

Monday, August 15, 2022

Dr. Dirk Huyer
Chief Coroner for Ontario
25 Morton Shulman Ave,
Toronto, ON M3M 0B1

Submitted by regular mail and electronically to dirk.huyer@ontario.ca

Dear Dr. Huyer,

***Re: Request for investigation of road deaths in Ontario
involving pick-up trucks, large SUVs, and heavy trucks***

A. INTRODUCTION

We are writing to urge you to commence death reviews for road fatalities involving pickups and large SUVs based on the growing body of research that these vehicles pose a greater risk of death to pedestrians and cyclists than conventional cars (*e.g.*, sedans) on our roads. We believe, based on the research, that pickups and large SUVs have been involved in deaths on our roads that would not have occurred with regular cars.

We believe an investigative review for pickups and large SUVs, typically designated as “light trucks,” is needed to save the lives of people on foot, bikes, and who rely on mobility devices, including wheelchairs and scooters, or who have visual impairments. As the academic authors of a recent U.S. study, “Effects of large vehicles on pedestrian and pedal-cyclist injury severity,” in the *Journal of Safety Research*, conclude: “Left to fester, the problem of pedestrian and pedal-cyclist injuries and fatalities is certain to worsen.”¹

We also urge you to conduct a death review for heavy trucks used for freight and other commercial purposes (*e.g.*, transport, dump, sanitation, and cement trucks) based on the continuing high death toll despite the availability of new and existing safety measures, devices, and technologies.

The specific design features that make pickups and large SUVs more dangerous --- and distinguish them from dangers inherent in all motor vehicles --- include driver blind spots, size and weight, and the high/blunt front end which changes the point of impact with victims on foot. The proliferation of these vehicles on public roads makes the review --- and recommendations for remedial action --- necessary and urgent to save lives and to spare families of victims a heavy burden of grief.²

¹ Mickey Edwards and Daniel Leonard, “[Effects of large vehicles on pedestrian and pedal-cyclist injury severity](#),” *Journal of Safety Research*, June 2022 (in press).

² Even as of the 2016 model year, [the light-truck segment accounted for 53% of new vehicle sales in Canada.](#) “[Automobile truck emission regulations.](#)”

The increasing number of pickups and SUVs (largely promoted and used for personal travel) now account for well over half of sales for new automobiles. The evidence suggests that these vehicles are causing more road deaths than if conventional cars --- which generally serve the same purposes --- were used. Pickups have of course been used for commerce and the transport of goods for many decades, but the vehicles in question, which have been [compared to WWII tanks](#), have continued to grow over the past decade, often operated in densely populated urban areas in the midst of children, seniors, and persons with disabilities, by drivers with no additional skills to the drivers of regular cars.

In the period 2000 to 2018, “the average pickup grew 11% taller and became 24% heavier.”³ The front ends of many pickups are now so high that drivers are sometimes incapable of seeing pedestrians directly in front of them due to the large front end blind zone. This danger is exacerbated for individuals, including children on foot or persons using mobility devices, whose height above the road is lower.

The effect of putting drivers higher up also results in pedestrians being less visible during turning manoeuvres, a problem that is already well-documented for the drivers of heavy trucks.⁴ Certain design features, such as wider roof support pillars, may also create blind zones that make it more difficult for drivers to see pedestrians that are beside them. (We also note that the height of pickups and large SUVs also obscures sightlines for pedestrians crossing the street or cyclists riding alongside these vehicles, while windows that are often tinted further obstruct sightlines even for a pedestrian or cyclist who is at a sufficient height to otherwise see through and across vehicle windows.⁵)

The ever-increasing weight of pickups and SUVs is likewise problematic, creating deadlier kinetic force on impact. As well, the high, blunt front ends of large pickups and SUVs concentrate the impact of the vehicle at the torso of a pedestrian victim rather than the knees, increasing the likelihood of serious injuries to vital organs and the head and diminishing the chances of survival.

We are also very concerned that the trend toward larger vehicles may accelerate, not only because of aggressive marketing but because of a perception, if not the reality, of greater safety for occupants of larger vehicles in crashes with smaller motor vehicles. In reality, one motorist’s gain may be another’s loss while the entire community loses with larger vehicles given that virtually every person will at some point be a pedestrian.

Our review of Toronto Police Service data for 2021 shows that in the 20 pedestrian and cyclist deaths where the motor vehicle was identified, 45% were killed by pickups and SUVs,

³ America Walks, Webinar: “Vehicle Safety for Pedestrians 101,” online at: <https://americawalks.org/webinar-vehicle-safety-for-pedestrians-101/>

⁴ Transport Canada, “Safety Measures for Cyclists and Pedestrians around Heavy Vehicles: Summary Report,” June 2018, 38. (Subsequently referenced as: Transport Canada, “Safety Measures.”

⁵ If a third party vehicle (specifically, a pickup or large SUV) was obscuring the sight lines of a nearby cyclist/or a pedestrian killed in a collision while crossing the street, then one could attribute the true cause of the collision to **reduced visibility** due to the height of the pickup or the SUV, rather than to the driver of the vehicle that made **kinetic contact in the collision**. However, the police report will probably name the latter as being responsible for the fatality — and if the former is mentioned at all, it will likely only be as an incidental factor. It’s unlikely that official statistics will properly account for these nuances in agency.

compared to 20% by conventional cars. Although this is a relatively small sample size for a single Ontario city, the number is nonetheless consistent with the research detailed in Section B.

Appendix A is a list of deaths in 2021 in the City of Toronto involving pickups and SUVs. (We also include a list of similar road deaths to date for 2022.) Appendix B lists road deaths in Toronto involving heavy trucks for the same period. In Appendix C we include other cases involving pickups and SUVs, including ones where the victim survived but suffered life-threatening injuries, or where motorcyclists were involved. While we appreciate that the coroner will only review deaths, we include these victims to show the prevalence of cases of grave injury involving pickups, SUVs, and heavy trucks. (The difference in the outcome is often a matter of mere chance.)

The climate context of our request is also important. Light-duty vehicles already account for about 11% of Canada's **total** GHG emissions.⁶ The ongoing climate crisis, and the generally higher emissions from pickups and large SUVs, simply adds another troubling dimension to the existing trend to larger vehicles. Cities and towns across Ontario, and beyond, are today struggling to reduce travel by motorized private vehicles to address pressing issues of affordability, social equity, and climate change, but if our roads become even more dangerous to people who want to walk or cycle (including for trips to the transit stop), the public cannot reap the full benefit of active transportation and mass transit nor reduce the heavy GHG emissions from the transportation sector.

B. EVIDENCE RESPECTING ADDED DANGER FROM PICKUP TRUCKS AND SUVs TO PEDESTRIANS AND OTHER ROAD USERS

There is a growing body of research that the design of pickups and large SUVs makes them both prone to crashes that might be avoided by conventional car drivers, and that in the case of a crash the person struck is more likely to die. Research studies generally identify three issues: the configuration of the front end, the heavy weight (and kinetic force in crashes), and blind spots for the driver.

We note that in the Chief Coroner's 2012 [Pedestrian Death Review](#), a total of 53% of all deaths for the period of study involved pickups, SUVs, vans, and heavy trucks compared to 34% for cars.⁷ These numbers have likely changed given the proliferation of pickups and SUVs, but the increase likely exceeds, based on the evidence, expected deaths beyond the proportionate share of pickups and large SUVs in the composition of the fleet of road vehicles.

⁶ "[Canada's third biennial report on climate change](#) was submitted to the United Nations Framework Convention on Climate Change in 2017 and projects that greenhouse gas emissions from the transportation sector in Canada will fall from 173 Mt CO₂eq in 2015 to 155 Mt CO₂eq by 2030. Light-duty vehicle emissions in particular are projected to fall from 83 Mt in 2015 to 61 Mt in 2030 as seen in [table 1](#) below. These projections assume that the stringency of the existing standards stay as they are until 2025 and then remain at the 2025 level until 2030."

⁷ Vans were involved in 19% of road deaths. Cf., Ontario Chief Coroner, "[Cycling Death Review](#)," 2012.

The following studies and articles, largely from the U.S., where pickups and SUVs have likewise proliferated, are offered in support of our call for a death review by your office:

[Uytae Lee, “The Problem with SUVs,” CBC \(visual demonstration\), April 2, 2022:](#)

- the high, blunt, front-end design of pickups and SUVs changes the point of impact of the vehicle with a pedestrian’s body, with the result that the victim is more likely to be struck in their torso suffering injuries to their head and vital organs than to their legs, as with conventional cars -- and then to suffer the risk of being run over by the motorist; and
- based on collision safety data, drivers may have a “compelling reason” to have a bigger, heavier vehicle leading to an “arms race” in car size.

[Insurance Institute for Highway Safety \(U.S.A.\):](#)

[May 2018 study](#)⁸

- in the period 2009 to 2016, pedestrian fatalities involving SUVs increased by 81% -- more than for any other vehicle type;⁹
- the higher, and often more vertical, front ends of SUVs, compared to cars, are more likely to strike a pedestrian in the head or chest;
- changes to the front-end design of these vehicles could help lessen the severity of injuries in crashes involving pedestrians; and
- front end crash prevention sensors and systems to detect pedestrians have been shown to be effective, especially if designed to work in conditions of low light.

