

Insuring Autonomy:

How auto insurance will lead through changing risks

JANUARY 2021

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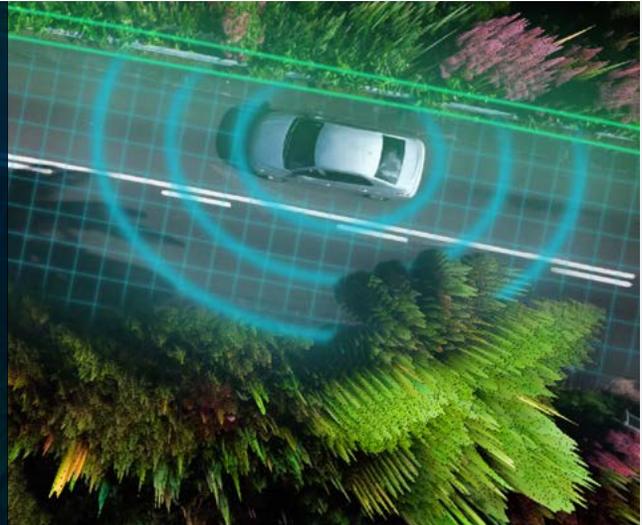
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EXECUTIVE SUMMARY

Since the initial release of this position paper in July 2018, the autonomous vehicle – or “AV” – industry has grown significantly. To reflect these new realities and Travelers’ ongoing commitment to the issue, this 2021 update charts advancements made across the industry, and further expands on topics like insurer subrogation, distracted driving and Travelers’ participation in the AV insurance market. Importantly, our position on insurance for AVs remains unchanged, if not strengthened by our learnings over the last few years. **Auto insurance as we know it today, can – and will – meet society’s needs in an AV world.**

This position paper makes the following key points:

■ Overview: The autonomous vehicle (AV) world today and tomorrow.

- It is important to address public policy questions and challenges in a comprehensive manner that increases public safety, provides peace of mind, protects drivers and pedestrians and spurs innovation.
- Travelers believes that the auto insurance industry should – and will – play a critical role, as lawmakers, regulators and society adapt to the newest mode of transportation.
- Travelers supports all measures that help ensure the safety of our roadways and the company believes AVs ultimately will benefit society by reducing the number of crashes, injuries and lives lost.
- There continue to be many unknowns associated with AVs. For example, how long will it take to transition to a fully autonomous fleet? How long will it take for the anticipated benefits of AVs to be realized? What unintended consequences and disruptions will arise during the transition?

■ Auto insurance can – and will – meet society’s needs in an AV world.

- Travelers believes that leveraging the existing automobile insurance structure, both commercial and personal, is the best method for compensating crash victims quickly and efficiently – now and in the future.
- The current insurance structure is already designed to adapt to evolving risk environments and would minimize regulatory uncertainty, market disruptions and consumer confusion.
- Continuing to rely on auto insurance for coverage, regardless of vehicle type, will also help to ensure consistency during the period in which AVs and driver-operated vehicles share the road.
- Whether a vehicle is autonomous or driver operated, auto insurance offers vehicle owners the most peace of mind when it comes to other concerns such as weather damage or theft.

■ Critical insurance-related components for AV regulation.

- Any proposed legal and regulatory framework governing AVs must include provisions specifically related to auto insurance.
- Vehicle owners should be required to purchase and maintain adequate insurance for their AV, whether it is a personal, ride-hailing or company-owned vehicle. Coverage limits should be high enough to account for more expensive technology in AVs.
- The insurance industry should play a central role in AV policymaking and stakeholder discussions. Local, state and federal lawmakers and regulators must coordinate and seek input from all relevant constituents to ensure a consistent, rational regulatory framework that addresses all potential issues.
- Travelers would support the development of a model state law relating to AV insurance that builds on the current state-based regulatory and oversight structure for auto insurance.
- Travelers engages with coalitions that help educate the public and make recommendations on AV-related issues. Insurers have extensive consumer communication programs and can help educate key groups on AV safety.

As a longtime leader and innovator in both commercial and personal auto insurance, Travelers is well positioned to contribute to this discussion, committed to being a part of the insurance solution for these risks and actively underwriting for risks in the commercial market. We are pleased to outline the company’s position here and look forward to continuing important dialogue across sectors in the years to come.

To learn more, visit travelersinstitute.org.

OVERVIEW:

