THE SENATE
THIRTY-SECOND LEGISLATURE, 2023
STATE OF HAWAII

S.B. NO. 56 S.D. 1

A BILL FOR AN ACT

RELATING TO AUDIBLE VEHICLE REVERSE WARNING SYSTEMS.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The legislature finds that in order to reduce urban noise pollution caused by reversing alarms of commercial and construction vehicles and to ensure safer reversing, it is necessary to transition to newer technology for audible reverse warning systems. Commonly referred to as "back-up beepers", most audible reverse warning systems use a tonal sound over a single frequency that humans hear as "beep-beep-beep". Broadband alarms, on the other hand, use a pulsed acoustic signal that comprises a range of frequencies producing a noise that is heard as "pshh-pshh-pshh". Broadband alarms are sometimes called quackers, croakers, and wooshers.

The legislature further finds that the federal Occupational Safety and Health Administration (OSHA), requires the use of reversing alarms on construction vehicles to protect people from accidental injury and death, or alternatively the use of an observer to signal to the vehicle driver when it is safe to reverse. If using a reversing alarm, it must be "audible above

the surrounding noise level." For specific earthmoving or compacting equipment, such as a bulldozer or grader, the alarm must be "distinguishable from the surrounding noise level." Title 29 Code of Federal Regulations sections 1926.601(b)(4) and 1926.602(a)(9).

Significantly, the legislature notes that OSHA regulations do not specify a particular type or sound of alarm, which allows for flexibility. In several OSHA interpretation letters, the agency reaffirmed that its regulations do not specify that a particular reversing alarm be used or that the sound be of the single-tone type. Per OSHA, any alternatives to a conventional back-up alarm may be used so long as they "provide adequate warning to workers in the path of the vehicle, and to workers walking towards the path of the vehicle in time to avoid contact".

Various reports and studies have explored the deficiencies of single-tone back-up beepers, including a 2017 study titled "Perceptions of Key Stakeholders Regarding the Utilization of Locatable Sound for the Prevention of Occupational Pedestrian Injuries and Fatalities". This study compared the use of broadband sound reversing alarms to traditional tonal sound

alarms across a range of criteria--audibility, propagation, frequency content, and sound pressure maps--and concluded that broadband sounds for reversing alarms are nearly two-thirds more effective than their tonal equivalents. The broadband sound is both better in preventing workplace fatalities and reducing noise pollution in the surrounding area due to the broadband sound system that allows for a variety of sounds and the focusing of the alarm's sound. A New York State Fatality Assessment and Control Evaluation investigation determined that a traditional tonal back-up beeper had been inefficient in alerting the deceased worker to a reversing vehicle, stating, "Often people who work regularly near back-up beepers become accustomed to their sound and become desensitized to them as warning signals".

The purpose of this Act is to protect the State's residents from disruptive noise pollution and utilize safer vehicular reversing practices by requiring the use of broadband reversing alarms instead of tonal alarms, for certain vehicles, beginning January 1, 2026.

SECTION 2. Chapter 291 Hawaii Revised Statutes, is amended by adding a new section to part II to be appropriately designated and to read as follows:

"**§291- Audible reverse warning systems.** No state or county-owned vehicle purchased on or after January 1, 2026, shall use an audible reverse warning system that emits a warning sound other than one using broadband technology; provided that if broadband warning systems are unavailable, the director of transportation may provide an exemption.

For purposes of this section, "vehicle" includes earthmoving and compacting equipment such as scrapers, loaders, crawler or wheel tractors, bulldozers, off-highway trucks, graders, agricultural and industrial tractors, and similar equipment."

SECTION 3. New statutory material is underscored.

SECTION 4. This Act shall take effect on July 1, 2050.

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Report Title:
Audible Reverse Warning Systems; Broadband Sound; Department of Transportation

Description:
Requires the use of broadband audible reverse warning systems (back-up beepers) on state and county-owned vehicles purchased on or after 1/1/2026. Authorizes the Director of Transportation to provide an exemption in the event broadband sirens are unavailable. Takes effect 7/1/2050. (SD1)

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