[May 2020 study](#)¹⁰

- this review of SUVs in 79 serious injury or fatal crashes with pedestrians in the State of Michigan found that “leading edge” (namely, the front end) produces an elevated pedestrian injury risk, a finding that was consistent with previous research;¹¹

⁸ “Study highlights rising pedestrian deaths, points toward solutions”

⁹ Vehicles with high horse-power were also more likely to be involved in deadly crashes with pedestrians.

¹⁰ Samuel S. Monfort and Becky C. Mueller, “Pedestrian injuries from cars and SUVs: updated crash outcomes from the Vulnerable Road User Injury Prevention Alliance (VIPA),” May 2020. Analysis of 79 deadly crashes in three Michigan cities. Cf., “New study suggests today’s SUVs are more lethal to pedestrians than cars,” June 16, 2020.

¹¹ The report authors conceded that the small sample size meant that a larger study would be needed to confirm the findings.

- at speeds of 20-39 mph (31 to 63 km/h), 30% of crashes involving late model SUVs (the median model year for the vehicles was 2009) resulted in a pedestrian fatality, compared to 23% for cars;
- during the past two decades SUVs have remained disproportionately more likely than cars to injure pedestrians;
- “In a crash with a traditional, block-front SUV, the grille strikes the pedestrian’s pelvis or chest split seconds after the bumper hits the lower extremities, transferring more energy to the pedestrian’s body. It’s possible that a more sloping profile could do less damage;” and
- earlier research from the 1970s, 80s, and 90s showed that a pedestrian involved in a crash with an SUV, pickup or van was two to three times more likely to die than if the pedestrian was struck with a sedan.¹² Subsequent design changes to SUVs reduced the risks **to occupants of vehicles** in crashes (though pickups lagged in such design changes), but it is unclear if the changes had any beneficial outcome for pedestrians in crashes with SUVs.¹³ Indeed, single-vehicle pedestrian fatalities involving SUVs increased more than those involving other vehicle types over the past decade.

[March 2022 study](#)¹⁴

- “certain types of pedestrian crashes — including those that occur while the vehicle is turning — are more likely to occur with SUVs, pickups, vans and minivans;”
- “At intersections, the odds that a crash that killed a crossing pedestrian involved a left turn by the vehicle versus no turn were about twice as high for SUVs, nearly 3 times as high for vans and minivans and nearly 4 times as high for pickups as they were for cars;”
- “The odds that a crash that killed a crossing pedestrian involved a right turn by the vehicle were also 89 percent higher for pickups and 63 percent higher for SUVs than for cars;”
- “At or near intersections, pickups were 42 percent more likely and SUVs were 23 percent more likely than cars to hit pedestrians when turning left;”

¹² Citing Lefler D, Gabler HC. The fatality and injury risk of light truck impacts with pedestrians in the United States. *Accid Anal Prev.* 2004; 36:295-304. doi:10.1016/s0001-4575(03)00007-1; and Roudsari BS *et al.*, “Pedestrian crashes: Higher injury severity and mortality rate for light truck vehicles compared with passenger vehicles,” *Inj Prev.* 2004; 10(3):154- 158. doi:10.1136/ip.2003.003814 “the injury patterns were consistent with earlier, national studies in showing that SUVs were more likely than cars to throw pedestrians forward and nearly twice as likely to cause severe hip and thigh injuries. These injuries were mainly caused by impacts with the bumper, grille or headlights. That’s likely because the high point of the front profile, or “leading edge,” of most new SUVs is still considerably higher than that of the average car.

¹³ [“SUVs no longer pose outsize risk to car occupants, but pickup compatibility lags,”](#) IIHS, October 10, 2019.

¹⁴ [“SUVs, other large vehicles often hit pedestrians while turning,”](#) IIHS, March 17, 2022

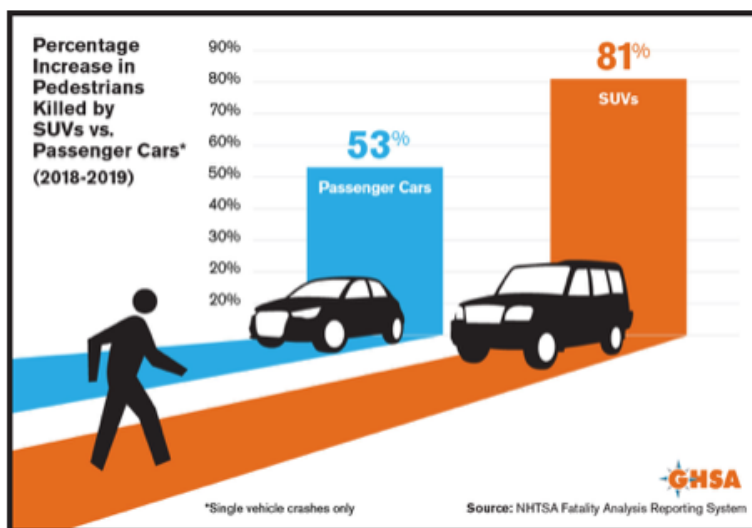
- “Away from intersections, pickups were 80 percent and SUVs were 61 percent more likely than cars to hit a pedestrian walking or running along the road;”
- “the size, shape or location of the A-pillars that support the roof on either side of the windshield could make it harder for drivers of these larger vehicles to see crossing pedestrians when they are turning;” and
- “Some general vehicle-design solutions that have already shown promise include AEB systems that can detect and avoid pedestrians or reduce impact speed; hood airbags; hoods that automatically pop up on impact; and more sloped front ends.”

OECD, International Transport Forum report on Canada:

- “since 2010, the number of fatal casualties decreased for all user groups with the exception of pedestrians. Between 2010 and 2018, against an overall decrease of 14%, the number of road deaths ... increased by 5.6% for pedestrians (p 3).”

U.S. Governors Highway Safety Association, 2019 preliminary data¹⁵:

- between 2008 and 2019, pedestrian fatalities in the U.S. increased by 53%; and
- in the period 2018-2019, pedestrian fatalities in crashes involving SUVs increased by 81% compared to 53% for cars.

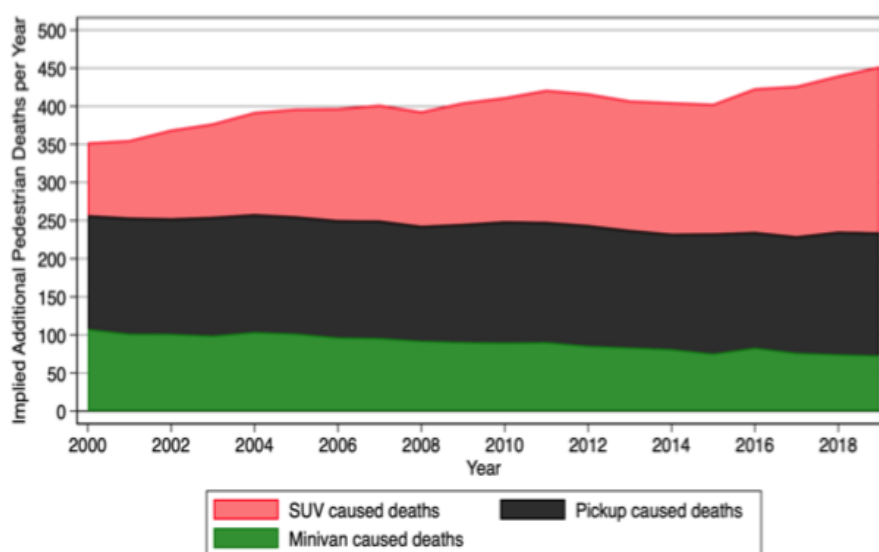


¹⁵ <https://www.ghsa.org/resources/Pedestrians20>

Professor Justin Tyndall, "[Pedestrian deaths and large vehicles](#)," *Economics of Transportation*, [Volumes 26–27](#), June–September 2021 (U.S.):

- for the period 2000-2019, an estimated "8,131 pedestrian lives would have been saved if all light trucks had been cars. The reduction would be equal to avoiding 9.5% of all pedestrian deaths (p 24);"

Figure 6: Annual Pedestrian Deaths Averted if all Light Trucks had been Cars



Relying on estimated partial effects, the figure plots the number of pedestrian fatalities that would have been averted if all light trucks were replaced by cars. Over the entire study period, converting all light trucks to cars would have prevented 8,131 pedestrian deaths.

