendix of the lighting report.

When utility pole-based lighting is utilized at the entrance, the developer shall conduct a photometric analysis consistent with Chapter 4 of DelDOT's *Lighting Policy.* Referring to Chapter 4 of the Policy, the developer shall determine the area to be illuminated at the intersection by identifying if the location is a complex (presence of channelized turn lanes, separate turn lanes, etc.) or simple intersection. If the proposed entrance will tie in as an additional leg to an existing intersection (i.e. creating the fourth leg of an existing intersection), the area to be illuminated shall include all needed areas along each leg of the intersection. The developer shall also determine if existing lighting at another intersection or segment is located in close enough proximity to their proposed entrance to warrant continuous lighting along the roadway segment between the two locations using criteria in Section 4.A.4 of the Policy. In addition, the developer shall use Table 7 of the Policy to identify the recommended lighting levels required at the intersection based on the roadway (arterial, collector, local, etc.) and area (commercial, intermediate, or residential) classification.

Design Steps

Using the area to be illuminated and the recommended lighting levels, the developer shall conduct a photometric analysis at the intersection. The analysis shall identify the locations of utility-based fixtures as well as the fixture type to meet the recommended lighting levels within the areas to be illuminated. When identifying the fixture types to be installed, the wattage, lateral light distribution, mounting height, light loss factor, and arm length shall be determined. The developer shall coordinate with the utility company prior to the photometric analysis to ensure that

existing utility poles in the area can accommodate the recommended light fixture, identify the preferred mounting height, and determine the light fixtures used for the photometric analysis are available to the specific utility company. Any coordination with the utility company shall be documented in writing (email, meeting minutes, etc.) and shall be included with the lighting report. If utility poles need to be relocated as part of the project, the developer shall anticipate the new location of the utility poles in relation to the entrance lighting need and these locations shall be shown on the Entrance Plan. More detailed information pertaining to the photometric analysis and fixture criteria can be found in Section 4.C and 4.D of DelDOT's *Lighting Policy*.

It should be noted that the recommended lighting levels contained in Table 7 of DelDOT's Policy may not always be feasible based on limited number of mountable pole locations, physical constraints to place new utility poles, and roadway features such as wide intersections. In such cases, the developer shall coordinate with the DelDOT Traffic Engineering Section to document these constraints and determine appropriate light levels and uniformity ratios to be utilized as well as if the intersection can be treated as a simple intersection instead of a complex intersection when determining the area to be illuminated. For lighting systems that cannot meet the requirements outlined in the Lighting Policy, the limiting factors shall be documented in the lighting report.

After the photometric analysis has been completed by the developer, it shall be submitted through DelDOT's Project Process review and follow DelDOT's *Traffic Design Manual* and *Lighting Policy*. Once approved through DelDOT's Project Process review, the photometrics, location of utility poles, types of light fixture and lighting distribution shall be submitted through the Planning and Development Coordination Application (PDCA) under the *Traffic Design Signal/Lighting/ITMS Plans* Submission type. All approved lighting plans will need to be incorporated into the Entrance Plans prior to Entrance Plan Approval. Coordination and confirmation from the utility company regarding the use of the existing utility poles, light fixture types, and preferred mounting heights shall also be obtained prior to Entrance Plan Approval. A note shall be included on the associated Record Plan and Entrance Plan that reads "*All the lighting fixtures shall be installed during entrance construction. If the build out of the development is separated into multiple phases, all lighting fixtures shall be installed in the 1st phase of entrance construction. Any cost to furnish, install, maintain, repair, or replace the lighting fixtures shall be the responsibility of the developer. The monthly cost for the lease lighting (i.e. Tariff) as well as any cost associated with maintenance and coordination shall be the sole responsibility of the developer, HOA, Maintenance Corporations, and/or the homeowners. The developer may also coordinate with the associated County and Lighting District, if applicable, for an alternative funding path. Neither DelDOT nor the Utility Company will be responsible for any of these costs. If the HOA or Maintenance Corporation dissolves in the future, all maintenance and financial obligations are the responsibility of the individual homeowners to ensure the lease lighting is continually activated through the utility company.*"

Once the Entrance Plan has been approved by DelDOT, the developer shall coordinate with the local electric company to provide and install the identified utility pole-based lighting fixtures. Any cost to furnish, install, maintain, or replace the lighting fixtures shall be the sole responsibility of the associated parties described in the Record Plan and Entrance Plan notes in the previous paragraph. DelDOT will not be responsible for any of these costs.