The Florida Senate

BILL ANALYSIS AND FISCAL IMPACT STATEMENT

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

Prepared By:	The Professional Staff of the Appropriations Subcommittee on Transportation, Tourism, and Economic Development
BILL:	PCS/SB 1412 (289006)
INTRODUCER:	Appropriations Subcommittee on Transportation, Tourism, and Economic Development; and Senator Perry
SUBJECT:	Traffic and Pedestrian Safety
DATE:	April 9, 2021
REVISED:	

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Price	Vickers	TR	**Favorable**
2.	McAuliffe	Hrdlicka	ATD	**Recommend: Fav/CS**
3.			AP	

Please see Section IX. for Additional Information:

COMMITTEE SUBSTITUTE - Substantial Changes

I. Summary:

PCS/SB 1412 seeks to address vehicular and pedestrian safety with respect to pedestrian crosswalks located at any point other than at an intersection with another public highway, street, or road, which are referred to as midblock crosswalks. The bill requires, before installation of a midblock crosswalk on a public highway, street, or road after October 1, 2021, a traffic engineering study to be conducted, signed, and sealed by a Florida licensed professional engineer which recommends the installation.

Notwithstanding any other law, the bill requires a midblock crosswalk:

- On a public roadway that has a posted speed limit of 30 miles per hour (mph) or more to conform to certain national standards and applicable Florida Department of Transportation (FDOT) standards and to include a pedestrian-facing sign containing language stating duties applicable to a pedestrian; and
- On a public roadway posted at 29 mph or less to include a pedestrian-facing sign containing language stating duties applicable to a pedestrian.

By October 1, 2022, the bill requires the FDOT to submit to the federal government a request for authorization to allow certain traffic control devices at midblock crosswalks that use yellow indications to be replaced by red indications. If the request is granted, the state, county, or municipality with jurisdiction, as appropriate, must replace all such traffic control devices having yellow indications with traffic control devices that use red indications within 12 months after the

date of federal authorization. If the request is denied, the jurisdictional entity must remove all such traffic control devices from each midblock crosswalk described in the bill by October 1, 2025.

By October 1, 2024, the entity with jurisdiction over a public roadway with a midblock crosswalk that is in existence on October 1, 2021, must ensure that the crosswalk is controlled by coordinated traffic control signal devices and pedestrian control signals as required under the bill. Alternatively, the entity with jurisdiction may remove any such existing crosswalk.

The bill also provides a finding that the act fulfills an important state interest.

The bill will likely have a significant negative fiscal impact to state and local governments to meet the requirements of the bill by October 1, 2024, for midblock crosswalks existing on October 1, 2021. See Section V. "Fiscal Impact Statement" for details.

The bill takes effect October 1, 2021.

II. Present Situation:

The MUTCD and FDOT Specifications

Traffic control signal devices provide for the control of vehicular and pedestrian traffic. They assign the right-of-way to various traffic movements and influence pedestrian and vehicular traffic flow. When properly designed such devices provide for the orderly movement of traffic, increase the traffic capacity of an intersection, reduce the frequency and severity of crashes, provide for predictable movement of traffic and pedestrians, and interrupt heavy traffic at intervals to permit vehicles and pedestrians to cross safely.[1]

The Manual on Uniform Traffic Control Devices (MUTCD) "is a compilation of national standards for all traffic control devices, including road markings, highway signs, and traffic signals." States are currently required to adopt the 2009 edition of the MUTCD (which includes revisions and interim approvals) as the legal state standard for traffic control devices.[2] Florida law requires the FDOT to adopt the MUTCD as the uniform system of traffic control devices for use on the streets and highways of this state.[3] The FDOT has additional specifications that apply to given roadway markings, highway signs, and traffic signals and that are recognized by the Federal Highway Administration.[4]

The MUTCD provides transportation engineers with information necessary to make appropriate decisions regarding the use of all traffic control devices. There are both provisions that are

[1] *See* Federal Highway Administration (FHWA), *Manual on Uniform Traffic Control Devices for Streets and Highways*, Part 4: Highway Traffic Signals, Section 4B.03, available at https://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf (last visited April 7, 2021).
[2] FHWA, under *Current Edition of Manual on Uniform Traffic Control Devices for Streets and Highways*, available at https://mutcd.fhwa.dot.gov/index.htm (last visited March 27, 2021).
[3] Section 316.0745, F.S.
[4] *See* FHWA, *MUTCDs & Traffic Control Devices Information by State*, *Florida*, available at https://mutcd.fhwa.dot.gov/resources/state_info/florida/fl.htm (last visited March 20, 2021), and Fla. Admin. Code R. 14-15.010 (2012).