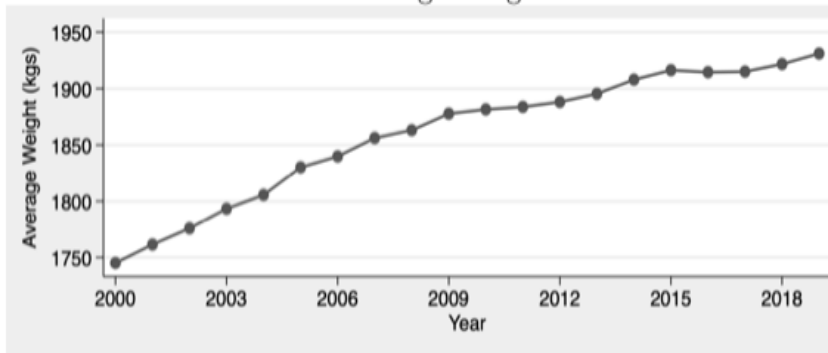
- "In 2000, converting all light trucks to cars would have spared 353 pedestrians, while by 2019 the figure had grown by 30% to 459 pedestrians. Accounting for the overall population increase of the metros, the number of pedestrian deaths attributable to light trucks increased by 7.6% on a per capita basis (p 24)."
- "Vehicle body types appear to be an important determinant of pedestrian deaths in the aggregate, strengthening arguments made in the transportation safety literature regarding the link between larger light trucks and more severe pedestrian injuries;
- "average vehicle size has undergone a sustained increase over the past 20 years, with no signs of abating. If the popularity of large vehicles continues to rise, there is likely to be a corresponding increase in pedestrian fatalities. Given strict federal regulation of vehicle safety standards, it is perhaps surprising that there is limited legislation

that restricts the overall size and body type of vehicles with the intent of improving pedestrian safety (p 27);”

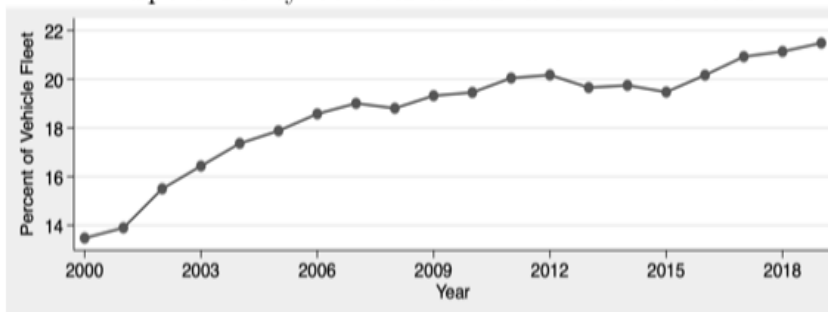
- “While larger vehicles are designed to protect their drivers and passengers in the event of a crash, less concern is given to the effect on pedestrians;”
- “Jointly considering that light trucks do not appear to improve aggregate road safety, but do improve driver and occupant safety suggests that driving a larger vehicle offloads fatality risk from the occupants to other road users (p 22).” [This phenomenon was lampooned in *The Onion* in a macabre article, “[Conscientious SUV shopper just wants something that will kill family in other car in case of accident](#),” September 2020];
- two potential reasons why light trucks (including pickups and SUVs) are more deadly than conventional cars:
 - a. the additional weight of pickups and SUVs means it takes more time for the motorist to stop the vehicle and the vehicle will strike with more force in a collision; and
 - b. the higher front end of a pickup or SUV affects the point of impact with a pedestrian. In crashes with conventional cars the pedestrian may be hit in the legs and propelled over the hood, while crashes with SUVs are more likely to involve the victim’s head and torso, harming vital organs and sending the victim under the wheels.¹⁶
- “Between 2000 and 2019 the average weight of consumer vehicles involved in a fatal crash increased by 11%, the prevalence of SUVs increased by 59% and the share of vehicles that are more than 2,500 kg increased by 374% (p 2);”
- every 100 kg increase in average vehicle weight is associated with an additional .03 fatalities per 100,000 residents;
- there is a statistically significant difference between large and small SUVs in the danger to pedestrians;
- pickups, minivans and SUVs all significantly increase pedestrian fatalities relative to cars. Converting 10% of the vehicle fleet from cars to pickups is estimated to increase the pedestrian fatality rate by .04 deaths per 100,000 residents (3.4% in the median metro area);
- since 2000, in metropolitan areas of the U.S., containing 77% of population, there has been a significant increase in size and weight of vehicles involved in fatal collisions:

¹⁶ Cf., [Frontover fact sheets, Kids and Cars.org](#), noting that “frontover” collisions involving SUVs and pickups have increased rapidly given their very large front blind spots.

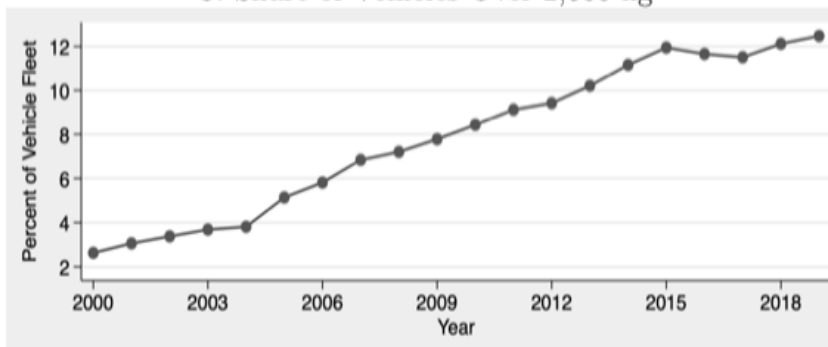
A. Average Weight



B. Sport Utility Vehicles as a Share of all Vehicles



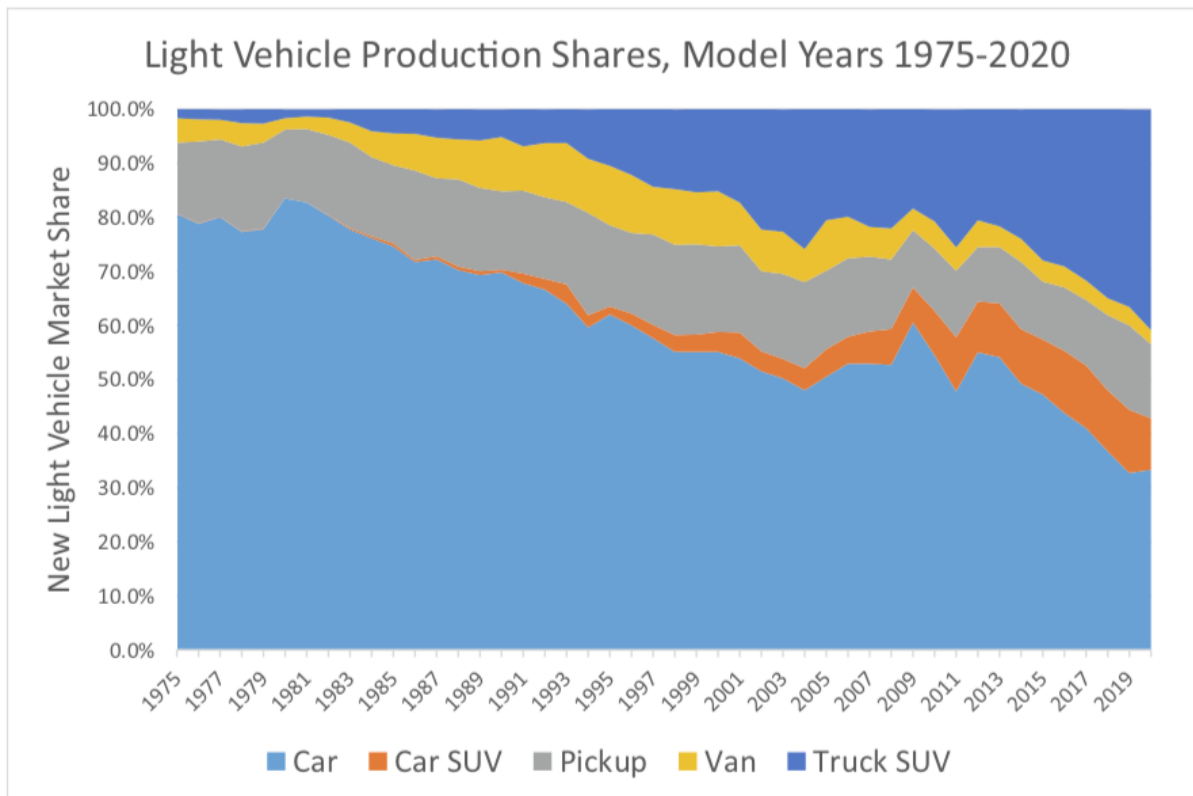
C. Share of Vehicles Over 2,500 kg



- several additional papers are cited about the increased danger of pickups and SUVs, and although these papers are now somewhat dated, there is little evidence that changes to vehicle design have made these vehicles less dangerous to pedestrians:
 - a. Simms and Wood, 2006 and Tamura *et al.*, 2008 for evidence that crashes with light trucks (SUVs, pickups, and vans) are more likely to result in a fatality;
 - b. Lefler and Gabler, 2004, based on U.S. data from the 1990s, estimating that a pedestrian struck by a light truck is two to three times more likely to die than a pedestrian struck by a car; and
 - c. Desapriya *et al.*, 2010, based on meta-analysis of papers concerned with pedestrian fatalities, found that the chance of fatal injury among pedestrians was 50% higher when struck by a light truck compared to a car.