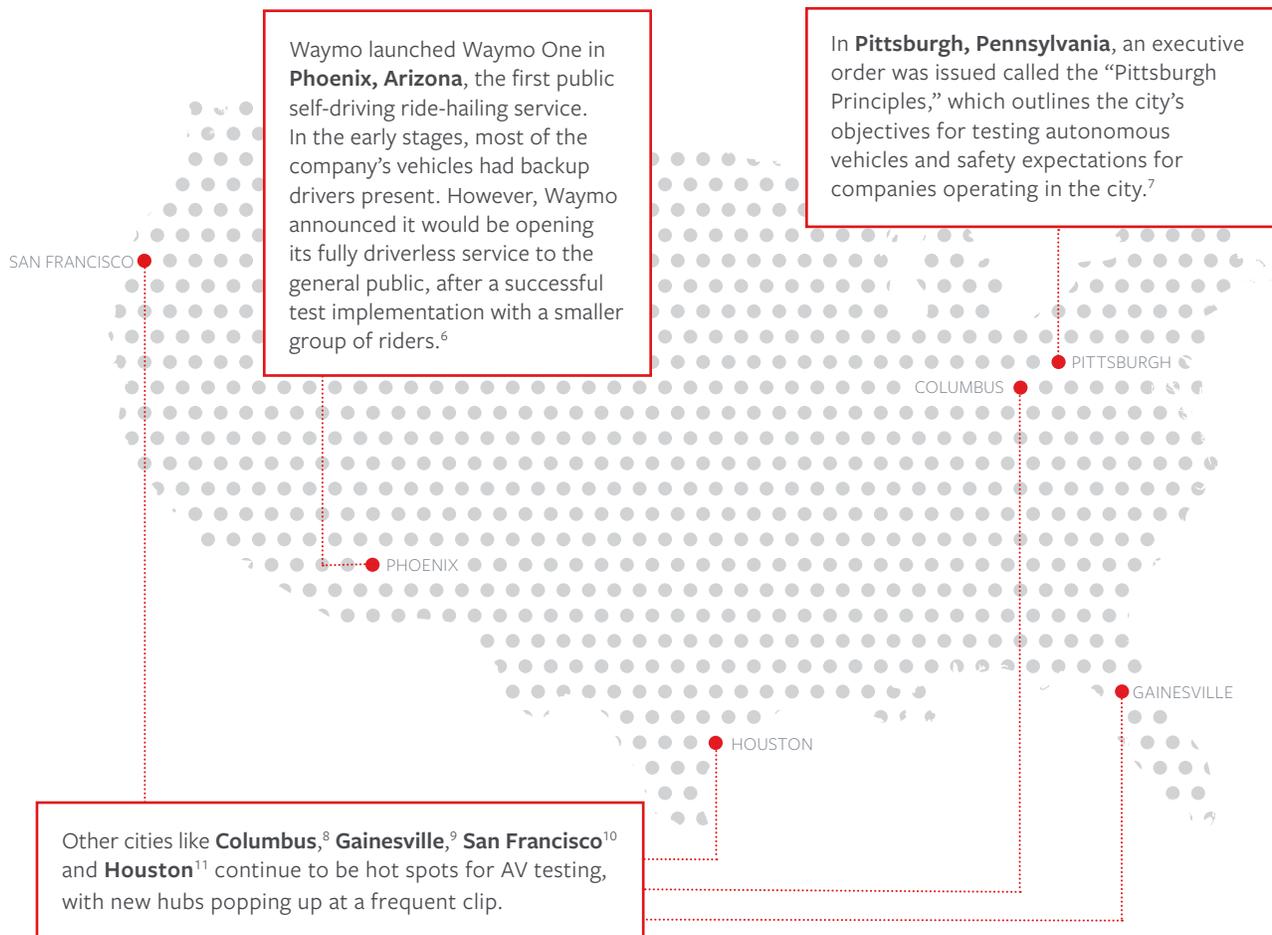
THE AUTONOMOUS VEHICLE (AV) WORLD TODAY AND TOMORROW

The growth of the AV industry has accelerated significantly over the last several years and continues to rapidly expand. As of December 2020, 58 companies had active AV testing permits in the state of California, which is a significant increase since the first publication of this paper in 2018.¹ Those companies collectively drove over 2.8 million autonomous miles on California roads in 2019.² As recently as 2018, the most advanced automated vehicles on the road were defined as Level 2 by the Society of Automotive Engineers (SAE) levels of vehicle automation or “partial automation” vehicles. The first public autonomous ride-hailing service (Waymo One) was launched at the end of 2018, and began fully driverless rides in 2019.³ While this position paper focuses on AVs and the insurance system in the United States, it is important to recognize that countries around the world are also making significant progress in autonomous technologies.

However, progress does come with its challenges. Consumer sentiment, regulatory considerations and infrastructure support present challenges to AV adoption and deployment.

In addition, the effects of the COVID-19 pandemic on the transportation industry have been far reaching. Due to state-wide shutdowns, quarantine rules and regulations, pandemic fears, and a large portion of the country working remotely, miles driven were down 14.5% year over year during the first nine months of 2020, according to preliminary government data.⁴ While crash frequency also dropped, dangerous new trends emerged. For example, traffic fatalities rose 13.1% in the third quarter of 2020 when compared to the corresponding quarter in 2019, according to preliminary data.⁵ While the ultimate effects of the COVID-19 pandemic still remain largely unknown, it had a profound impact on automotive transportation in 2020. Moreover, AVs have the potential to provide transportation in a manner that mitigates exposures arising out of future pandemics.

Cities across the United States continue to embrace the AV wave and many have been identified as hot spots for this technology due to their favorable regulatory environment, heavy tech presence and, in some cases, weather.



Not surprisingly, the AV industry continues to attract significant investment from traditional auto manufacturers and technology companies.