mandatory and provisions that require the use of engineering judgment. Part 4 of the MUTCD addresses highway traffic signals and recites a basic tenant found throughout the MUTCD: "The selection and use of traffic control signals should be based on an engineering study of roadway, traffic, and other conditions." Further, "[e]ngineering judgment should be applied in the review of operating traffic control signals to determine whether the type of installation and the timing program meet the current requirements of all forms of traffic."[5]

Midblock Crosswalks

Crosswalks at any location other than at an intersection are referred to as "midblock" crosswalks, crossings, or locations in the MUTCD (and in this analysis).[6] The design treatment of traffic control and pedestrian signals takes various forms and can range, for example, from a flashing yellow pedestrian crossing signal to use of full (red, yellow, and green displays) traffic control signals.

The MUTCD contains a number of provisions relating to installing traffic control signals at midblock crosswalks. For example, these provisions direct the entity with jurisdiction over the crosswalk to consider detailed criteria related to:

- The distances to the nearest traffic control signal, side streets, and highways;[7] and
- The number of vehicles using and the number of pedestrians crossing the street per hour.[8]

The MUTCD contains other applicable provisions. However, the focus of the MUTCD is that installation of a traffic control signal at any location, including midblock locations, must be based on an engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the particular location. The same focus is present in the MUTCD with respect to related pedestrian signals at any location, including midblock locations. "The design and operation of traffic control signals shall take into consideration the needs of pedestrians as well as vehicular traffic."[9]

Pedestrian Hybrid Beacons

A pedestrian hybrid beacon, also known as a high-intensity activated crosswalk beacon (HAWK beacon), is a special type of hybrid beacon used to warn and control traffic at an unsignalized location to assist pedestrians in crossing a street or highway at a marked crosswalk. A HAWK beacon can be installed for at a location that:

- Does not meet conditions to install a traffic signal; or
- Meets conditions to install a traffic signal but a decision is made to not install a traffic control signal.

If used, HAWK beacons must be used in conjunction with signs and pavement markings to warn and control traffic at locations where pedestrians enter or cross a street or highway. A HAWK

[5] *Supra* note 1 at Section 4B.02.
[6] *See also* s. 316.003(16)(b), F.S., which defines a crosswalk, in part, as any portion of a roadway at an intersection *or elsewhere* distinctly indicated for pedestrian crossing by lines or other markings on the surface.
[7] *Supra* note 1 at Section 4D.01.
[8] *Supra* note 1 at Section 4C.05.
[9] *Supra* note 1 at Section 4D.03.

beacon may only be installed at a marked crosswalk.[10] The device uses a sequence of both yellow and red indications, providing yellow indications upon pedestrian activation to warn approaching traffic and then red indications to warn traffic to stop.[11] Indications facing the pedestrian include a signal that displays a stead upraised hand to indicate "don't walk" (on when the traffic signal is flashing yellow) and a walking person to indicate "walk" (on when the traffic signal is steady red).

Rectangular Rapid-Flashing Beacons (RRBFs)

Warning beacons may be used as emphasis for midblock crosswalks.[12] The standard for these beacons are circular yellow lights. According to the FDOT, on the state highway system midblock crosswalks are either "controlled (pedestrian traffic signal or pedestrian hybrid beacon) or uncontrolled traffic control devices such as pedestrian-activated flashing beacons, rectangular rapid flashing beacons (RRFBs), in-roadway lights, in-street signs, pedestrian warning signs, and/or pedestrian crosswalk markings only."[13] Concerns have been raised about RRFBs at midblock crosswalks which are activated by a pedestrian wishing to cross a roadway, but which do not use red indications to warn approaching vehicular traffic of pedestrian presence and to come to a stop.