Mickey Edwards and Daniel Leonard, "[Effects of large vehicles on pedestrian and pedal-cyclist injury severity](#)," *Journal of Safety Research*, June 2022 (in press):

- "from 2010 to 2019 pedestrian fatalities [in the U.S.] increased by 46% to 6,301 deaths¹⁷;"
- While the purchase of conventional cars is diminishing in the U.S., sales of "truck SUVs" has increased significantly [a similar trend is evident in Ontario]:



- "Taller and heavier vehicle types (like pickup trucks, SUVs, and vans/minivans) combined to make up just 26.1% of pedestrian and pedalcyclist crashes, but were the striking vehicle in 44.1% of fatalities;"
- "SUVs were especially overrepresented in fatalities. Though SUVs were the striking vehicle in 14.7% of cases, they were involved in greater than one-in-four (25.4%) fatalities;"
- "Pickup trucks were also overrepresented in fatal pedestrian and pedalcyclist crashes relative to the proportion of all cases. Of all pedestrian and pedalcycle fatalities, 12.6% involved a pickup truck – some two and a quarter times the proportion of all cases involving a pickup. Conversely, though passenger cars were the striking vehicle in 62% of cases, they were involved in just 38.4% of fatalities;"

¹⁷ Citing [GHSA, 2021](#)

- “An adult (aged 18–64) struck by a pickup truck was four times more likely to be killed than an adult struck by a passenger car. And a senior (aged 65 and over) struck by a pickup truck was nearly three times more likely to be killed compared to a senior struck by a passenger car;”
- “In every age group, passenger cars represented the greatest proportion of fatalities, though they were underrepresented relative to the proportion of cases in which they were involved. For example, passenger cars were the striking vehicle in almost 62% of pedestrian and pedalcyclist crashes involving children, but just about 19% of childhood fatalities;”
- “the proportion of fatalities involving pickup trucks was more than double the overall proportion of pickup trucks involved in pedestrian and pedalcyclist crashes for all age groups. For example, pickup trucks were the striking vehicle in 6.1% of all cases involving seniors, but represent 13.5% of all senior pedestrian and pedalcyclist fatalities;”
- “SUVs were particularly deadly for children. SUVs were the striking vehicle in greater than 40% of childhood fatalities, even though SUVs were involved in just 16.9% of childhood cases;”
- “A child (under age 18) struck by a SUV was eight times more likely to be killed than a child struck by a passenger car;”
- “children represented 21% of all pedestrian and pedalcyclist crash victims but 26.1% of cases involving SUVs – implying SUVs were not only more deadly, but also disproportionately struck children;”
- “Together, SUVs, pickup trucks, and vans/ minivans combined to cause two-thirds of fatalities involving child pedestrians and pedalcyclists;”
- “the model estimates that a pedestrian or pedalcyclist struck by a pickup truck was 4.7 times more likely to die as a result. Those struck by a SUV or van were 3.37 times and 4.58 times more likely to be killed, respectively;” and
- “Pedestrians and pedalcyclists struck by a large motor vehicle were more likely to suffer moderate or worse injuries to their thorax compared to those struck by a passenger car. Though the proportion of pickup trucks involved in all cases examined here was 5.6%, that proportion nearly doubles to 11.1% of all non-minor thorax injuries.”

Professors Michael Anderson and Maximilian Auffhammer, [“Pounds that kill: The external costs of vehicle weight.”](#) National Bureau of Economic Research, 2013:

- “Heavier vehicles are safer for their own occupants but more hazardous for other vehicles;” and
- controlling for own-vehicle weight, being hit by a vehicle that is 1,000 pounds heavier generates a 40-50% increase in fatality risk.¹⁸
- [Thus, in the context of road crashes, the transition to electric vehicles will not alleviate the danger since electric vehicles are heavier because batteries add about 1,000 lbs. to a vehicle. [The GMC Hummer EV’s battery](#), for instance, [weighs about 3,000 lbs.](#), adding to a vehicle that already [exceeds 9,000 lbs.](#)]

[American Automobile Association](#), “AAA Warns Pedestrian Detection Systems Don’t Work When Needed Most,” AAA Newsroom, October 2019:

- pedestrian detection features on vehicles are not proving effective to compensate for larger vehicle sizes. These detection systems don’t work at night or at high speeds, don’t detect 90 percent of children, and can’t detect pedestrians in crosswalks when the vehicle is turning.

In addition to this research, we note that automobiles are not equipped with interlock (breathalyzer) or identification devices, so drivers do not have to show sobriety, a valid license or insurance policy in order to start a car. There is no systemic measure to prevent drunk, unlicensed or uninsured drivers from driving and killing. Vehicles do not have GPS location-based speed-limiting technology, so there is no measure to prevent speeding that increases the road danger. In addition, all vehicles are increasingly manufactured with distracting in-car screens, flouting the illegality of not allowing drivers to look at cell phone screens while driving. These problems are simply exacerbated given the perils associated with larger vehicles.

[The Ontario Road Safety Annual Report \(ORSAR\) 2018](#) (the last year for which final figures are available) also offers valuable insights, particularly the significant reduction in overall road fatalities, *with the notable exception of pedestrian fatalities that are on the rise:*

- a. road deaths have *decreased* from 1,102 to 602 in the period 1999 to 2018, however, in the period 2009 to 2018, pedestrian deaths have increased by 2% from 20% to 22% of all road deaths – p. 11;

¹⁸ We also note evidence that women (as motorists) suffer a greater number of serious injuries in vehicle crashes, which may be attributable to their lesser propensity than men to buy large vehicles such as pickups. Matthew L. Brumbelow & Jessica S. Jermakian (2021): “Injury risks and crashworthiness benefits for females and males: Which differences are physiological?” Traffic Injury Prevention, DOI: 10.1080/15389588.2021.2004312

- b. since 1990 there has been a dramatic *decrease* in road deaths in Ontario for both drivers (from 540 to 271) and for passengers (from 321 to 104), while deaths for pedestrians have fluctuated minimally during the same period (from 154 to 134) – p. 28; and
- c. although there has been a 44% *decrease* in fatalities involving heavy trucks since 1999 (from 171 to 95), these trucks nonetheless remain one of the top four “situations” for road deaths at 16% – pp. 4-5.
- d. (the report does not helpfully distinguish between vehicles other than as between, for example, passenger vehicles, passenger vans, pickup trucks and various other types such as mopeds, buses, etc. Of the 948 vehicles involved in the 602 fatalities in the province in 2018, 114 vehicles (or 12%) were pickups. (One or more vehicles may be involved in a single fatal crash.) – p. 62.)

C. HEAVY TRUCKS: HISTORY OF PREVIOUS REVIEWS AND PROGRESS TO DATE IN REDUCING ROAD DEATHS

In 1996, after the deaths of two women in the City of Toronto in separate crashes involving heavy trucks in Toronto, an Ontario Regional Coroner, at the instigation of Advocacy for Respect for Cyclists (ARC), conducted a comprehensive review of cyclist deaths in Metropolitan Toronto (now the City of Toronto). In his 1998 final report, the Coroner recommended a study of side-guards to address the problem of right-turning trucks.

In 2011, the United Senior Citizens and other groups, represented by lawyers Patrick Brown and Albert Koehl, [requested that the Ontario Chief Coroner review pedestrian and cyclist deaths in Ontario](#). The Coroner’s subsequent [Pedestrian Death Review](#) and [Cycling Death Review](#) were released in June 2012 with recommendations for matters such as speed limits, education, road design, and a “complete streets” approach.

On many urban streets, speed limits have indeed been reduced from the provincial default speed of 50km/h to municipally set speeds of 30 and 40 km/h. Heavy trucks (as well as large pickups and SUVs) are, however, often dangerous at any speed, even when they are only moving at a walking speed. In other words, road (re-)design and lower speeds will not fully address the problem – a pedestrian or cyclist may be killed when the victim is standing still, and the truck is moving very slowly, especially in the case of right-hand turns. In fact, the Chief Coroner had recommended that heavy trucks (found to be involved in a significant number of pedestrian and cyclist deaths¹⁹) be equipped with side-guards to prevent pedestrians and cyclists from being killed by the rear wheels of trucks in right turn crashes.

Since 2012 many more pedestrians and cyclists have been killed by right-turning trucks. A study by the Canadian Automobile Association (CAA) reported that across Canada 19 percent of cyclist fatalities involved heavy trucks.²⁰ Pedestrian and cyclist fatalities included a

¹⁹ In the Ontario Chief Coroner’s deaths reviews for the year 2010 in Ontario, he reported 18 of 100 fatal cyclist collisions and 11 of 95 fatal pedestrian collisions involved a heavy truck.

²⁰ Transport Canada, “Safety Measures,” 39.

significant percentage of cases involving right-turning trucks: 17 percent for pedestrians and 39 percent for cyclists.²¹ There is evidence that prohibiting right turns on a red signal may provide a further protection to pedestrians and cyclists from turning trucks, especially because many drivers roll through such stops.²² The attention to right-turning trucks therefore fully merits attention and action, but so too do the majority of pedestrian and cyclist fatalities involving heavy trucks that are not related to right turns -- but instead involve the front and other parts of the truck.²³ The recommendations in both the regional coroner's review in 1996 and the Chief Coroner's review in 2012 were focused on side-swipe crashes, and did not make any recommendations specifically targeting other types of crashes involving heavy trucks.

Some measures have been taken in Ontario. In Toronto, for example, there are now advance signals for pedestrians, with the advantage that pedestrians will already be in the intersection, and therefore more visible, when a truck starts to make a right turn. This advantage does not accrue, however, to pedestrians who begin crossing after the advance has expired. Lower speeds that have been instituted in some cities and towns are also likely to reduce the severity of injuries in crashes.²⁴ Measures are being taken by some municipalities to retrofit or update their own fleet of heavy trucks or to train drivers,²⁵ but these measures are far from uniform across the province.

We appreciate that when the Chief Coroner conducted his review of pedestrian (and cyclist) deaths in 2012, he included recommendations directed at various levels of government and other bodies responsible for regulating heavy trucks. The basis of our current request relating to heavy trucks is not to lament any failure by responsible authorities to act, but to update the 2012 Coroner's review with new information, measures, and technologies. (In 2012, the Coroner had simply noted that emerging safety technologies should be considered.²⁶)

In June 2018, Transport Canada released a comprehensive survey of remedial measures for heavy trucks--- ranging from training for drivers to cutting edge technologies --- to address the danger to pedestrians and cyclists but did not make any specific recommendations, not even to favour one option over another or to recommend specific measures that Transport Canada itself could take.²⁷ Instead, the Transport Canada report, "[Safety Measures for Cyclists and Pedestrians Around Heavy Trucks: Summary Report](#)," left the job of choosing

²¹ Transport Canada, "Safety Measures," 39.