In the last two years, the AV landscape has changed dramatically, with the technology progressing as more and more companies have entered the industry. Today, nearly every major auto manufacturer takes part in the AV ecosystem in some fashion, but it does not stop there. Countless startups and tech giants are also dedicating resources to this industry.

Beyond auto manufacturers and tech companies, academia and insurance companies are also engaging in the AV industry. For example, Carnegie Mellon University in Pittsburgh, Pennsylvania, has been a long-standing contributor to AV technology. In June 2019, it announced a multiyear partnership with AV startup Argo AI, which committed \$15 million to AV sponsored research.¹² In addition, the Massachusetts Institute of Technology (MIT) launched its Advanced Vehicle Technology Consortium in 2015 to, among other goals, better understand how drivers engage with vehicle automation and driver assistance technologies. This academic and industry partnership brings together stakeholders including automakers, insurance companies (Travelers is a member), tier-1 suppliers and research organizations.¹³

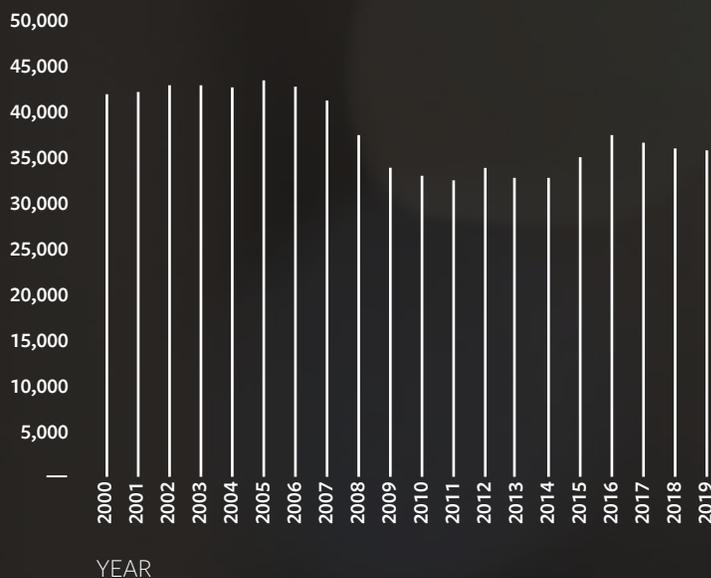
AV research and development appears to be full steam ahead. However, one of the largest barriers is consumer readiness to embrace AV technology. In a 2020 survey conducted by Partners for Automated Vehicle Education, of which the Travelers Institute is a member, nearly three-quarters of respondents stated they believe “AV technology is not ready for primetime,” with 20% of respondents saying they believe AVs will never be safe.¹⁴ While the promise of safer roads and more leisurely drives appeal to some, the difficulty of producing and deploying AV technology still looms in the present.

In the first publication of this paper, we discussed two high-profile crashes involving automated vehicles: the 2018 Tesla Model X crash in Mountain View, California, and the 2018 Uber crash involving an autonomous test vehicle in Tempe, Arizona. Both crashes resulted in fatalities, and in each instance the autonomous system was found partially at fault.

In the case of the Uber crash, which killed a pedestrian crossing the street, it was deemed that the vehicle programming did not include consideration for jaywalking pedestrians, and therefore, did not recognize the pedestrian in its path soon enough to engage emergency braking.¹⁵ How systems handle scenarios like this will be a subject for important discussion as AV adoption becomes more widespread.

With 94% of crashes attributed to driver error as the final, critical reason for the crash,¹⁶ an obvious goal is for AVs to increase roadway safety. However, lower levels of automation that rely partially on automated systems and partially on a human driver can present risks related to misuse, including driver distraction and lack of attention on the road. Driver monitoring systems and driver attention reminder methods may be key factors in maintaining safety during this transition.¹⁷

TOTAL U.S. MOTOR VEHICLE TRAFFIC FATALITIES^{18,19}



The National Highway Traffic Safety Administration (NHTSA) reports that there were 36,096 motor vehicle fatalities in the U.S. in 2019 alone.¹⁸ In addition, as previously noted, early estimates show a 13.1% year-over-year increase in traffic fatalities in the third quarter of 2020, during the COVID-19 pandemic.²⁰

TRENDS TO WATCH

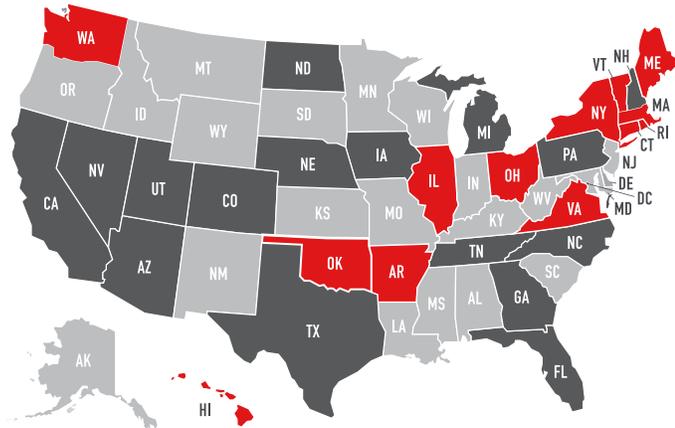
Distracted driving related to technology may be one of many factors contributing to collisions and fatalities. This issue may take on more relevance in the near term as new semi-autonomous technologies requiring driver interventions are rolled out to the public.

