**Technical Report Documentation Page**

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| **15. Supplementary Notes** | | | | |
| **16. Abstract**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | The National Highway Traffic Safety Administration (NHTSA) has found that enhanced seat belt reminders (ESBR), that exceed the Federally-mandated basic system by providing a more persistent warning to alert drivers and passengers when they are not belted, have proven to be effective and are an important tool in the campaign to increase seat belt use. In addition, public attitudes towards the ESBR are generally positive, as those drivers whose main reasons for non-use of seat belts relate to forgetfulness or trip type, say that the ESBR alerts are beneficial1.  Ricardo Strategic Consulting (RSC) and NHTSA studied the cost and mass impact of six light passenger vehicles that have ESBR systems installed, three of them with enhanced reminders for the front outboard passenger seating position and three with enhanced reminders for a rear seating position, Table 1.  Table 1 Vehicles and model years selected for analysis with front passenger and rear passenger ESBR systems | | | |  | | | |  | | | | | | | |  | | | |  | | | | Model Years | | | | Vehicle | | | | ESBR systems for the **Front outboard Passenger** | | | | | | | | | **2014-2017** | | | **Chevrolet Silverado** | | | | | | **2013-2016** | | | **Mazda CX-5** | | | | | | **2017** | | | **Ford Fusion** | | | | | | ESBR systems for **Rear Passengers** | | | | | | | | | **2017** | | | **Toyota Rav4** | | | | | | **2016-2017** | | | **Land Rover Discovery** | | | | | | **2016-2017** | | | **Tesla Model X** | | | | | | Table 2 shows the incremental mass and incremental cost for the six ESBR systems analyzed. The cost to equip the three vehicles with front passenger ESBR systems ranged from zero incremental cost for the Ford Fusion to $1.74 for the Chevrolet Silverado. The weight of the front passenger ESBR systems ranged from nothing for the Ford Fusion to 27.6g for the Chevrolet Silverado. The cost to equip the three vehicles with rear passenger ESBR systems ranged from $12.32 for the Toyota Rav4 to $58.94 for the Tesla Model X. The weight of the ESBR systems was more consistent for the rear passenger systems ranging from 280.5g for the Toyota Rav4 to 338.8g for the Land Rover Discovery. | | | |  | | | | **Model Years** | | **Vehicle** | | | **Mass (g)** | | **OEM Cost ($)** | **Consumer Cost**  **x1.51** | | | ESBR systems for the **Front outboard Passenger** | | | | | | | | | | | **2014-2017** | | **Chevrolet Silverado** | | | **27.6** | | **$1.74** | **$2.63** | | | **2013-2016** | | **Mazda CX-5** | | | **6.1** | | **$0.93** | **$1.40** | | | **2017** | | **Ford Fusion** | | | **-** | | **-** | **-** | | | ESBR systems for **Rear Passengers** | | | | | | | | | | | **2017** | | **Toyota Rav4** | | | **280.5** | | **$12.32** | **$18.60** | | | **2016-2017** | | **Land Rover Discovery** | | | **338.8** | | **$19.54** | **$29.51** | | | **2016-2017** | | **Tesla Model X** | | | **324.9** | | **$58.94** | **$89.00** | | |  | | | |  | | | | | | | |
| **17. Key Words**  ESBR, seat belt, Wiring harness, SRS, PCB, | | **18. Distribution Statement**  This report is free of charge from the NHTSA Web site at [www.nhtsa.dot.gov](http://www.nhtsa.dot.gov) | | |
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