In contrast to pedestrian hybrid beacons[14] that use red indications, an RRFB is "a traffic control device consisting of two rapidly and alternately flashing rectangular *yellow* indications having LED array-based pulsing light sources that function as a warning beacon."[15] The FHWA has granted the FDOT interim approval for optional use of certain pedestrian-activated RRFBs at uncontrolled marked crosswalks, including midblock crosswalks, to supplement standard pedestrian and school crossing warning signs, but under specifically detailed conditions.[16] Most

[10] *Supra* note 1 at Section 4F.01.
[11] *Supra* note 1 at Figure 4F-3, showing a graphic of the sequence of a pedestrian hybrid beacon.
[12] *Supra* note 1 at 4L.03. "Warning Beacons that are actuated by pedestrians, bicyclists, or other road users may be used as appropriate to provide additional warning to vehicles approaching a crossing or other location."
[13] *See* FDOT *2021 Agency Legislative Bill Analysis HB 1113*, updated March 11, 2021, at p. 3 (on file in the Senate Transportation Committee).
[14] A pedestrian hybrid beacon is a special type of hybrid beacon used to warn and control traffic at an unsignalized location to assist pedestrians in crossing a street or highway at a marked crosswalk. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants, or at a location that meets traffic signal warrants but a decision is made to not install a traffic control signal. If used, pedestrian hybrid beacons must be used in conjunction with signs and pavement markings to warn and control traffic at locations where pedestrians enter or cross a street or highway. A pedestrian hybrid beacon may only be installed at a marked crosswalk. *Supra* note 1 at Section 4F.01. *See also* Figure 4F-3, showing a graphic of the sequence of a pedestrian hybrid beacon, which uses both yellow and red indications, providing yellow indications upon pedestrian activation to warn approaching traffic and then red indications to warn traffic to stop.
[15] FDOT, *Traffic Engineering Manual*, 2021, at *Treatments for Pedestrian Crosswalks at Midblock and Unsignalized Intersections*, Section 5.2 at 5.2.3, available at https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/traffic/trafficservices/studies/tem/tem-2021/traffic-engineering-manual.pdf?sfvrsn=c52cf4fb_0 (last visited March 27, 2021).
[16] *See* FHWA, *Interim Approval 21 – Rectangular Rapid-Flashing Beacons at Crosswalks*, March 20, 2018, available at https://mutcd.fhwa.dot.gov/resources/interim_approval/ia21/index.htm (last visited March 20, 2021). Interim approval is necessary because the "RRFB does not meet the current standards for flashing warning beacons as contained in the 2009 edition of the MUTCD, Chapter 4L, which requires a warning beacon to be circular in shape and either 8 or 12 inches in diameter, to flash at a rate of approximately once per second, and to be located no less than 12 inches outside the nearest edge of the warning sign it supplements. The RRFB uses rectangular-shaped high-intensity light-emitting-diode (LED)-based

relevantly, each RRFB unit must consist of two rapidly flashing rectangular-shaped *yellow* indications with an LED-array-based light source, designed, located, and operated in accordance with additional detailed requirements.[17]

The FHWA granted its approval based in part on a conclusion that the "RRFB offers significant potential safety and cost benefits because it achieves high rates of compliance at a low relative cost in comparison to other more restrictive devices that provide comparable results, such as full midblock signalization or pedestrian hybrid beacons."[18]

The FDOT advises that research and safety studies reflect beneficial results from use of RRFBs (and other uncontrolled traffic control devices) in midblock crosswalks and cites a current survey indicating that of 28 states responding, all allow the use of RRFBs at midblock crosswalks.[19]

Pedestrian and Driver Duties

In general, pedestrians are required by law to obey traffic control signal devices and pedestrian control signals.[20] If sidewalks are provided and no impediment exists to the pedestrian's use of it, a pedestrian is barred from walking on a roadway that is paved for vehicular traffic.[21] Otherwise, when practicable, pedestrians must walk only on the shoulder on the left side of the roadway in relation to the pedestrian's direction of travel, facing traffic that may approach from the opposite direction.[22] A pedestrian may not suddenly leave a curb or other place of safety and walk or run into the path of a vehicle which is so close that it is impossible for the driver to yield.[23] Between intersections at which traffic control signals are in place, a pedestrian may not cross a roadway at any place except at a marked crosswalk.[24] A pedestrian crossing a roadway at any point other than within a marked crosswalk must yield to vehicles.[25]

A driver of a vehicle must stop for a pedestrian who is walking in the crosswalk when either a traffic control signal or a signage directs the driver to stop. In the absence of a signal or signage, a driver must yield to a pedestrian who is on the half of the roadway on which the vehicle is traveling or when the pedestrian is approaching so closely from the opposite half of the roadway as to be in danger.[26] Every driver must exercise due care to avoid colliding with any pedestrian.[27]

III. Effect of Proposed Changes:

Section 1 cites the act as the "Sophia Nelson Pedestrian Safety Act."

---

indications, flashes rapidly in a combination wig-wag and simultaneous flash pattern, and may be mounted immediately adjacent to the crossing sign."

