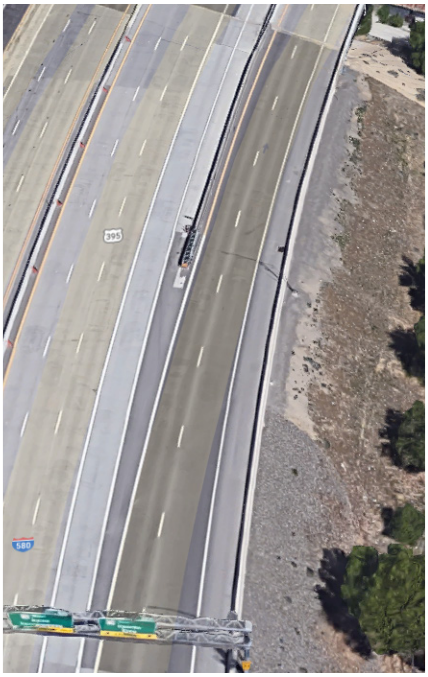
SMART CUSHION®
CASE STUDY

HILL & SMITH


*This impacted Smart Cushion attenuator is used as an example.



RENO TRACKING OF SMART CUSHION

Traveling on US-395 in Reno, NV, you will come across our Smart Cushion® crash attenuator in the median. The Smart Cushion is used to protect drivers from making direct contact with the concrete barrier at Exit 68A; I-580 split to I-80 , thus redirecting them away from the obstruction.

This specific barrier was impacted ~130 times over the span of 13 years, resulting in many cost efficient and time saving repairs.

Between 2013 and 2026, the attenuator was impacted by accidents an average of 10 times per year. Side impacts to Smart Cushion rarely require repairs. The reverse-tapered design eliminates side panel stress on frontal impacts to reduce damage and system fatigue from multiple impacts. This eliminates mobilization, repair labor and parts after side impacts (averaging 30% – 40% of the incidents, depending on the roadway geometry). The average cost of repairs for these impacts is $289.

Post-impact, Smart Cushion requires a dual-stage pull-out and replacing just two 1/4" shear bolts. Minimal damage means quick resetting and reduced worker exposure to traffic, as well as lower costs for traffic control, replacement parts and labor.

IMPACT ON SAME SMART CUSHION

Assuming 130 Impacts (10/yr)	
Labor	$146
Materials	$37
Equipment	$106
Total/Impact	$289
Total Cost Over 13 Years	
Smart Cushion	**$57,570**
Sacrificial Cushion	**$650,000+**

The Smart Cushion® attenuator is a revolutionary speed-dependent cushion that varies stopping resistance during an impact. Smart Cushion allows lighter and slower moving vehicles to have longer ride down distances and lower ride down g-forces. Unlike fixed-resistance attenuators, Smart Cushion does not reach maximum stopping resistance unless a vehicle is traveling at the maximum design speed. This fully re-directive, non-gating, bidirectional impact attenuator is designed for maximum safety and re-usability, as well as outstanding durability before, during and after an impact.