HOUSE OF REPRESENTATIVES STAFF ANALYSIS

BILL #: CS/HB 357 Traffic Safety on State Roads
SPONSOR(S): Transportation & Ports Subcommittee; Plasencia and others
TIED BILLS: **IDEN./SIM. BILLS:** CS/SB 522

REFERENCE	ACTION	ANALYST	STAFF DIRECTOR or BUDGET/POLICY CHIEF
1) Transportation & Ports Subcommittee	11 Y, 0 N, As CS	Johnson	Vickers
2) Transportation & Economic Development Appropriations Subcommittee			
3) Economic Affairs Committee			

SUMMARY ANALYSIS

The bill, cited as "Chloe's Law," requires the Department of Transportation (DOT), by June 30, 2018, to install roadside barriers to shield bodies of water contiguous with state roads where motor vehicle accidents resulting in death due to drowning occurred between July 1, 2006, and July 1, 2016. The bill provides an exception to the requirement when DOT's chief engineer determines, based on engineering principles, that a barrier would increase the injury to motorists traveling on the adjacent state road.

The bill also requires the DOT to review all motor vehicle accidents resulting in drowning in a water body if such accidents between the same dates. DOT is required to submit a report, which must provide recommendations regarding any necessary changes to state laws and to the DOT's rules to enhance traffic safety.

There is expected to be a negative fiscal impact to DOT associated with the installation of roadside barriers; however, the amount is indeterminate.

The bill has an effective date of July 1, 2016.

FULL ANALYSIS

I. SUBSTANTIVE ANALYSIS

A. EFFECT OF PROPOSED CHANGES:

Current Situation

Florida reportedly leads the nation in drowning deaths associated with motor vehicle accidents. This result may be partly explained by the larger number of miles of road with water frontage in Florida relative to other states. Nonetheless, according to one review of federal crash data during the five-year period from 2008-2012, 49 people drowned inside vehicles in Florida. Texas followed with 18 deaths, 14 in Indiana, and 10 each in Louisiana and Arizona. And that number is underestimated, according to a study by the National Highway Traffic Safety Administration (NHTSA). The NHTSA study found that during 2004-2007, an average of 57 deaths occurred in each of those years in Florida.[1] This difference is attributed to researchers' having included in the study, in addition to crash records, death certificate records that revealed vehicle drownings not recorded as such by law enforcement.

While current law does not appear to specifically address the installation of guardrail in any fashion, the DOT does adhere to published engineering principles with respect to "canal hazards." Whether these standards apply to water bodies that do not fit the definition of a canal hazard is unclear.

Existing DOT Requirements

Research reveals no current statutory provision relating to guardrail installation along water bodies that are contiguous with state roads. However, the DOT's 2016 Plans Preparation Manual (PPM)[2] does define "canal hazard" as follows:

> A canal hazard is defined as an open ditch parallel to the roadway for a minimum distance of 1000 feet and with a seasonal water depth in excess of 3 feet for extended periods of time (24 hours or more).[3]

The PPM also addresses "clear zones," which are defined as the amount of recoverable area provided beyond the traveled way, and which include shoulders and bike lanes. A clear zone is intended to provide "an opportunity for an errant vehicle to safely recover." The PPM generally prohibits aboveground fixed objects, water bodies, and non-traversable slopes[4] in the clear zone.[5] The required clear zone is dependent upon the type of roadway facility and the design speed.[6]

DOT advises that water bodies greater than three feet are treated as roadside hazards and must be outside the clear zone, if possible.[7]

The PPM contains special lateral offset[8] requirements that apply to canal hazards that exceed standard clear zone distances. Generally, the minimum required distances are:

- Not less than 60 feet for flush shoulder roadways with design speeds of 50 mph or greater.
- Not less than 50 feet for flush shoulder roadways with design speeds less than 50 mph.

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[1] See the Orlando Sentinel article: http://www.orlandosentinel.com/news/os-cars-crash-into-lakes-20141108-story.html. Last visited January 16, 2016.

[2] The PPM recites that it "sets forth geometric and other design criteria, as well as procedures, for Florida Department of Transportation (FDOT) projects. The information contained herein applies to the preparation of contract plans for roadways and structures." *See* the FDOT's website, heading "Introduction": http://www.dot.state.fl.us/rddesign/PPMManual/2016PPM.shtm. Last visited January 13, 2016.