The insurance industry may see collision rates decline as AV adoption rises. However, while the industry had been experiencing some level of favorable frequency over the last few years, early predictions of dramatic reductions have not materialized as of 2021.



STATE LAWS ON AUTONOMOUS VEHICLE TESTING OR DEPLOYMENT

- Deployment
- Testing
- No Deployment or Testing Laws



Data Source: Insurance Institute for Highway Safety

Although some experts predict that market saturation for fully autonomous vehicles may not occur for a few more decades, the market is clearly moving in that direction, and policy and regulatory regimes (along with industries like insurance) must adapt now. According to the Insurance Institute for Highway Safety, as of January 2021, 28 states and the District of Columbia have already passed some form of AV legislation.²¹ However, state laws vary in their content and do not currently provide comprehensive AV regulatory frameworks. Some authorize operation of AVs, some promote and/or liberalize requirements for AV testing, and others direct further study on how best to safely deploy AV technology on public roadways.

To date, only a few states have begun to address insurance-specific issues with respect to AVs, and most of those are focused on AV testing requirements. Similarly, only a few states have begun to address insurance requirements for AVs for personal use.

At the federal level, in January 2021, the U.S. Department of Transportation released a set of updated guidelines for automated vehicles, the *Automated Vehicles Comprehensive Plan*. The framework is organized around three goals: promoting collaboration and transparency to stakeholders and the public, modernizing the regulatory environment to remove unnecessary barriers and preparing the transportation system to safely evaluate and integrate automated driving systems.²²

In the policy arena, early state-level movement underscores the need for a comprehensive, rational and uniform AV regulatory structure (recognizing state law likely will continue to govern both insurance and any compensation/liability system). For the reasons we will discuss on the following pages, any regulatory structure should explicitly address insurance-specific issues and needs in the new AV landscape, which will be vital to ensuring a fair and efficient compensation scheme.

AUTO INSURANCE CAN – AND WILL – MEET **SOCIETY’S NEEDS IN AN AV WORLD**

Travelers believes auto insurance is best suited to address the compensation issues (e.g., bodily injury, property damage, cyber incidents) arising from the emerging AV world.

The following section discusses some of the major advantages of using the current insurance structure, versus alternative models (e.g., product liability), as the primary compensation method.

I Auto insurance compensates victims quickly, fairly and efficiently, especially when compared to other risk transfer mechanisms.

Leveraging the current auto insurance structure as the primary risk transfer mechanism in a new AV world allows for greater speed, fairness and efficiency from a consumer’s perspective. The existing insurance structure is designed to quickly make vehicle owners whole and efficiently compensate crash victims for both bodily injury and property damage. In addition, most vehicle owners are familiar and comfortable with the existing insurance structure (e.g., purchasing coverage, having a basic understanding of coverage and policy documents, filing claims) and know how to take advantage of its benefits.

Moreover, the existing auto insurance structure can adapt more effectively than alternative structures to the evolving regulatory and legal environment by creating or enhancing insurance products. Given auto insurers' deep understanding of compensation systems, they are uniquely positioned to assist policymakers in developing or modifying such systems.

While there has not been widespread attention paid to how liability and compensation will be addressed as AVs multiply, product liability has been raised as the inevitable default option. That presumption should be challenged.

Unlike auto insurance, alternative risk transfer mechanisms, such as product liability, are not structured to be primary, comprehensive solutions. In a recent study, the RAND Corporation found that a critical component of an insurance framework for autonomous vehicles is how effectively it will compensate the victims of collisions.²³ A product liability-type regime for AVs that is in lieu of, or with primacy over, the current auto insurance structure could force consumers and victims to pursue complex, lengthy lawsuits to seek compensation. Such suits involve intensive and drawn-out investigative and evidentiary hurdles before anyone sees a day in court.

Further, the product liability legal and regulatory environment is ill-suited for handling auto collisions as the sheer number of discrete incidents would bog down court systems and significantly delay compensation. Victim compensation, if it happens at all, could take years. The RAND Corporation report also states that the large number of automobile crashes that occur today requires "a vast infrastructure of specialists who resolve, adjudicate and repair these claims," and that insurance companies have built teams of experts who specialize in doing just that.²⁴

The Takata air bag case is an example of the limitations of product liability in compensating victims. It has taken well over a decade for this case to proceed through the report filing, regulatory investigation, recall and compensation phases of the product defect regime that governs automakers and equipment manufacturers. Some auto companies have settled with consumers, but others are still embroiled in litigation. This is a particularly striking fact given that the initial product problems and driver injuries occurred in 2004.

Notably, and not surprisingly, the primary risk transfer and compensation mechanism for even more sophisticated modes of transportation (e.g., trains, airplanes, boats) goes beyond product liability and is based upon insurance. For consumers, businesses and regulators, it makes sense that AVs will follow suit.

