FDOT Design Manual (FDM) 231.3.6.2, Daytime Underdeck Lighting for Bridges

Brief summary and description of changes

The Department is adding statewide requirements for daytime underdeck lighting. This lighting helps to improve driver visibility for unusually long underpasses that block daylight and create tunnel-like conditions. The new FDM requirements will direct designers through the necessary portions of the lengthy national guidance in ANSI/IES RP-22-11 "Tunnel Lighting". This new FDM language also establishes underpass length thresholds for when the complex analysis is not needed, so this will save design time where consideration isn't needed. Last, this new FDM section provides Lighting Plans requirements and design assumptions to further streamline the development process.

Are changes in line with promoting and making meaningful progress on improving safety, enhancing mobility, inspiring innovation, and fostering talent; explain how?

Safety, Mobility: *Daytime underdeck lighting provides safer conditions for drivers by removing the very dark entryway to large underpasses, also known as "the black hole effect." Per national guidance, this lighting improves visibility for safer navigation and reduced crashes in underpasses.*

Innovation: *Daytime underdeck lighting utilizes advanced 3D design software and adjustable LED lighting for large underpasses. This promotes use of new technology to optimize conditions for drivers.*

What financial impact does the change have? Pay items and consultant fees.

No financial impact is expected. Prior to this change, the Turnpike Design Handbook (TDH) already required daytime underdeck lighting, and other Districts were already installing this lighting based on their own judgement. This new FDM language provides a more focused and streamlined design approach for the Districts to follow. Additionally, underpasses less than 150 feet in length will not require daytime underdeck lighting, so this now saves cost by eliminating complex design consideration and installation for most underpasses.

Which offices does the change impact?

This Office of Design and Construction

What impacts to the Districts are anticipated?

Districts will benefit from clearer instruction for daytime underdeck lighting to assist and quicken their design process and decisions. Contractors will benefit from more consistent Lighting Plans produced.

Have District counterpart's comments been addressed?

Yes, this change has been communicated to all the District counterparts through the established review and comment feedback procedures.

Does the change shift risk and to who?

No risk is shifted. EORs remain responsible for their lighting designs as specified by FDOT.

What is the communication plan and schedule of events?

The Criteria Section of the Roadway Design Office has conducted its annual review for updates to the FDM. Internal reviews have been conducted with the C-Team, Roadway Design Office, Traffic

Engineering and Operations, District Design Engineers, District Consultant Project Management Engineers, and the District Roadway Design Engineers. This will also be shared with external industry and FHWA for review.

The following is the schedule for implementation:

- *The 2023 FDM will be published on or before November 1, 2022*
- *Training webinars will be provided for FDM revisions in December of 2022.*
- *The 2023 FDM will be effective for all projects beginning design in January of 2023*