# PETITION FOR DECLARATORY STATEMENT BEFORE THE FLORIDA BUILDING COMMISSION

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**Code Section on which the Declaratory Statement is sought:**

2010 Florida Building Code, Building Volume (FBC-B)
Chapter 16, Section 1609.1.1

**Background:**

Milton Engineering Consultants, P.A. (MEC) provides structural engineering design services including the design of foundations for manufactured light poles. The installed light pole assemblies (i.e. luminaires) generally consist of the pole itself and one or more lighting units attached either to the top of the pole or offset from the face of the pole using a bracket/arm component. These light pole assemblies are often used to provide street lighting along various public/private roadways, and site/security lighting for residential properties, commercial properties, parking lots and public amenities (such as parks, community centers, schools, etc.).

MEC is in the process of undertaking several light pole foundation design projects in Palm Beach County, Florida. These projects can generally be classified under one of the following project types:

- Type 1 Project: Luminaires provided for street lighting. These luminaires are typically situated along a roadway and are located within a public right-of-way.
- Type 2 Project: Luminaires provided for site lighting. These luminaires are typically situated in parking lots or around buildings and are located outside the public right-of-way.
- Type 3 Project: A combination of Types 1 and 2.

When calculating design wind loads for these three types of in-ground luminaire projects under the provisions of 2010 FBC-B Section 1609, MEC references Section 1609.1.1

Exception 7 which allows wind loads to be calculated in accordance with AASHTO LTS-4 *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*. However, MEC has been informed that this referenced AASHTO standard can only be used to determine wind loads for those luminaires situated in a public right-of-way (i.e. Type 1 Projects) and that wind loads for those luminaires outside the public right-of-way (i.e. Type 2 Projects) must be designed based on the provisions of a separate reference, namely ASCE7. Furthermore, for Type 3 Projects, two separate wind load designs must reportedly be provided (i.e. one using AASHTO LTS-4 for the "Type 1" portion, and one using ASCE7 for the "Type 2" portion), even if the luminaires in both portions of the project are identical.

MEC is submitting this petition to seek clarification on this issue in order to ensure that the building code is uniformly interpreted.

**Code-related provisions of 2010 FBC-B:**

## Chapter 1 - Scope and Administration

### SECTION 101 GENERAL

**101.2 Scope.**

The provisions of this code shall apply to the construction, *alteration*, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures. (emphasis added)

### SECTION 102 APPLICABILITY

**102.2 Building.**

The provisions of the *Florida Building Code* shall apply to the construction, erection, alteration, modification, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every public and private building, structure or facility or floating residential structure, or any appurtenances connected or attached to such buildings, structures or facilities. (emphasis added)

**102.4 Referenced codes and standards.**

The codes and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply. (emphasis added)

## Chapter 16 - Structural Design

### SECTION 1609 WIND LOADS

**1609.1 Applications.**

Buildings, structures and parts thereof shall be designed to withstand the minimum wind loads prescribed herein. Decreases in wind loads shall not be made for the effect of shielding by other structures. (emphasis added)

**1609.1.1 Determination of wind loads.**
Wind loads on every building or structure shall be determined in accordance with Chapters 26 through 30 of ASCE 7 or the provisions of the alternate all heights method in Section 1609.6. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered. (emphasis added)

**Exceptions:**

7. Designs using AASHTO LTS-4 Structural Specifications for Highway Signs, Luminaries (sic), and Traffic Signals. (emphasis added)

## Chapter 35 - Referenced Standards

This chapter lists the standards that are referenced in various sections of this document. The standards are listed herein by the promulgating agency of the standard, the standard identification, the effective date and title, and the section or sections of this document that reference the standard. The application of the referenced standards shall be as specified in Section 102.4. (emphasis added)

**AASHTO** American Association of State Highway & Transportation Officials
444 North Capitol Street N.W., Suite 249
Washington, DC 20001

| Standard reference number | Title | Referenced in code section number |
|---|---|---|
| LTS 4 | Structural Specifications for Highway Signs, Luminaires and Traffic Signals | 1609.1.1 |

**Questions:**

1. Does the 2010 FBC-B specify that the calculation of wind loads under Section 1609.1.1 Exception 7 applies solely to luminaires located within a public right-of-way?
2. Is it the intent of the 2010 FBC-B to limit the calculation of wind loads under Section 1609.1.1 Exception 7 solely to luminaires located within a public right-of-way?
3. If the answers to Questions 1 and 2 are both "No," are there any site-specific locations or conditions where the calculation of wind loads for luminaires would be disallowed under the provisions of the 2010 FBC-B Section 1609.1.1 Exception 7?

**Petitioner Comments:**

MEC recognizes that the referenced AASHTO standard was developed to address structural supports for highway-related signs, luminaires and traffic signals. MEC also

recognizes that the FBC-B was not developed to address the design of highways or highway-related structures, but rather the design of every public and private building/structure or any appurtenances connected or attached to such buildings/structures. Included in the FBC-B are references to site lighting, building lighting, exterior security lighting, parking area lighting, etc. MEC has found no language in the FBC-B stipulating different design criteria for such lighting if located within a public right-of-way as opposed to outside a public right-of-way. As such, it is MEC's opinion that if the FBC-B references the wind load provisions in an AASHTO "highway" standard, it is because the wind load design provisions in that standard are considered acceptable to use for the design of any similar building-related structures that fall within the "prescribed extent" of the referenced standard. AASHTO LTS-4 *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals* includes high-level lighting as well as lower-level "Pole Top Mounted Luminaires" and "Lighting Poles with Mast Arms," the latter two of which are similar in extent to those for which MEC is providing structural foundation design services. Considering the sheer magnitude of hurricanes and other severe storm events, it would seem unreasonable for the FBC-B to require wind loads on identical light poles within the same municipality to be calculated based on the wind load provisions of two different reference standards based simply on whether the pole was located inside or outside a public right-of-way line.

Sincerely,
**Milton Engineering Consultants, P.A.**

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