[17] *Id*. under *Conditions of Interim Approval*.

[18] *Id*. under *FHWA Evaluation of Results*.

[19] *Supra* note 12.

[20] Section 316.130(1) and (2), F.S.

[21] Section 316.130(3), F.S.

[22] Section 316.130(4), F.S.

[23] Section 316.130(8), F.S.

[24] Section 316.130(11), F.S.

[25] Section 316.130(10), F.S.

[26] Section 316.130(7), F.S.

[27] Section 316.130(15), F.S.

In December of 2019, 12-year-old Sophia Nelson was struck and killed by a vehicle while attempting to cross State Road A1A near Ellwood Avenue in Satellite Beach, using a midblock crosswalk. No criminal charges were brought against the driver due to a lack of any evidence that the driver was operating the vehicle in a dangerous or reckless manner. Sophia is survived by her parents, Mark and Jill Nelson, who have supported legislation relating to mid-block crosswalks to reduce driver confusion and increase pedestrian safety.[28]

Section 2 creates s. 316.0756, F.S., requiring, before installation of a midblock crosswalk on a public highway, street, or road after October 1, 2021, a traffic engineering study to be conducted, signed, and sealed by a Florida licensed professional engineer which recommends the installation. Notwithstanding any other law, the bill requires:

- A midblock crosswalk on a public highway, street, or road that has a posted speed limit of 30 miles per hour (mph) or more to conform to the requirements of chapters 4D, 4E,[29] and 4F[30] of the most recent MUTCD[31] and other applicable FDOT standards, manuals, and specifications and must include a pedestrian-facing sign containing language stating duties applicable to a pedestrian, as provided in ch. 316, F.S.
- A midblock crosswalk on a public highway, street, or road that has a posted speed limit of 29 mph or less to include a pedestrian-facing sign containing language stating duties applicable to a pedestrian, as provided ch. 316, F.S.

Additionally, the bill requires traffic control signal devices and pedestrian control signals at midblock crosswalks on roads with a posted speed limit of 30 mph or more to be coordinated with traffic control signal devices at intersections adjacent to the crosswalk. The traffic control signal devices at intersections adjacent to the crosswalk must be taken into consideration as provided in the most recent MUTCD and other applicable FDOT standards, manuals, and specifications.

By October 1, 2022, the bill requires the FDOT to submit to the federal government a request for authorization to allow yellow RRFB traffic control devices to be replaced by red RRFB traffic control devices. If the request is granted, the jurisdictional entity must replace all yellow RRFB traffic control devices at each midblock crosswalk described in the bill with red RRFB traffic control devices, within 12 months after the date of federal authorization. If the request is denied, the jurisdictional entity must remove all yellow RRFB traffic control devices from each midblock crosswalk described in the bill by October 1, 2025.

By October 1, 2024, the entity with jurisdiction over a public highway, street, or road with a midblock crosswalk that is in existence on October 1, 2021, shall ensure that the crosswalk is controlled by coordinated traffic control signal devices and pedestrian control signals as required

---

[28] *See* Florida Today, *Sophia Nelson's family forgives driver in fatal A1A crosswalk crash in Satellite Beach*, February 27, 2020, available at https://www.floridatoday.com/story/news/2020/02/27/sophia-nelsons-family-forgives-driver-fatal-a-1-a-crosswalk-crash-satellite-beach/4895616002/ (retrieved March 27, 2021).

[29] *For example, see supra* note 1 at Figure 4D-2 and Figure 4E-1. These are the traffic control signals with Red/Yellow/Green light displays and the Walk/Don't Walk pedestrian signals customarily seen at intersections.

[30] *For example, see supra* note 1 at Figure 4F-3, showing a graphic of the sequence of a pedestrian hybrid or HAWK beacon.

[31] The "most recent" MUTCD is the 2009 edition. *See supra* note 4.

under the bill. Alternatively, the entity with jurisdiction may remove any such existing crosswalk.

According to the FDOT, both controlled and uncontrolled midblock crosswalks on the state highway system are "typically justified and installed as a result of a signed and sealed traffic engineering or safety study." To meet the requirements of the MUTCD and the FDOT's standards, a minimum of 133 pedestrians in the peak hour must be present to justify a fully signalized midblock crosswalk. "This requirement typically would not be met for the majority of existing uncontrolled [midblock crosswalks], and therefore the [midblock crosswalks] would be removed from the roadway."[32]

To implement the bill, the FDOT's efforts would be limited to sites on the state highway system. The FDOT states that because it has few, if any, midblock crosswalks on state roads with a posted speed limit of less than 30 mph, the bill would require removal or retrofit of most, if not all, midblock crosswalks on state roads.[33]

Section 3 includes a Legislative finding and declaration that the act fulfills an important state interest.

