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FISCAL IMPACT REPORT

ORIGINAL DATE 3/7/19

SPONSOR Steinborn LAST UPDATED _____ HB _____

SHORT TITLE Study School Bus Air Conditioners SM 112

ANALYST Eckberg

ESTIMATED ADDITIONAL OPERATING BUDGET IMPACT (dollars in thousands)

| | FY19 | FY20 | FY21 | 3 Year Total Cost | Recurring or Nonrecurring | Fund Affected |
|--------------|------|-------------------------|------|-------------------|---------------------------|---------------|
| Total | | See Fiscal Implications | | | | |

(Parenthesis () Indicate Expenditure Decreases)

Relates to House Bill 265 and Senate Bill 321

SOURCES OF INFORMATION

LFC Files

SUMMARY

Synopsis of Memorial

Senate Memorial 112 requests the Legislative Education Study Committee (LESC), in consultation with the Public Education Department (PED), undertake a study to determine the appropriate requirements for and use of air conditioners in school buses. The findings would be shared with the office of the governor, PED, and LFC by November 1, 2019.

FISCAL IMPLICATIONS

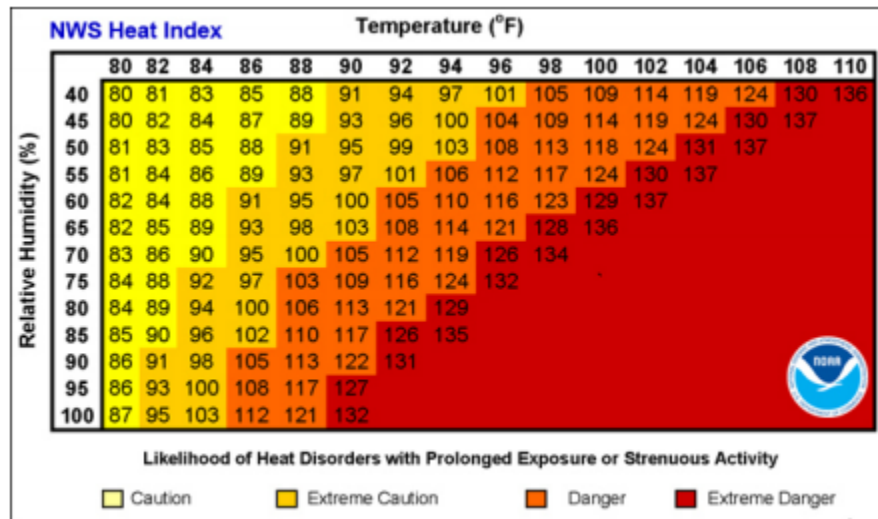
Senate Memorial 112 does not contain an appropriation.

SIGNIFICANT ISSUES

According to monthly average temperature data from the Western Regional Climate Center, New Mexico's hottest month is July, with average temperatures from the last century ranging between 56.9°F and 82.7°F across 258 temperature reporting stations. Approximately 19 percent of New Mexico temperature reporting stations recorded average temperatures above 79°F in July, one standard deviation above the mean of July data. Costs to retrofit a school bus with air conditioning can range between \$5,000 and \$11,000.

The National Weather Service notes excessive heat can lead to heat disorders such as fatigue,

sunstroke, muscle cramps, or heat exhaustion. The following index shows the likelihood of heat disorders occurring based on prolonged exposure or strenuous activity in high temperatures and humidity (NHTSA notes exposure to full sunlight can increase the index by up to 15°F in buses):



According to the New Mexico Climate Center (NMCC), mean annual temperatures in New Mexico range from 64°F in the extreme southeast to 40°F or lower in high mountains and valleys of the north. Elevation is a greater factor in determining the temperature of any specific locality than its latitude. This is shown by only a 3°F difference in mean temperature between two stations at similar elevations, one in the extreme northeast and the other in the extreme southwest; however, at two stations only 15 miles apart, but differing in elevation by 4,700 feet, the mean annual temperatures are 61°F and 45°F – a difference of 16°F or a little more than 3°F decrease in temperature for each 1,000 foot increase in elevation.

During the summer months, individual daytime temperatures quite often exceed 100°F at elevations below 5,000 feet, the average monthly maximum temperatures during July (the warmest month) range from slightly above 90°F at the lower elevations to the upper 70s at high elevations. Warmest days quite often occur in June before the thunderstorm season sets in during July and August, afternoon convective storms tend to decrease solar insolation, lowering temperatures before they reach their potential daily high. According to NMCC, the highest temperatures of record in New Mexico are 116°F at Orogrande on July 14, 1934, and at Artesia on June 29, 1918. A preponderance of clear skies and low relative humidities permit rapid cooling by radiation from the earth after sundown; consequently, nights are usually comfortable in summer. The average range between daily high and low temperatures is from 25°F to 35°F.

PED noted in other bill analysis, currently air conditioning is optional equipment for school buses. The state does not currently pay for this option; however, when a school district or contractor replaces a school bus they have the option of keeping their current bus as a spare bus or trading the bus in. The proceeds given for the trade-in are typically used for either air conditioning or dual heaters.

The risks from exposure to high temperatures in school buses can be further mitigated through a suite of other measures, such as painting school bus rooftops white to reflect sunlight off the vehicle. Vents can be installed to reduce heat buildup, and windows can be tinted to reduce the sun’s impact. However, as Senate Memorial 112 notes, even school buses with a white roof and

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with all vents and windows opened can be 10 degrees or more hotter than the outside temperature. School districts can also develop shorter routes or adjust transportation schedules to work around cooler months or times of day.

ADMINISTRATIVE IMPLICATIONS

LESC and PED would need to assign staff to study the issue and generate a report.

NE/sb