[3] *See* the FDOT's website, heading "Chapter 4," subheading "4.3.2:" http://www.dot.state.fl.us/rddesign/PPMManual/2016PPM.shtm. Last visited January 13, 2016.

[4] A non-traversable slope is classified as a slope that is rough, obstructed, or slopes steeper than a 1:3 ratio. *Supra* note 4, subheading "4.2.2" and "4.2.3."

[5] *Supra* note 4, subheading "4.2.2" and "4.2.3."

[6] *See* the FDOT's SB 522 bill analysis, July 1, 2016, at p. 2. (On file in the Senate Transportation Committee.)

[7] *Supra* note 6.

[8] A canal hazard lateral offset is the distance from the edge of the travel lane, auxiliary lane, or ramp to the top of the canal side slope nearest the road. *Supra* note 2.

- Not less than 50 feet for curb or curb and gutter roadways.[9]

If a canal hazard cannot be located outside the required clear zone, the canal hazard must be shielded.[10] The PPM provides the following instruction in such cases:

> Shield the canal hazard with an approved roadside barrier when the required minimum lateral offset cannot be met. Locate barrier as far from the travel way as practical. When shielding canal hazards locate the barrier outside of the clear zone where possible. Locate guardrail no closer than 6 feet from the canal front slope and place high tension cable barrier no closer than 15 feet from the canal front slope.[11]

DOT's Previous Study and Conclusions

The Department advises[12] the canal hazard criteria contained in the PPM were incorporated following a study conducted between February 2013 and July 2014, based on crash data from 2003 through 2011.[13] The study included cost-benefit analyses of shielding parallel water bodies of various lengths and offset distances from the roadway for selected roadway types and traffic volumes, the findings of which "show that shielding water bodies based on DOT's current offset clearance requirements in most cases is cost beneficial and/or results in a reduction in societal crash costs."[14]

The DOT concluded that its criteria for shielding canal hazards are reasonable.[15] Further, the DOT concluded:

> A benefit cost analysis shows that increasing the clearance requirement from 60 feet to 80 feet on limited access roadways may be cost beneficial. However, such an increase may not be warranted given the following:
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> - Actual crash experience does not indicate increasing the clearance requirement will result in significant benefit.
> - Increasing the clearance requirement in certain cases may result in higher crash costs due to the presence of additional barriers.
> - None of the four states interviewed in this study (Texas, Louisiana, Minnesota, and Michigan) have clearance requirements as stringent as Florida's current requirements.
>
> The 1000' length definition should be retained.
>
> - A cost benefit analysis indicates shielding parallel lengths shorter than 1000 feet is generally not cost beneficial. The exception is on high speed volume limited access roadways. Yet these type roadways had no fatal crashes into parallel water bodies less than 1000' in length from 2007 through 2011.
> - Applying the criteria to water bodies less than 1000' may result in higher crash costs due to the presence of additional barriers.[16]

Barrier Type Selection

The Department indicates that guardrails are not the only potential way to shield water hazards.[17] A number of different types of barriers are reflected in the DOT's PPM. The PPM instructs as follows:

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[9] *Supra* note 3.
[10] *Supra* note 6.
[11] *Supra* note 3.
[12] *Supra* note 6
[13] *See* the FDOT documentation, "*A Re-examination of FDOT Criteria for Shielding Canal Hazards."* (On file in the Senate Transportation Committee.) The document reflects an extensive review of the history of the FDOT's design criteria since it was first established in 1965.
[14] *Id.*, at "Task 5 – Benefit Cost Analysis."
[15] *Id.*, at "Task 6 – Conclusions and Recommendations."
[16] *Id.*
[17] *Supra* note 6, at p. 4. (On file in the Senate Transportation Committee.)

> The evaluation of numerous factors is required to ensure that the appropriate barrier type is selected for a given application. Provide consideration for the following factors when evaluating each particular site:
> 1. Barrier Placement requirements (see Section 4.4.6)
> 2. Traffic characteristics (e.g. vehicles types/percentages, volume, and growth)
> 3. Site characteristics (e.g. terrain, alignment, geometry, access facility type, access locations, design speed, etc.)
> 4. Expected frequency of impacts
> 5. Initial and replacement/repair costs
> 6. Ease of maintenance
> 7. Exposure of workers when conducting repairs/maintenance
> 8. Aesthetics[18]

Further, the PPM provides the following guidance:

