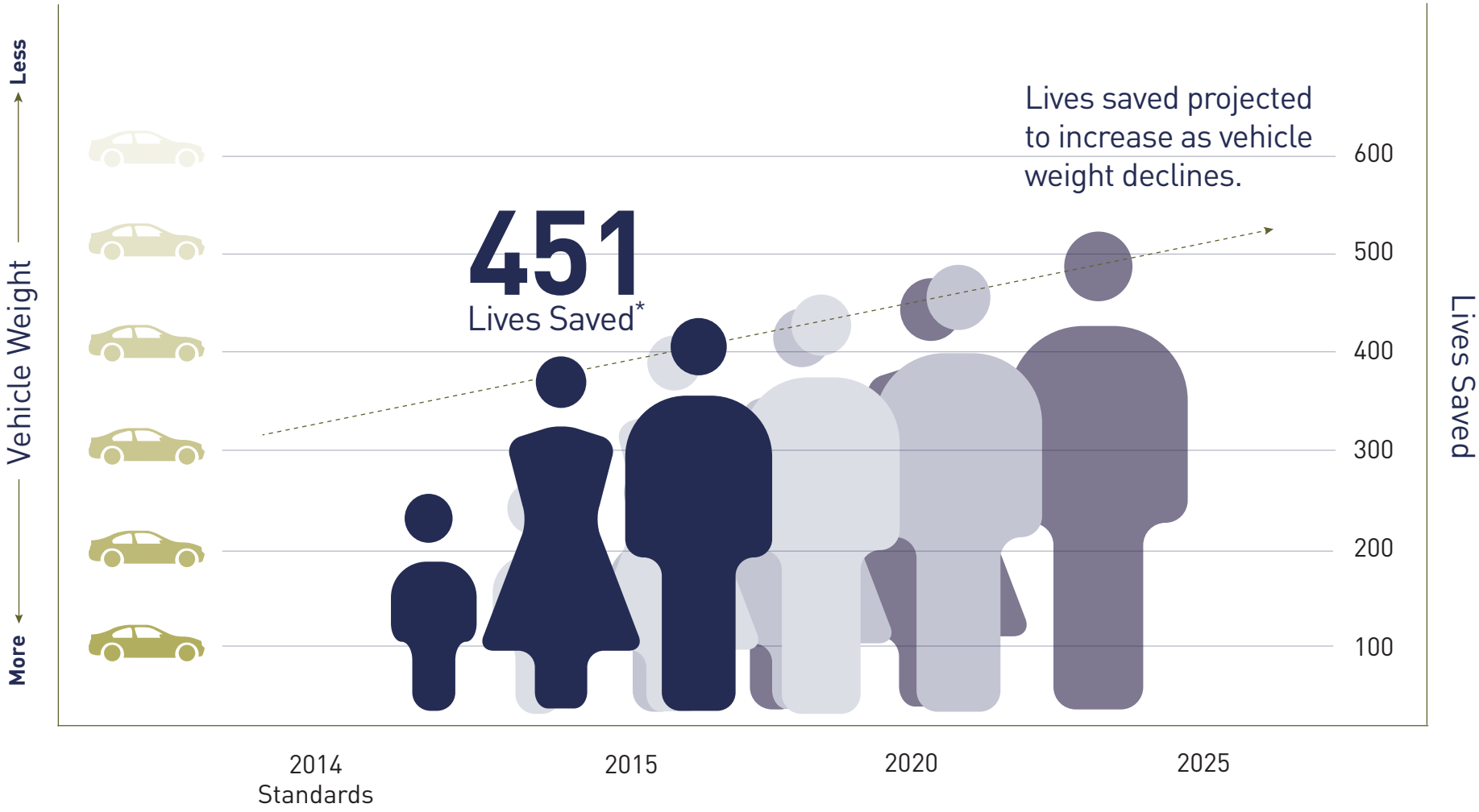
Vehicle Lightweighting Maintains Safety

American Chemistry Council | Plastics Division

Modeling Shows Material Lightweighting "On Net" Decreases Fatalities - EPA/NHTSA



*Per billion miles traveled

Modeling Shows **Material Lightweighting "On Net" Decreases Fatalities - EPA/NHTSA**

Three conclusions of the EPA Midterm Evaluation of CAFE Standards[1] demonstrate vehicle lightweighting will continue, "on net," reducing fatalities per vehicle miles traveled.

I. EPA estimates the current "baseline" car and truck vehicle fleet, which "continues to meet the 2014 standards" will save approximately 451 lives per billion miles traveled..

II. Continuing into the future toward 2025 CAFE Standards, the mid-term Technical Assessment Report (TAR) on estimates, "further mass reduction is projected to further reduce fatalities" [emphasis added] over and above the baseline standards (2014) in place..

III. "On net, the EPA analysis shows small net fatality decreases over the lifetimes of MY2021 through 2025 vehicles" [emphasis added].

Further analysis, by Tom Wenzel of Lawrence Berkeley National Laboratory (LBNL), found the reductions in vehicle mass recommended by the 2015 National Academy of Science fuel economy subcommittee report[2] (reduce the mass of small cars by 5%, midsize cars 10%, large cars 15%, and light trucks, CUVs, and minivans 20%) would result in even larger net reductions in fatalities than EPA's 100-lb or comparable proportional reduction in mass across all types of light-duty vehicles (above).
[Note: So, as the vehicle weight goes up, even more aggressive lightweighting can save even more lives.]

Wenzel, commenting on the Draft Technical Assessment[3] of the recent Midterm review:

"[T]he fleet mass reduction recommended in the 2015 NRC fuel economy subcommittee report would result in large decreases in fatalities, regardless of whether the baseline NHTSA, DRI, or LBNL regression coefficients are used (Scenario 6 in Table 6.2 in Wenzel 2016a)." [Note: No matter which analysis method was used, vehicle mass reductions equated to lives saved.]

[1]**Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation**, (Ctl-F Search: "B.3.1 Vehicle Safety Effects"), document pagination A-95-98 (PDF pages 177-180).

[2]**Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles, National Academy of Sciences, Washington, DC: National Research Council, 2015**

[3]Comments on Docket No. NHTSA-2016-0068 and Docket ID No. EPA-HQ-OAR-2015-0827, Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025-Tom Wenzel, Lawrence Berkeley National Laboratory September 23, 2016