The bill takes effect October 1, 2021.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

Article VII, s. 18(a) of the Florida Constitution provides that no county or municipality shall be bound by any general law requiring such county or municipality to spend funds or to take an action requiring the expenditure of funds unless the Legislature has determined that such law fulfills an important state interest and unless, among other exceptions, the expenditure is required to comply with a law that applies to all persons similarly situated, including the state and local governments. The bill applies to both state and local governments and includes a legislative determination that it fulfills an important state interest as required by the Florida Constitution.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

D. State Tax or Fee Increases:

None.

[32] *Supra* note 12 at p. 6.
[33] *Id.*

E. Other Constitutional Issues:

None identified.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

Unknown.

C. Government Sector Impact:

Essentially the bill requires midblock crosswalks on roadways with speed limits of 30 mph or higher to be changed to full signal, HAWK beacon, or removed.

The number, and the design and treatment, of midblock crosswalks on local roads is unknown. The bill presents an indeterminate but likely significant, negative fiscal impact to counties and municipalities responsible for studying, retrofitting, or removing midblock crosswalks in accordance with the bill's requirements. For midblock crosswalks in existence on October 1, 2021, the local governments have until October 1, 2024, to meet the requirements of the bill.

The FDOT provided the following estimates with respect to midblock crosswalks on the state highway system:[34]

- Controlled midblock crosswalks:
  - Total with traffic signals = 7
  - Total with pedestrian hybrid beacons = 15
- Uncontrolled midblock crosswalks:
  - Total with warning signs and pavement markings only = 83
  - Total with yellow circular flashing beacons = 5
  - Total with Yellow RFRBs = 231

For midblock crosswalks in existence on October 1, 2021, the FDOT has until October 1, 2024, to meet the requirements of the bill. With respect to cost, prior to the addition of HAWK beacons to the bill, the FDOT estimated a total cost of approximately $14.9 million to study, retrofit, or remove midblock crosswalks on the state highway system by October 1, 2024. The FDOT also estimated $159,000 in annual recurring costs.[35] With the addition of HAWK beacons, the estimated cost is not yet known, but is expected to be higher than originally estimated.

[34] *Supra* note 12 at pp. 4-5.
[35] *Id.* at p. 9. *See also* pp. 8-9 for a breakdown of the estimated cost.

The costs to state and local governments to meet the requirements of the bill related to upgrade of midblock crosswalks with yellow indications upon federal authorization is indeterminate at this time. If the federal authorization occurs, the upgrades must happen within 12 months; if the federal authorization is denied, then the traffic control devices at each midblock crosswalk must be removed by October 1, 2025.

VI. Technical Deficiencies:

None.

VII. Related Issues:

The FDOT advises:

- Pedestrians would have significantly fewer locations to cross state roads and only be able to legally cross at intersections. Pedestrian travel times may increase generally and specifically at locations retrofitted to full pedestrian traffic signals near adjacent signalized intersections due to the required traffic signal coordination. Connectivity between pedestrian "generators" and "attractors," including some schools, may be disrupted.
- On roads with one or more midblock crosswalks, vehicle delay may decrease. However, removing midblock crosswalks and associated countermeasures may increase pedestrian crashes and result in increased pedestrian fatalities and serious injuries. For uncontrolled midblock crosswalks replaced with a pedestrian traffic signal, fatal and serious injury pedestrian crashes may decrease, but less serious rear-end vehicle crashes typically increase with installation of a traffic signal.[36]

VIII. Statutes Affected:

This bill creates section 316.0756 of the Florida Statutes.

IX. Additional Information:

A. Committee Substitute – Statement of Substantial Changes:
(Summarizing differences between the Committee Substitute and the prior version of the bill.)

CS by Appropriations Subcommittee on Transportation, Tourism, and Economic Development on April 8, 2021:
The committee substitute specifies that the required traffic engineering study must not only be conducted by a Florida-licensed professional engineer but also signed and sealed by that engineer; adds that midblock crosswalks must also conform with MUTCD chapter 4F relating to pedestrian hybrid beacons; and clarifies that coordination of signals and crosswalks must be taken into consideration as provided in FDOT standards and manuals as well.

[36] *Id.*

B. Amendments:

None.