²² Transport Canada, "Safety Measures," 71.

²³ Transport Canada, "Safety Measures," 75 pointed to the 2015 National Collision Data Base (NCDB) noting that "three-quarters of Canadian fatal collisions between heavy trucks and pedestrians and cyclists happen at the front of the vehicle (front, right front and left)..."

the National Research Council found that in 43% of bicycle-truck crashes and in 46% of pedestrian-truck crashes, the VRU was hit by the front of the truck.

²⁴ Transport Canada, "Safety Measures," 23.

²⁵ "Promoting Safe Operation of Fleet Vehicles on City Streets," City of Toronto, online at: <https://www.toronto.ca/legdocs/mmis/2022/ie/bgrd/backgroundfile-222837.pdf>

²⁶ The Ontario Chief Coroner's 2012 Cycling Death Review recommended: "Side-guards should be made mandatory for heavy trucks in Canada. In addition, consideration should also be given to requiring additional safety equipment (such as blind spot mirrors and blind spot warning signs) to make cyclists more visible to trucks and decrease the chance of a collision, especially during right-hand turns."

²⁷ Transport Canada, "Safety Measures for Cyclists and Pedestrians," 1.

and implementing remedial measures to decision-makers in the public and private sector subject to provincial and local circumstances. In short, no action was taken other than to set out a broad range of potential options to be undertaken by relevant authorities depending on their powers and interest.

The federal report reiterated the problem of blind spots for drivers of heavy trucks for which a variety of measures were surveyed including blind spot bumper mirrors,²⁸ turn-assist technology, visibility enhancement systems, pedestrian and cyclist detection sensors (and associated driver training), designated routes for heavy trucks or restricted hours of operation (governed by a rating system for vehicle blind spots²⁹), and better cab design for the driver.

D. ANALYSIS OF DEATHS IN TORONTO IN 2021 INVOLVING PICKUPS, SUVs, AND HEAVY TRUCKS

Toronto police records of pedestrian and cyclist deaths for the year 2021, admittedly a small sample size, are generally consistent with the academic research.

We identified a total of 26 road crashes in which pedestrians or cyclists suffered fatal injuries. (The city’s Vision Zero data reports 28.³⁰) We exclude from the 26 pedestrian and cyclist deaths, six cases in which the type of motor vehicle involved is not reported by police, leaving 20 for our assessment.

In Appendix A, we list all pedestrian and cyclist deaths in 2021 on Toronto roads involving pickups and SUVs. (We do not distinguish between large and small SUVs since most police reports do not provide a vehicle model.)

In Appendix B, we list pedestrian and cyclist fatalities in 2021 in Toronto involving heavy trucks.

In Appendix C we list additional, potentially instructive cases, including other Ontario cities, involving pickups, SUVs and heavy trucks in crashes resulting in deaths or serious injuries.

The results of our review for 2021 shows the following types of vehicles involved in fatal crashes that resulted in pedestrian and cyclist deaths (including individuals in mobility devices such as scooters or wheelchairs):

Type of vehicle	# of fatalities (pedestrian/cyclist)	% of fatalities (pedestrian/cyclist)
Conventional cars (e.g., sedans, coupes)	4	20%

²⁸ Transport Canada, “Safety Measures,” 87 citing a 2007 U.S. study about potential safety benefits.

²⁹ Transport Canada, “Safety Measures,” 94, citing a Montreal pilot project.

³⁰ “Vision Zero – Fatalities,” City of Toronto, online at:

<https://www.toronto.ca/services-payments/streets-parking-transportation/road-safety/vision-zero/vision-zero-dashboard/fatalities-vision-zero/>

Pickups	2	10%
SUVs (crossovers and large SUVs + Jeeps)	7	35%
Heavy trucks (dump or cement trucks)	4	20%
TTC	0	0%
Minivans and commercial vans	3	15%
Total	20	100%

We could not find a statistical breakdown for vehicle types on Toronto roads. We conducted our own rudimentary analysis based on two counts of almost 2,000 vehicles, the first on a downtown arterial road and the second on a suburban arterial. (The downtown count was conducted near the location (and at a proximate time) where a young man was killed by a heavy truck in 2021.)

In the downtown count, 51% of vehicles were conventional cars, while in the suburban count the figure was 36%. Pickups were more common in the suburban count, but still only amounted to 7% of all vehicles compared to 2.5% in the downtown count. SUVs accounted for 41% of vehicles in the downtown count, a figure which we attempted to divide as between larger and smaller (“cross-over”) models. The larger SUVs accounted for 18% of all vehicles in the downtown count with a comparable figure of 25% in the suburban count (although distinguishing between “large” and “small” was based on a cursory visual assessment). Heavy trucks (and buses) accounted for no more than 2.5% in each count.³¹ Based on our own observations, we believe that pickups are far more common in areas beyond the city.

Perhaps the most noteworthy number in the Toronto Police figures is the underrepresentation of conventional cars in fatalities, consistent with the findings of Professor Tyndall who suggests that the number of road deaths would be significantly lower if conventional cars took the place of pickups and large SUVs on our roads.

Statistics Canada does provide a [statistical breakdown of vehicles for Ontario](#), but the data is generally unhelpful to our purposes since SUVs and pickups are combined in the “passenger vehicle” category. The agency reports an increase in the number of registered “light vehicles” -- a category for vehicles weighing 4,500 kg or less, comprised of passenger cars,

³¹ We include jeeps in the large SUV category. Albert Koehl conducted the counts on August 3 and 4, 2022. The first between 4:40pm and 5:30pm at the southeast corner of University Ave at Bloor St. (Miguel Escanan was killed just north of Bloor St on Avenue Rd, which is contiguous to University Ave. He counted 835 motor vehicles, including 430 cars, 191 “crossover” SUVs, 152 larger SUVs, 16 minivans, 21 pickups, 2 buses, 0 heavy trucks, 18 commercial vans, and 8 motorcycles. The second count between 7:55am and 8:47am on arterial Bloor St W, near The Queensway. He counted 993 vehicles including cars (362), SUVs: crossover (193), large (251); minivans (47); pickups (71); heavy trucks and buses (24); commercial vans (42).

light trucks, and vans, from 7.9 million to 8.5 million between 2015 and 2019.³² The composition of this category has changed with a far larger proportion of “light trucks” (pickups, SUVs and minivans) relative to passenger cars. This is no surprise given that for [new vehicle sales in Ontario](#) between 2010 and 2019, “trucks” --- prominently including pickups, SUVs, and minivans (and a far smaller number of buses, vans, and heavy trucks) --- increased dramatically from 324,318 to 632,202. During the same period, sales of passenger cars, which stood at 262,315 in 2010, increased until 2014 before beginning a steady decline, reaching 216,504 in 2019. (In 2020 and 2021, during the height of the pandemic, sales of both types fell.)

E. OPPORTUNITIES AND POTENTIAL REMEDIAL ACTION

The proliferation of pickups and large SUVs and the presence of heavy trucks on our roads constitute a real and preventable threat to the lives of pedestrians, cyclists, and persons with disabilities on our roads. The interests of the general public appear to be at odds with those of automakers who are aggressively marketing pickups and large SUVs not because they are more useful to consumers, but because [they reap higher profit margins](#). The corporate profit motive cannot justify a trend to deadlier vehicles.

We appreciate that if the Coroner undertakes a review, any recommendations he makes will be based on the evidence. We are, however, confident that there are many available options to address the dangers of pickups, large SUVs and heavy trucks. We offer a list of some of these opportunities in this section.

In the case of pickups, we note that there are safer transportation products that require neither the size nor weight of current offerings. In short, the current over-sized pickups do not entail any substantial increase in utility for most users; indeed, there are conventional options, namely sedans, that are equally useful. The same can be said for large SUVs.

Educating the public, either as road users or as consumers of pickups and SUVs, is perhaps the easiest first step in lessening the danger of these vehicles to pedestrians and cyclists. Changes to advertising regulations could be implemented to include warnings in print or digital ads and other marketing materials of the dangers posed by pickups and large SUVs. Consumers in the market for a new vehicle may decide that the added danger constituted by a large pickup or SUV is unacceptable and imprudent.

A proposal before the New York State Assembly would require the state’s Department of Transportation to maintain a database ranking each vehicle model based on the rate of crashes and the severity of injuries to pedestrians or cyclists, thus allowing for the labelling of new cars and the education of consumers about safety risks to people on foot and bikes associated with a vehicle.³³ Such a rating system could be adopted in Canada to rate and highlight safety risks associated with particular vehicles and thereby to discourage

³² A total of 9.03m road vehicles were registered in 2019 (an increase from 8.4m in 2015).

³³ The initiative is cited in Edwards and Leonard as: “New York Assembly. New York State Senate. Transportation Committee. 2020. An act to amend the vehicle and traffic law, in relation to creating a pedestrian safety rating system for motor vehicles. 2019-2020 Legislative Session. S7876.” For an article summarizing the New York initiative, see: Laura Bliss, [“Should SUVs Get a Pedestrian Warning Label?”](#) Bloomberg, City Lab – Transportation, May 24, 2021.

consumers from purchasing vehicles that are a danger not only to other road users but to their own family members during manoeuvres such as, for example, backing out of a home driveway. The [European New Car Assessment Program \(NCAP\)](#) already contains [a rating system for the safety of people outside of the car](#). (The U.S. National Highway Traffic Safety Administration's (NHTSA) does have a "New Car Assessment Program" that rates the safety features of cars, including blind spot detection devices, but does not yet require information about vehicle tests relating to pedestrian injuries. A similar system exists in Canada.)