Using existing auto insurance systems minimizes consumer confusion, regulatory uncertainty and market disruptions.

Fundamentally, there is a high level of certainty and stability for consumers, businesses, regulators and legal systems in the current auto insurance structure. For example, we know that generally all vehicles and drivers are covered with some liability protection. Coverage can be through insurance (most common with the vast majority of drivers), bonds or cash deposits in place of traditional insurance; or proof of ability to pay for an at-fault accident (e.g., in New Hampshire). And auto insurance has a robust legal and regulatory infrastructure with proper, comprehensive consumer protections in place to govern insurance providers and policyholders.



Additionally, auto insurance industry distribution systems are already in place and will evolve to accommodate new technologies and risks. Pricing and underwriting will likely shift to include both driver- and vehicle-based systems. This will allow insurers to play their traditional role in risk mitigation by sending pricing signals vis-a-vis premium differentiation among covered autos to encourage AV technological improvements. In a December 2020 report published by the RAND Corporation, one auto manufacturer is quoted as saying there is “no reason that the current system cannot keep working.” Other experts weighed in, stating that historically the auto insurance industry has remained resilient in the face of technological improvements and innovation.²⁵ Given the technology and data capture that is occurring in real time, insurance policies addressing data sharing may be implemented to help ensure that premiums are appropriately matched to exposures. Insurance companies like Travelers have the sophistication to do this. Further, AVs may present new risks and liabilities (e.g., cybersecurity threats) that may need to be addressed by a new generation of insurance products and coverages.



During the period in which AVs and non-AVs will likely be sharing the road, auto insurance systems must, and will, be able to accommodate and adequately address both types of vehicles. During this transition, a thoughtful compensation system is needed to prevent consumers from becoming mired in lengthy and expensive legal and technical disputes about whether human error or technological malfunction caused a collision. Significantly, the lack of a timely and efficient compensation system could also hinder the more widespread adoption of AVs. Consistency in delivery, customer experience and expectations, with clear “rules of the road” (e.g., regulatory oversight, legal requirements, etc.), are vital to a rational risk transfer regime. If AVs and other vehicles are governed by different primary insurance structures or different liability standards, the resulting consumer confusion and regulatory/enforcement uncertainty may increase expenses associated with contentious liability determinations and market disruptions. Dividing the market in such a way would create a veritable patchwork on the roadways with respect to who is covered, for what, and under which regulatory and legal framework.

Moreover, if separate compensation and liability structures govern and/or have primacy over different types of vehicles and their owners, questions and uncertainty may arise around issues such as appropriate forum, liability and evidentiary standards, and the application of various no-fault-type systems.





During the period in which AVs and non-AVs will likely be sharing the road, auto insurance systems must, and will, be able to accommodate and adequately address both types of vehicles.

Subrogation is already an important element of the auto insurance system.

Today, insurers compensate crash victims for personal injuries and property damage and then, if appropriate, seek to recover those payments from vehicle manufacturers if some defect caused the loss. This process is called subrogation. Several years ago, Toyota faced numerous “sudden acceleration” cases, which were alleged to have been caused by product defects. As there were both property damage and bodily injury claims associated with these Toyota vehicles, auto insurers paid the claims even if there was evidence that the crash might have been caused by a sudden acceleration defect. Subsequent to paying the claims, some of the insurers filed subrogation actions against Toyota.²⁶ This is an important element of the auto insurance system: the claimants are promptly compensated by the insurer, and the insurer then assumes the burden (and has the resources) to pursue the product manufacturer to recover those losses.

These product liability claims can be complex and expensive. Potential product liability claims involving AVs could involve additional complexity and related cost. A system that prioritizes compensation over resolving whether an AV was defective provides the most consistency and certainty to consumers and leverages the existing legal and regulatory frameworks that have routinely adapted to technological advances. Avoidance of these subrogation actions also creates an incentive for AV manufacturers to design and build safer vehicles, which is a key benefit of this system.

Insuring AV risks in the commercial insurance sector today.

Travelers prides itself on the investments it makes to better understand emerging risks and provide marketplace solutions for its insureds. Building partnerships with companies in the AV industry is an excellent example of this. There is a growing market in the commercial insurance sector for AV risks among technology developers, operators, support services, etc., and Travelers is committed to being a part of the insurance solution for these risks.

Travelers is actively engaged and continues to look for opportunities that fit our risk profile. Through extensive research, engagement with experts, industry-related partnerships and thoughtful underwriting, Travelers believes these risks present opportunities for insurers. For progress to continue, it is imperative that insurance markets have solutions for these emerging risks.



Actively partnering with companies in the AV market today has proven to be mutually beneficial for both Travelers and the companies we insure. Insureds benefit from Travelers' risk management and mitigation strategies, developed during our more than 165 years in business, and we continue to refine our underwriting expertise as we further engage in the AV industry. Furthermore, Travelers' state-of-the-art Risk Control team could assist these niche companies by examining and potentially mitigating their risk exposure. As the AV industry continues to mature, Travelers is committed to being an active partner and helping to pave the path forward.

■ Auto insurance will have an important role to play in an AV world.

