Justification to Apply the Head Restraint GTR to Category 2 Vehicles with a GVM ≤ 4,500 kg
Presented by the United States

To justify extending the head restraint GTR to Category 2 vehicles up to 4,500 kg, we estimated the number of benefits we achieved for large pick-up trucks (GWR of 3,500-4,500 kg) when we applied the US Final Rule on FMVSS 202.

For the Pedestrian GTR analysis, the Alliance provided sales for vehicles in the 3,500 to 4,500 kg range and estimated 603,500 vehicles. This number as a percentage of light trucks sold is 603,500/8,500,000 =7.1%

Page 37 of the Supplemental Final Regulatory Evaluation (March 2007)[1] shows 4,907 whiplash injury benefits for light trucks in the front seat. Taking the percentage of sales relative to benefits gives $4{,}907^{x}0.071$ = **348 whiplash injury benefits** for pick-up trucks in the 3,500 – 4,500 kg range.

This analysis assumes that whiplash injuries occur in smaller pick-up trucks (2,500-3,500 kg) at the same frequency as the larger pick-up trucks (3,500 – 4,500 kg). Some delegates at the GTR meetings claimed that this is not the case. They believe that whiplash injuries occur less frequently in larger pick-up trucks. To evaluate this theory we conducted a NASS analysis on whiplash injuries occurring in pick-up trucks. The NASS system does not easily allow one to separate the vehicles into sub categories of 2,500 – 4,500 kg, but it does break the pick-up truck category into "compact" and "large". Based on vehicle make and model, "large" pick-up trucks fall into the 3,500 – 4,500 kg weight range.

TABLE 1
Occupants of Towed Pickup Trucks with Rear Damage
Excluding those with GWR Known as <=2,722 kg
1996-2005 NASS CDS Average Annual Estimates

	Whiplash Injury	
	No	Yes
Compact Pick-up	1128.865	177.265
	86.4%	**13.6%**
Large Pick-up	6408.7	1925.09
	76.9%	**23.1%**

The data in Table 1 indicates that large pick-up trucks may have a higher rate of whiplash than compact pick-up trucks. Because of the small sample size and the need to adjust these numbers up to account for unreported crashes, we believe that it is a lot simpler to use the percentage method above to derive the benefits, ever though it may be a more conservative number.

Base on this analysis, the US recommends that the Head Restraint GTR apply to Category 2 vehicles with a GVM ≤ 4,500 kg.

[1] www.regulations.gov, Docket ID Number NHTSA-2007-27986-0001