New technologies may help curtail risks inherent in the design of pickups, SUVs and heavy trucks. Safety systems such as automatic emergency braking and pedestrian detection systems are now commercially available and could be required on all such vehicles sold in Canada.

The particular peril posed by pickups and SUVs may justify a recommendation for special licensing and testing requirements, perhaps by requiring SUV and pickup drivers to obtain a [Class D license](#), recognizing that standard driver training does not prepare drivers to operate these vehicles safely.

The most dangerous of the pickups and SUVs might be restricted or even banned in cases where other measures are inadequate. This may be necessary in the case of the largest pickups or SUVs where enormous front ends simply pose too great a risk to other road users. The risks of these vehicles, in the absence of real-world needs, especially in urban areas, may not provide a sufficient rationale for their use. (We note that the vast majority of consumers [never use large pickups and SUVs for their advertised capacities, such as off-roading or heavy towing](#).)

The drivers of pickups and large SUVs, as well as drivers of heavy trucks, might be restricted from making specific manoeuvres, including right turns on a red signal. Municipalities might also increase parking fees for large pickups and SUVs to reflect actual space consumed and to dampen demand for such purchases.

David Zipper has outlined actions that governments can take to address road danger by reducing the use of large pickups and SUVs, including the scaling of local fees (including parking fees) to vehicle size, making more parking spaces for small cars, banning certain large vehicle features such as "bull bars" that increase harm to pedestrians in crashes, and reducing the size of vehicles in city fleets.³⁴

Professor Justin Tyndall proposes "Pigouvian taxes" to internalize the external costs of pedestrian fatalities attributable to driving a light truck instead of a car. These taxes, suggests Tyndall, could be implemented with annual taxes based on vehicle type that are equal to the marginal external costs, so that the greater pedestrian fatality risk is internalized in the cost of a vehicle.³⁵ In Ontario, vehicle licence plate renewal fees could be

³⁴ David Zipper, "[How Cities# Could Push Back on Pickups and SUVs](#)," Bloomberg News, September 17, 2020. Zipper is a Visiting Fellow at the Harvard Kennedy School's Taubman Center for State and Local Government, where he examines the interplay between urban policy and new mobility technologies.

³⁵ At p 26, he concludes that, based on "the value of a statistical life, the implied economic cost of the 8,131 pedestrian deaths attributable to the presence of light trucks between 2000 and 2019 is \$85 billion. The

renewed based on a sliding scale that significantly increases the amount of the fee commensurate with the weight and design of the vehicle, in recognition of the added peril to other road users.

Since the height of the driver above the road likely impairs the driver's view of the road, it may be that specifications must be mandated in the manufacturing process. One easily addressed problem is the prevention of vehicle modifications that further raise the cab (and the driver) above the road, increasing the problem of the driver's view of the road.

We believe that road deaths involving heavy trucks, which remain a constant, predictable, tragic reality of our roads can be prevented with the right combination of measures, including cab re-design along with cutting edge safety devices and technologies, driver education, and restrictions on when and where such vehicles can be used. The Coroner may recommend enhancing existing training by the Ontario Ministry of Transportation for protecting pedestrians and cyclists.³⁶ In its 2018 review, Transport Canada noted that driver blind spots, largely caused by poor cab design, can be improved by reducing the size of support columns and repositioning them so that the truck driver's field of vision is almost entirely unobstructed.

The solutions for heavy trucks may involve all government levels, but this should not be an excuse for inaction, but rather an opportunity for collaboration to save lives.

F. Conclusion

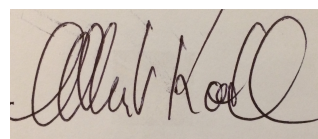
The proliferation of large pickups and SUVs makes the proposed death review particularly urgent. The ongoing high death toll from heavy trucks likewise supports our call for action.

In short, given the high number of road deaths suffered by pedestrians, cyclists, and persons with disabilities in crashes involving pickups, SUVs and heavy trucks, we ask you to "speak for the dead to protect the living."

Sincerely,



Jess Spieker
Friends and Families for Safe Streets



Albert Koehl
Toronto Community Bikeways Coalition

"Daniella Levy-Pinto"

Walk Toronto

possibility of reducing the pedestrian safety externalities imposed by large vehicles through regulation could provide significant societal welfare improvements."

³⁶ Transport Canada, "Safety Measures for Cyclists and Pedestrians," 29."

on behalf of the listed signatories:

- Bike Law Canada (Melissa Dowrie)*
- Bike Windsor Essex*
- Bridging Overlea (Toronto)*
- Citizens Environment Alliance (Windsor)*
- Cycle Toronto*
- CycleWR (Waterloo)*
- Environment Hamilton*
- Friends and Families for Safe Streets*
- Going the Extra Mile for Safety (GEMS)*
- Guelph Coalition for Active Transportation (GCAT)*
- London Cycle Link*
- McLeish, Orlando – Patrick Brown*
- Safe Parkside (Toronto)*
- Toronto Community Bikeways Coalition*
- TTC Riders*
- Walk Toronto*
- Waters, Christopher, Professor, Faculty of Law, U of Windsor, Author-Every Cyclist’s Guide to Canadian Law*

Appendix A - road deaths in City of Toronto involving pickups and SUVs for 2021 15

Appendix B – road deaths in City of Toronto involving heavy trucks for 2021 17

Appendix C – Additional cases involving pickups, SUVs, and heavy trucks in Ontario 18

[Appendix A - road deaths in City of Toronto involving pickups and SUVs for 2021](#)
(and deaths to date in 2022)

See also: Toronto Police Service data at <https://data.torontopolice.on.ca/pages/fatalities>

	2021 cases				
#	Date	Vehicle	Location	Victim	Facts/allegations based on police or media reports
1	Dec 26, 2021, Sun; 2:02pm	SUVs (as reported in media)	Richmond Street West at Yonge Street	18-yr-old man, pedestrian (died Jan 1, 2022; other pedestrians injured)	TPS Case #: 2021-2486085 (Fatal Collision #60) - a silver Kia operated by a 22-yr-old man was travelling westbound in the left lane; a white Hyundai operated by a 32-yr-old man was also travelling westbound in the middle lane; the Hyundai turned left across the path of the Kia; they collided causing the Kia to roll on its side striking multiple pedestrians; eight people were transported to hospital, two in life-threatening condition. See also media report and images: Global News, https://globalnews.ca/news/8484052/yonge-richmond-collision-victim-dies/ and see: https://www.websleuths.com/forums/threads/canada-8-injured-

					1-critically-after-car-flipped-on-downtown-sidewalk-toronto-26-12-21.606863/
2	Dec 12, 2021, Sun, approx 7:30 pm	Hyundai Santa Fe SUV 2021 or 2022	Sheppard Avenue East and Allanford Road	82-yr-old man, pedestrian	TPS Case #: 2021-2396112 (Fatal Collision #56) - man was crossing Sheppard Av E from the north side to the south side, just east of the intersection; white SUV travelling eastbound on Sheppard Ave E struck the pedestrian; the vehicle did not remain on scene and was last seen driving north on Kennedy Rd; the pedestrian was pronounced deceased at the scene; Driver identified, wanted for Leaving the Scene of an Accident Causing Death.
3	Aug 27, 2021, Fri, approx. 2:00 pm	Ford F150 pickup	Bathurst Street and Queens Quay West.	89-yr-old man, pedestrian	TPS Case #: 2021-1633249 (Fatal Collision #32) - 31-yr-old man driving a Ford F150 Pickup truck south bound on Bathurst St; driver made a right turn onto west bound Queens Quay W and contact was made with the victim; the man was taken to hospital where he succumbed to his injuries
4	Aug 26, 2021, Thurs, approx. 3:30 am	Jeep	Harbour Street and York Street	Man, pedestrian	TPS Case #: 2021-1622645 (Fatal Collision #31): pedestrian struck at Harbour Street and York Street ; unidentified man was in the intersection of Harbour St at York St; 46-yr-old man was driving a black Jeep eastbound on Harbour St; the Jeep struck the man leaving him with significant injuries; the man succumbed to his injuries at the scene; the Jeep was later located, abandoned, on Richardson St. Driver charged with impaired Operation – Cause Death, and Fail to Stop at Accident – Cause Death
5	Aug 24, 2021, Tues, 8:43 am	2018 Toyota Rav4	Fairview Mall Drive and Don Mills Road area	86-yr-old woman, pedestrian	TPS Case #: 2021-1608912 (Fatal Collision #30) - 43-yr-old woman was operating a grey 2018 Toyota Rav4 in the parking lot; she lost control of the vehicle and drove over a curb; an 86-yr-old woman was walking on the sidewalk when she was struck by the vehicle; she was critically injured and succumbed to her injuries on scene
6	July 31, 2021, Sat, approx 4:56 pm	2016 Toyota 4Runner	2900 Markham Road ³⁷	2-yr-old boy, on foot	TPS Case #: 2021-1443127 (Fatal Collision #24/2021) - 39-yr-old woman was operating a black 2016 Toyota 4Runner on Markham Road and entered the parking lot at 2900 Markham Road through the entrance north of McNicoll Ave; a two-yr-old boy walked into the path of the Toyota 4Runner and was struck by the vehicle; the boy suffered fatal injuries
7	May 21, 2021 Fri, 3:25 am	Volkswagen SUV	Dundas St E and Sherbourne St area	58-yr-old woman, pedestrian (died May 27, 2021)	TPS Case #: 2021-938844 (Fatal Collision #8) - collision involving a pedestrian and Volkswagen SUV; the 58-yr-old woman later succumbed to her injuries.
8	May 20, 2021, Thurs, 2:38 pm	2018 GMC (pickup truck)	Kingston Road and Dorset Road area	66-yr-old woman, on scooter	TPS Case #: 2021-934827 (Fatal Collision #7) - 31-yr-old man was operating a 2018 GMC westbound in the curb lane; a 66-yr-old woman was operating a scooter making a u-turn; the woman was struck by the truck; she was transported to hospital where she succumbed to her injuries
9	Mar 25, 2021, Thurs, 11:00 pm	2015 Toyota SUV	Victoria Park Avenue just north of Sparks Avenue	34-yr-old man, pedestrian	TPS Case #: 2021-552546 (Fatal Collision #3) - collision between a motor vehicle and pedestrian; 46-yr-old woman was driving a 2015 Toyota SUV northbound on Victoria Park Ave; 34-yr-old man was on the east sidewalk, north of the intersection; the man attempted to cross Victoria Park Avenue from the east sidewalk to the west sidewalk and was struck by the northbound Toyota SUV; he suffered significant injuries and later succumbed to his injuries