> The evaluation of Roadside Safety is highly dependent on site specific conditions and constraints which are unique to a given situation. Therefore the determination as to when shielding is warranted for [a] given roadside feature must be made on a case-by-case basis, and generally requires engineering judgment. It should be noted that the installation of roadside barriers presents a hazard in and of itself, and as such, the designer must analyze whether or not the installation of a barrier presents a greater risk than the feature it is intended to shield.[19]

Application to Water Bodies Other Than Canal Hazards
As previously noted, whether the provisions of the PPM applicable to canal hazards, and shielding of such hazards, are also applicable to other water bodies, such as ponds, is unclear. To illustrate, in the evaluation of roadside hazards, the PPM recommends barriers "when hazards exist within the clear zone, hazards cannot be cost effectively eliminated or corrected, and collisions with the hazards are more serious than collisions with the barriers."[20]

When listing conditions within the clear zone that are normally considered more hazardous than a roadside barrier, "canals, ponds, and other bodies of water (*other than parallel ditches*)"[21] are included. Thus, it appears that water bodies may exist that do not meet the definition of a canal hazard, defined in part as an "open ditch parallel to the roadway."

Proposed Changes
The bill creates s. 335.085, F.S., to be cited as Chloe's Law,[22] requiring DOT, by June 30, 2018, to install roadside barriers to shield water bodies contiguous with state roads where a death due to drowning resulted from a motor vehicle accident in a vehicle departed the adjacent state road between July 1, 2006, and July 1, 2016. This requirement does not apply to any location at which DOT's chief engineer determines, based on engineering principles, that installation of a barrier would increase the risk of motorists traveling on the adjacent state road..

In addition, the bill requires the DOT to review all motor vehicle accidents that resulted in death due to drowning in a water body contiguous with a state road which occurred during the same period. DOT is required to use reconciled crash data from the Department of Highway Safety and Motor Vehicles and submit a report to the Senate President and House Speaker by January 3, 2017, providing recommendations for any necessary changes to state laws and the DOT's rules to enhance traffic safety.

The bill has an effective date of July 1, 2016.

[18] *Supra* note 3, subheading "4.4.5."
[19] *Supra* note 4, subheading "4.4.7."
[20] *Supra* note 4, subheading "4.4.7.1."
[21] Emphasis added.
[22] Chloe Arenas was a 21-year old UCF student who died on June 28, 2015, when her car left the road and went into a bordering pond. See the Central Florida Future article: http://www.centralfloridafuture.com/story/news/2015/07/09/friends-family-petition-chloes-law-to-protect-drivers/29930455/. Last visited January 13, 2016.

B. SECTION DIRECTORY:

Section 1 Creates s. 335.085, F.S., relating to the installation of roadside barriers along certain water bodies contiguous with state roads.

Section 2 Requires DOT to review certain motor vehicle accidents and submit a report.

Section 3 Provides an effective date.

II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT

A. FISCAL IMPACT ON STATE GOVERNMENT:

1. Revenues:

None.

2. Expenditures:

The installation of roadside barriers along certain water bodies contiguous with state roads is expected to have a negative impact to DOT. However, without knowing the details as to what is required regarding roadside barriers and the number of locations where barriers will be erected, the actual fiscal impact is indeterminate at this time.

B. FISCAL IMPACT ON LOCAL GOVERNMENTS:

1. Revenues:

None.

2. Expenditures:

None.

C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:

Any direct economic impact on the private sector is indeterminate.

D. FISCAL COMMENTS:

None.

III. COMMENTS

A. CONSTITUTIONAL ISSUES:

1. Applicability of Municipality/County Mandates Provision:

Not applicable. The bill does not appear to affect county or municipal governments.

2. Other:

None.

B. RULE-MAKING AUTHORITY:

None.

C. DRAFTING ISSUES OR OTHER COMMENTS:

None.

IV. AMENDMENTS/ COMMITTEE SUBSTITUTE CHANGES

On February 2, 2016, the Transportation & Ports Subcommittee adopted an amendment and reported the bill favorably as a committee substitute. The amendment changed the barrier requirement from a guardrail to a roadside barrier. The amendment also provides an exception to the requirement based on engineering principles. Finally, the amendment requires DOT to use Department of Highway Safety and Motor Vehicle crash data in reviewing motor vehicle accidents.

The analysis is written to the committee substitute as reported favorable by the Transportation & Ports Subcommittee.