AV owners will still need coverage for non-collision-related incidents such as weather and theft.

Even with fully autonomous vehicles, human involvement will not disappear and individuals will still need auto insurance. For the foreseeable future, vehicles with some driver involvement will continue to face issues around liability for crashes. As increasingly distracting technologies are employed in partially automated vehicles, liability insurance may become even more important.

Also, vehicle maintenance by owners (e.g., getting tires and brakes fixed, installing technology/software updates, sensor maintenance) can result in personal responsibility and liability, which is properly addressed through insurance. Further, AV owners will still need coverage for non-collision-related incidents such as theft and weather damage. Product liability simply does not cover the entirety of essential coverage areas related to vehicle operation and ownership.

Finally, AV owners – like all other vehicle owners – want peace of mind that they are protected against the costs of unforeseen events. Auto insurance provides consumers with 24/7 protection, unlike other risk transfer systems that are dependent upon specific legal criteria and/or circumstances (e.g., a provable mechanical or design product malfunction/defect).

CRITICAL INSURANCE-RELATED COMPONENTS FOR AV REGULATION

Any comprehensive AV legal/regulatory structure must include insurance-specific policies.

Travelers recommends the following to address pressing insurance-related issues associated with AVs:

Specifically address insurance liability standard as the primary risk transfer mechanism.

Today, there are several risk transfer and liability schemes governing and impacting the auto market. These include insurance, common law negligence, various no-fault and personal injury protections, statutory systems, product liability, Federal Trade Commission representation and advertising regulations, state claims practice acts, fraud laws and licensing requirements. While Travelers anticipates that this will be the case in an AV world as well, the company believes that auto insurance should play the same primary risk transfer role in that world as it does now for non-AVs.

Notably, legal systems are already considering how to address novel compensation issues surrounding AV collisions. For example, in its review of a fatal crash involving a Tesla vehicle, the National Transportation Safety Board (NTSB) determined that use of the Tesla autopilot feature contributed to the crash, along with the two drivers involved.²⁷ The decision demonstrates the ability of our existing legal system to evaluate the complex and varied risks presented by the emerging AV world.



The insurance industry will adapt to this increased complexity, and Travelers is ready to lend its expertise to regulators and legislators who are working through these changes.

Thus, any public policy proposals regarding governance of AV liability should specifically address compensation systems and insurance liability standards, including who is responsible for obtaining coverage. As with the current auto insurance system, AV owners should be responsible for obtaining and maintaining adequate insurance. This should apply whether the vehicle is for personal, ride-hailing or company use.

Because there may be many possible approaches to liability and compensation for AVs, including systems that may not exist today, a framework is needed to evaluate various options. An AV liability system should be evaluated on its ability to achieve the best balance of the following three objectives:

- **Provide full and timely compensation for victims** – Injured parties should be made whole without delay.
- **Efficient claim resolution** – Minimize expensive and protracted liability determinations for most crashes.
- **Encourage adoption of AVs and increased safety of AVs** – A liability system should encourage the AV industry to achieve safer outcomes. Insurers have encouraged safer vehicles for decades through risk pricing, safety research conducted by the Insurance Institute for Highway Safety and other efforts.

■ Provide for sufficient coverage limits at the vehicle level.

Although Travelers anticipates that eventually fewer collisions will occur with more AVs on the road, collisions that do occur could be more costly, particularly with respect to vehicle damage. The parts used in vehicles with AV technology are more costly to repair or replace. The industry is seeing this today as more and more vehicles are coming equipped with the latest in Advanced Driver Assistance Systems (ADAS) technology.

Therefore, any insurance scheme must require sufficiently high coverage limits, including adequate limits for property damage to address more expensive technology in AVs. Higher minimum limits, especially for bodily injury, may also provide peace of mind and remove barriers to societal adoption of AVs.

■ Standardize data governance and cybersecurity requirements.

AVs present new questions and opportunities with respect to data collection and management, which have only been heightened by recent developments related to social media data and privacy. While Travelers is agnostic with respect to who develops and imposes data management requirements, the company supports standardization (via legislation or regulation, for instance) of data collection, sharing, storage and security requirements.

To facilitate an effective and efficient AV auto insurance system, the government should require timely data sharing (by auto manufacturers and others who obtain data on crashes and AV performance) with insurance providers, while ensuring adequate protections for consumer privacy. Sharing data with insurers has the potential to help facilitate insurance coverage in several ways, including:

- Establishing liability/causation in the event of a crash (a function performed by the insurance carrier, not the customer).
- Assisting with accurate underwriting and pricing of insurance policies.
- Supporting risk mitigation and control activities (e.g., via software updates).

Ultimately, standardization of data governance and assurance of data sharing with insurers benefit all parties involved, including vehicle owners, collision victims, manufacturers and insurance providers.

NHTSA introduced the Automated Vehicle Transparency and Engagement for Safe Testing (AV TEST) Initiative in June 2020. This initiative includes a platform that allows companies to voluntarily share information about any current on-road testing.²⁸ This is a positive step toward companies making testing information more widely available to the public and signals that NHTSA understands the importance of a centralized, publicly available data collection system.