³⁷ Police records, for example, show two listings for traffic fatality #24, including one that occurred in a parking lot. We include this death, although we do not know the exact cause, since it potentially exhibits the type of problems with SUVs that we have highlighted, namely poor visibility for the driver.

	2022 cases				
#	Date	Vehicle	Location	Victim	Facts/allegations based on police or media reports
1	July 30, 2022, Sat, approx 3:36 am	2007 Lincoln Navigator	Wilson Avenue at Clayson Avenue , Toronto	22-yr-old man, pedestrian	TPS Case #2022-1458223 (Toronto fatal collision #33) – pedestrian was crossing Wilson Ave at Clayson Ave; 42-yr-old man operating Lincoln Navigator eastbound on Wilson Ave; driver struck a westbound Mazda 3, which was stopped for a red light at Clayson Ave, the Lincoln then struck the pedestrian; the pedestrian succumbed to his injuries and was pronounced deceased in hospital; motorist charged with Impaired Driving Cause Death, Fail to Stop at Accident Scene Cause Death etc
2	July 1, 2022, Fri, 11:41 pm	Jeep Grand Cherokee	Wellington Avenue West and University Avenue area	26-yr-old man on sidewalk (32-yr-old male pedestrian suffered severe injuries)	TPS Case #: 2022-1252821 - collision involving three motor vehicles and two pedestrians; 26-yr-old man operating a 2014 Jeep Grand Cherokee westbound on Wellington Ave W; 53-yr-old man operating a 2022 Honda CRV northbound; on University Ave 49-yr-old man operating a 2020 Toyota Corolla northbound on University Ave; the 26-yr-old man drove through the intersection on a red light, collided with the Honda and the Toyota. As a result of this collision, two pedestrians were also struck. Driver of Jeep Grand Cherokee charged with Impaired Operation Cause Death etc. <i>Global News</i> coverage: https://globalnews.ca/news/8963010/university-wellington-gregory-nathan-girgis-collision/ and <i>City TV</i> : https://toronto.citynews.ca/2022/07/03/memorial-victim-fatal-collision/
3	Apr 26, 2022	2019 Subaru Forester	Steeles Avenue East and Bluffwood Drive area	100-yr-old woman, pedestrian	TPS Case #: 2022-774562 - Woman walking westbound on the south sidewalk of Steeles Ave E towards Bluffwood Dr; the driver was waiting to make a right turn from northbound Bluffwood Dr onto eastbound Steeles Ave E; 64-yr-old male driver of the vehicle made contact with the woman
4	Mar 31, 2022, 5:15 pm	2020 Cadillac XT6 SUV	Lakeshore Blvd W and Superior Ave	75-yr-old man and 43-yr-old woman, pedestrians	TPS Case #: 2022-598961: 36-yr-old man was driving eastbound on Lakeshore Blvd W and Eighth St; a 75-yr-old man and 43-yr-old woman were crossing at a crosswalk from the north side of Lakeshore Blvd W and Superior Ave; the vehicle was travelling at a high rate of speed as it approached the crosswalk and did not stop; the vehicle struck the man and woman
5	Mar 6, 2022, Sun, approx. 3:21 pm	2021 Ford SUV	Bond Street and Dundas Street East area	45-yr-old person, sitting on sidewalk	TPS case #: 2022-425405 - 59-yr-old man was driving a black 2021 Ford SUV out of a parking lot onto Bond St; a 45-yr-old man was sitting on the sidewalk on the east side of Bond St, south of Dundas St E; the man was struck by the SUV on the sidewalk suffering serious injuries, and later died.

Appendix B – road deaths in City of Toronto involving heavy trucks for 2021
(and deaths to date in 2022)

	2021 cases				
#	Date	Vehicle	Location	Victim	Facts/allegations based on police or media reports
1	Nov 18, 2021,	cement truck	Sherbourne Street at	59-yr-old woman, in wheelchair	TPS Case #2021-2221731 (Fatal Collision #53) - woman in a wheelchair was crossing Dundas St E at Sherbourne St.; a man was operating a cement truck southbound on Sherbourne St, toward

	Thurs, 9:59 am		Dundas Street East		Dundas St E and struck the woman; the woman died from her injuries at the scene.
2	Aug 18, 2021, Wed, approx 6:10 pm	cement truck	Avenue Road and Bloor Street West area	18-yr-old man, riding bicycle	TPS Case #2021-1570554 (Fatal Collision #26) - 18 yr-old man riding a bicycle was travelling northbound in the curb lane of Avenue Rd north of Bloor St W; 50-yr-old man operating a cement truck northbound on Avenue Rd also in the curb lane struck the cyclist; the cyclist succumbed to his injuries at the scene (<i>see also</i> : https://toronto.ctvnews.ca/he-was-a-good-boy-18-yr-old-cyclist-struck-and-killed-by-cement-truck-was-weeks-away-from-starting-university-1.5553717)
3	Apr 27, 2021, Tues, 3:10 pm	dump truck	Danforth Avenue and Main Street.	82-yr-old woman, in wheelchair	TPS Case #2021-772458 (Fatal Collision #6) - woman in wheelchair was crossing from the south east corner to the north east corner of Danforth Ave and Main St; a 53-yr-old man driving a dump truck northbound on Main St, turned right to head eastbound on Danforth Ave and struck the woman in the wheelchair using the crosswalk; the woman succumbed to her injuries at the scene.
4	Apr 15, 2021 Thurs, 3:31 pm	dump truck	Finch Avenue West at Sentinel Road.	46-yr-old man, pedestrian	TPS Case #2021-692826 (Fatal Collision #4) - 46-yr-old man was crossing Finch Ave W from the north to the south; the man was struck by a dump truck travelling westbound on Finch Avenue West; the man suffered significant injuries and succumbed to his injuries at the scene
	2022 cases				
#	Date	Vehicle	Location	Victim	Facts/allegations based on police or media reports
1	Apr 5, 2022, Tues, approx 12:30 pm	2008 Black International 990 Tractor Trailer	Finch Avenue West at Highway 400, Toronto	64-yr-old woman, pedestrian	TPS Case #2022-630643 - officers responded to a call for a collision on Finch Avenue West at Highway 400 ; a 64-yr-old woman was walking west along Finch Ave W near the off ramp from southbound Hwy 400; a 39-yr-old man was driving a westbound; the pedestrian was struck by the Tractor Trailer in the curb lane; she succumbed to her injuries and was pronounced deceased at the scene. See also <i>City News</i> : https://toronto.citynews.ca/2022/04/05/pedestrian-fatal-finch-highway-400/

Appendix C – Additional cases involving pickups, SUVs, and heavy trucks in Ontario

	2021 cases				
	Date	Vehicle	Location	Victim	Facts/allegations as reported in police or media accounts
1	Nov 30, 2021, Tues, approx 5:21	Subaru SUV	Jane St at Humberview Rd	65-yr-old pedestrian, life threatening injuries	TPS Case #2021-2309701 - 58-yr-old man was driving a Subaru SUV was travelling north on Jane Street; he turned left onto Humberview Rd; 65-yr-old man was walking south on the sidewalk and began to cross Humberview Rd; the Subaru struck the pedestrian; the man was transported to hospital with life-threatening injuries
2	Nov 13, 2021, Sat, approx 6:38 p.m.	GMC truck	Yonge Street near Du Maurier Boulevard.	87-yr-old woman, life threatening injuries	TPS Case #2021-2189879, Personal Injury Collision #56 - pedestrian struck on Yonge St near Du Maurier Blvd; 41-yr-old man was operating a blue GMC truck northbound on Yonge Street; an 87-yr-old woman was crossing Yonge St, mid-block, near Du Maurier Blvd; the woman was hit by the truck and taken to hospital with life-threatening injuries
3	Nov 12, 2021 Fri, approx 8:16 am	tractor trailer truck	Norfinch and Finch Ave W, east of Hwy 400	42-yr-old woman, pedestrian,	TPS Case #2021-2178839; Personal Injury Collision 54 - personal injury collision involving a tractor trailer and a pedestrian in the Norfinch Drive and Finch Avenue West area; a 61-yr-old man was driving a tractor trailer southbound on Norfinch Drive; he made a right turn

				life-threatening injuries	onto Finch Avenue West and struck a 42-yr-old woman; Right-turning truck; https://globalnews.ca/news/8370500/norfinch-drive-finch-avenue-collision/
4	Nov 7, 2021, Sun, approx. 3:20 p.m.	GMC Terrain	Westlake Avenue and Lumsden Avenue	64-yr-old woman, pedestrian, life threatening head injuries	TPS Case #2021-2145567, Personal Injury Collision #53 - pedestrian struck just south of the intersection of Westlake and Lumsden Ave; a 58-yr-old man was driving a black GMC Terrain southbound on Westlake Ave, proceeding through the intersection of Lumsden Avenue; a woman was crossing from the west side to the east side of Westlake Ave south of Lumsden Ave; she was struck by the vehicle travelling southbound; the woman was taken to hospital with life-threatening head injuries
5	Aug 30, 2021, Mon, approx 11 p.m.	Toyota SUV	in front of 1618 Bloor Street West, Toronto	34-yr-old man, driving motorcycle, fatality	TPS Case #2021-1657809, Fatal Collision #33/2021, 34-yr-old man riding Yamaha motorcycle westbound on Bloor St W, west of Dorval Road; a 56-yr-old man was in a Toyota SUV when he pulled away from a parking spot, with the intention of travelling westbound; the motorcycle struck the driver's side of the Toyota causing the rider to lose control, cross Bloor St W and hit a parked van; the rider suffered critical injuries and succumbed to the injuries on scene
6	July 29, 2021, Thurs, 3:20 p.m.	2021 Hyundai Tuscon	Kipling Avenue and Jutland Road area, Toronto	37-yr-old man, driving motorcycle, fatality	TPS Case #2021-1428194, Fatal Collision #23 - collision involving motor vehicle and motorcycle on Kipling Avenue and Jutland Road area; a 37-yr-old man operating a 2008 Suzuki motorcycle northbound on Kipling Ave; 17-yr-old man operating 2021 Hyundai Tuscon attempted to make a left turn from a gas station to proceed southbound on Kipling Ave, and collided with the 37-yr-old man on the motorcycle who suffered fatal injuries and was pronounced deceased at scene.
7	July 19, 2021, Mon, 9:08 pm	Pickup truck	11 Polson Street	Pedestrian (re-classified as homicide)	TPS Case #2021-1359540 (reclassified as homicide) - there was an argument and one man got into a pick-up truck and deliberately struck a pedestrian; the pedestrian succumbed to their injuries and was pronounced deceased at the scene Driver charge with Second Degree Murder and Attempted Murder.
	2022 cases				
	Date	Vehicle	Location	Victim	Facts/allegations based on police or media reports
1	May 19, 2022, Thurs, evening	Heavy truck	Wentworth and Simcoe Sts., Oshawa	16-yr-old boy, on bicycle	CP24 media report: https://www.cp24.com/news/cyclist-dies-after-collision-in-oshawa-1.5911665?fbclid=IwAR3O9W6MYRpVV2EfZ9txMYv1POOBnNwWamUOA_Gv4Dg8FYgopNXxY8S_-4k
2	May 25, 2022, Wed, approx 4:20 pm	2016 Mack Truck	Eglinton Avenue West and Allen Road area, Toronto	38-yr-old man, construction worker (NOTE: listed as industrial accident)	TPS Case #2022-948100: construction worker at a job site in the Eglinton Ave W and Allen Rd area; the driver of a cement truck was manoeuvring his truck to get into position; 36-yr-old man driving the cement truck made contact with the construction worker; the worker suffered fatal injuries and was pronounced on scene
3	May 22, 2022, Sun, 7:11 pm	Ford F150 pickup	Toronto Queen Street East Kingswood Drive area, Toronto	68-yr-old male, driver	TPS case - police received a report of a single motor vehicle collision; single occupant as he drove southbound on Kingswood Drive towards Queen St E; the man lost control of his vehicle for unknown reasons, and crossed the intersection of Kingswood Dr and Queen St E and struck a garage on the south side of the intersection; the man was pronounced dead at the scene.
4	Apr 19, 2022	2021 black GMC Sierra pickup truck	Lakeshore Boulevard West, near	23-yr-old driver of other vehicle	TPS Case #: 2022-729543 - 23-yr-old man was driving a 2007 grey Toyota Camry eastbound in the westbound lanes of Lakeshore Boulevard; a 32-yr-old man was driving a 2021 black GMC Sierra

			Lake Crescent, Toronto	critically injured	Pickup Truck westbound on Lakeshore Boulevard; the two vehicles collided head on; as a result, the driver of the Toyota suffered life-threatening injuries and was transported to hospital; the other driver suffered minor injuries
5	Apr 22, 2022, Fri, approx 10:06 am	Mack truck	Spadina Avenue at Queen Street West, Toronto	39-yr-old man, riding bicycle suffered life-threatening injuries	TPS Case #: 2022-746819 - 52-yr-old man was driving a green 2016 Mack Truck, southbound on Spadina Ave at Queen St W; 39-yr-old male cyclist was also travelling southbound on Spadina Avenue in the same area; collision occurred just south of the intersection; collision in the Spadina and Queen St W area; driver of green 2016 Mack Truck was southbound; a 39-yr-old male cyclist was also travelling southbound on Spadina Ave in the same area; they were involved in a collision just south of the intersection
6	Apr 12, 2022, Tues	2010 Mercedes B200	Danforth Road and Mackinac Cres, Toronto	Serious injuries to both drivers	TPS case: personal injury collision involving two motor vehicles; a 28-yr-old man was driving a black 2010 Mercedes B200 southbound on Danforth Road when it crossed the centre lane into oncoming traffic; a 36-yr-old man was driving a 2010 black Toyota Matrix travelling northbound on Danforth Road; as a result, the two vehicles collided head on; the man, 36, was transported to the hospital with life-threatening injuries; the man, 28, was also transported to hospital with serious injuries
7	Mar 20, 2022, Sun	Chevrolet Silverado 2500HD Double Cab 4x4 pickup truck	Bathurst Street and Niagara Street, Toronto	18-yr-old woman and a 26-yr-old woman suffered injuries	TPS Case #2022-518219 - collision involving vehicle and two female pedestrians at east crosswalk of the intersection at Bathurst St and Niagara St; unknown driver was driving a 2015-2019 white pickup; travelling southbound on Bathurst Street; vehicle completed a left turn onto Niagara St and struck an 18-year-old woman and a 26-yr-old woman, who were crossing southbound in the marked crosswalk; both women were rushed to hospital with serious injuries; white Chevrolet pickup truck fled the scene eastbound along Niagara Street (see also: https://www.toronto.com/news/crime/3-suspects-wanted-in-hit-and-run-investigation-after-2-pedestrians-seriously-injured-in-toronto/article_4bef1dac-27a0-5461-a20b-8602cc52798f.html)
8	Mar 7, 2022, Mon	2017 Chevrolet pickup truck	near Joicey Boulevard and Bathurst Street, Toronto	81-yr-old woman, pedestrian, life threatening injuries	TPS Case #2022-429734: collision involving a vehicle and a pedestrian near Joicey Boulevard and Bathurst Street ; a man, 34, was driving a white 2017 Chevrolet pickup truck westbound on Joicey Boulevard, making a left turn to head southbound on Bathurst Street; a 81-yr-old pedestrian was crossing Bathurst Street on the south side of Joicey Boulevard, from the west side to the east side; the vehicle struck the pedestrian while making the turn
9	Mar 6, 2022	2018 BMW M4	Intersection of Lake Shore Blvd W and Jameson Ave	19-yr-old, passenger, in vehicle	TPS case - single motor vehicle collision - a 30-yr-old man was operating vehicle, EB on Lake Shore Blvd W at a high rate of speed; the driver crossed over into the westbound lanes and struck a concrete barrier; (May 13, 2022, driver turned himself in to investigators at Traffic Services, then charged with Dangerous Operation of a Conveyance Causing Death and Impaired Driving Cause Death) See also: https://www.durhamradionews.com/archives/154711
10	Feb 10, 2022; approx. 6:08 am	2007-2010 Hyundai Santa Fe	The Queensway at Taymall Avenue, Toronto	75-yr-old woman, pedestrian seriously injured	TPS Case #2022-267199: woman was crossing from the south side to north side of The Queensway at Taymall Ave; she was struck by a west-bound vehicle and thrown into the westbound lanes; the driver of the vehicle stopped and exited the vehicle, but then returned to the vehicle and fled the scene of the collision; the woman was located and assisted by a citizen; the woman was transported to hospital with serious injuries. Vehicle is described as a 2007-2010 Hyundai Santa Fe silver or grey in colour
11	Feb 3, 2022, Thurs	4-door Jeep Wrangler	Jane Street and Driftwood	67-yr-old pedestrian seriously	TPS Case #2022-226271 - dark-coloured 4-door Jeep Wrangler had stopped westbound on Driftwood Ave; 67-yr-old man was crossing southbound, on Jane Street, in front of the Jeep; he fell to the ground

			Avenue. Toronto	injured (non-life-threa tening)	in front of the Jeep after slipping on the roadway; the Jeep turned, making contact with the fallen man; the pedestrian was dragged approximately 100 meters along the street; pedestrian suffered serious but non-life-threatening injuries
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