Further, Travelers supports the creation of an expert advisory board or committee to help address data and cybersecurity issues, including how these issues are related and how they can effectively be addressed together. Insurer representation on any such body would be essential.





Travelers supports developing strong cybersecurity requirements for AVs – an issue that is intertwined with the creation of data management standards. Cyber-related risks impact the safety of our communities in an AV world, and thus must be addressed. This also highlights the need for appropriate data sharing protocols. If a cyber incident occurs, it will be important to have the data explaining what happened, not only for insurance-related purposes, but also for future risk mitigation and preventive efforts.

Ensure representation of the insurance industry in policymaking and stakeholder forums.

Travelers supports using advisory boards and task forces comprising private and public sector experts to help inform AV policymaking processes and content, and we encourage public policies that ensure the insurance industry has a seat at the table. Many stakeholder groups beyond insurers will have an interest in the development and implementation of new AV policies, including consumer groups, manufacturers, technology developers and suppliers, attorneys, regulators, legislators, public policy academics/researchers and countless others. Travelers has already joined a number of these cross-sector coalitions, including Partners for Automated Vehicle Education (PAVE) and MIT's Advanced Vehicle Technology Consortium. Travelers is also hosting educational programming to advance consumer education and industry dialogue about AVs through its public policy division, the Travelers Institute.

Insurers will have unique and valuable insights into several key issues that will likely arise from AV technology, such as risk assessment and mitigation, big data analysis, the functioning of comprehensive liability regimes and navigating state-federal coordination issues. As a longtime industry leader and innovator in both commercial and personal insurance, Travelers is well positioned to contribute to these policymaking discussions. Additionally, Travelers supports and would be willing to lead the creation of a non-government stakeholder coalition to address and make recommendations with respect to insurance-related AV issues.

Promote communication and coordination between policymakers and other stakeholders.

Many lawmakers and regulators at the local, state and federal levels are grappling with the policy challenges and opportunities related to the AV world, as are private industry groups and individual companies. Coordination among these players is essential to develop a coherent and rational regulatory structure that will promote growth and adoption of AV technology, as well as public safety, during the transition to AVs.

One important step is public-private cooperation via standing advisory boards or similar structures. Such bodies generally promote consensus building and creation of best practices, while also recognizing the need for flexibility to promote consumer-driven, private-market competition and innovation.



At the policymaker level, Travelers encourages local, state and federal officials to work together to the greatest extent possible. The current state-based regulatory and oversight structure for insurance is well established and provides certainty for businesses and consumers. To build upon this existing structure and promote uniformity between AV-related insurance approaches – both during the AV transition/testing phase and after fully autonomous vehicles are publicly available – Travelers would support development of a model state law, as well as collaboration between the U.S. Department of Transportation and state regulators (perhaps through the National Association of Insurance Commissioners).

Finally, Travelers encourages all policymakers to communicate openly and regularly with the public as policy discussions are conducted and decisions are made. Transparency in the process will encourage public trust with respect to evolving AV technology and related safety measures.

Utilize existing insurer delivery systems to communicate with consumers.

As noted, automated vehicles will likely require some level of human involvement for the foreseeable future. Accordingly, there may be opportunities to increase safety by educating drivers about the evolving technology and their roles and responsibilities with respect to driving functions. To the extent that government officials develop consumer notification standards and requirements regarding AV technology, safety guidelines, distracted driving notifications and other important information, Travelers and other insurers can use their extensive delivery systems to facilitate communication of those standards to consumers.

Unsafe driving behaviors, like distracted driving, will continue to present challenges.

The evolution toward AVs may eventually help reduce collisions that occur today due to distracted driving. In the meantime, unsafe driving behaviors will continue to present challenges. A Travelers survey in September 2020 found that 37% of American consumers reported using social media while driving, and another 36% reported shopping online behind the wheel.²⁹

In the lead-up to a fully autonomous transportation system and during the transition period, Travelers is taking on roadway safety issues like distracted driving through its *Every Second Matters*[®] education campaign, led by the Travelers Institute, its public policy division.

The campaign, which launched in 2017, recognizes that every driver, passenger, cyclist and pedestrian has a role to play in combating distraction and enhancing roadway safety. Programs held at universities, industry and transportation safety conferences and other public events provide valuable insights on distracted driving risks.



**EVERY
SECOND
MATTERS[®]**

The *Every Second Matters*[®] initiative stands on three key principles:

- Creating a **social stigma** around distracted driving.
- Increasing understanding about **situational awareness** by all roadway users, including elevating the conversation about **pedestrian** and **cyclist safety**.
- Examining scalable **technology** and InsurTech solutions.

To learn more, visit travelersinstitute.org.



CONCLUSION

In summary, Travelers believes that auto insurance can, and will, meet society's needs in an AV world by continuing to compensate affected consumers with speed, fairness and efficiency. Also, any comprehensive AV legal/regulatory structure must include insurance-specific components, including:

- Addressing insurance liability standards as the primary risk transfer mechanism.
- Providing for sufficient coverage limits at the vehicle level.
- Standardizing data governance and cybersecurity requirements.
- Ensuring representation of the insurance industry in policymaking and stakeholder forums and discussions.

Travelers is committed to offering an insurance solution for AV risks and is providing coverage to AV companies that fit our risk profile in the commercial sector. Travelers looks forward to working with policymakers and other stakeholders to develop AV insurance policy and regulations that make sense for and benefit this growing industry and its consumers.



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About the Travelers Institute

Travelers established the Travelers Institute as a means of participating in the public policy dialogue on matters of interest to the property casualty insurance sector, as well as the financial services industry. The Travelers Institute draws upon the industry expertise of Travelers senior management and the technical expertise of its risk professionals and other experts, to provide information, analysis and recommendations to public policymakers and regulators.



- ¹ State of California, Autonomous Vehicle Testing Permit Holders. <https://www.dmv.ca.gov/portal/vehicle-industry-services/autonomous-vehicles/autonomous-vehicle-testing-permit-holders/>
- ² State of California, Disengagement Reports. 2019 Autonomous Mileage Reports (CSV). <https://www.dmv.ca.gov/portal/vehicle-industry-services/autonomous-vehicles/disengagement-reports/>
- ³ Waymo, “Waymo One: A year of firsts.” Waypoint: The official Waymo blog. 5 Dec. 2019. <https://blog.waymo.com/2019/12/waymo-one-year-of-firsts.html>
- ⁴ Federal Highway Administration, September 2020 Traffic Volume Trends. [https://www.fhwa.dot.gov/policyinformation/travel_monitoring/20septvt/#:~:text=September%202020%20Traffic%20Volume%20Trends&text=The%20seasonally%20adjusted%20vehicle%20miles,miles\)%20compared%20with%20August%202020.](https://www.fhwa.dot.gov/policyinformation/travel_monitoring/20septvt/#:~:text=September%202020%20Traffic%20Volume%20Trends&text=The%20seasonally%20adjusted%20vehicle%20miles,miles)%20compared%20with%20August%202020.)
- ⁵ U.S. Department of Transportation. National Highway Traffic Safety Administration. Early estimate of motor vehicle traffic fatalities for the first 9 months (Jan-Sep) of 2020 (December 2020). <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813053>
- ⁶ Waymo, “Waymo is opening its fully driverless service to the general public in Phoenix.” Waypoint: The official Waymo blog. 8 Oct. 2020. <https://blog.waymo.com/2020/10/waymo-is-opening-its-fully-driverless.html>
- ⁷ City of Pittsburgh, “Mayor William Peduto Issues Transformative Policies for Autonomous Vehicle Testing and Development.” Press release. 4 Mar. 2019. <https://pittsburghpa.gov/press-releases/press-releases/2724>
- ⁸ SMRT Columbus, Self-Driving Shuttles. <https://smart.columbus.gov/projects/self-driving-shuttles>
- ⁹ Gainesville.com, “Autonomous vehicle testing begins.” News article. 3 Feb. 2020 <https://www.gainesville.com/news/20200203/autonomous-vehicle-testing-begins>
- ¹⁰ Reuters, “Driverless race steps up with Cruise allowed to drive empty in San Francisco.” News article. 15 Oct. 2020. <https://www.reuters.com/article/us-autonomous-cruise-san-francisco-idUSKBN2702K0>
- ¹¹ Inverse, “SMALL BUT FIERCE: NURO’S DRIVERLESS DELIVERY VEHICLE IS COMING TO HOUSTON.” News article. 6 Feb. 2020. <https://www.inverse.com/innovation/us-regulators-greenlight-nuro-r2-autonomous-delivery-vehicle>
- ¹² Carnegie Mellon University, Carnegie Mellon, Argo AI Form Center for Autonomous Vehicle Research. <https://makepossible.cmu.edu/argo-ai/>
- ¹³ Massachusetts Institute of Technology. The Advanced Vehicle Technology Consortium (AVT). <https://agelab.mit.edu/avt>
- ¹⁴ PAVE, “PAVE POLL: AMERICANS WARY OF AVS BUT SAY EDUCATION AND EXPERIENCE WITH TECHNOLOGY CAN BUILD TRUST.” Press release. 19 May 2020. <https://pavecampaign.org/pave-poll-americans-wary-of-avs-but-say-education-and-experience-with-technology-can-build-trust/>
- ¹⁵ National Transportation Safety Board, Accident Report: Collision Between Vehicle Controlled by Developmental Automated Driving System and Pedestrian. March 2018. <https://www.ntsb.gov/investigations/AccidentReports/Reports/HAR1903.pdf>
- ¹⁶ U.S. Department of Transportation, National Highway Traffic Safety Administration, Critical Reasons for Crashes Investigated in the National Motor Vehicle Crash Causation Survey. February 2015. <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812115>
- ¹⁷ Insurance Institute for Highway Safety, “Automated systems need stronger safeguards to keep drivers focused on the road.” News article. 12 Mar. 2020. <https://www.iihs.org/news/detail/automated-systems-need-stronger-safeguards-to-keep-drivers-focused-on-the-road>
- ¹⁸ U.S. Department of Transportation, National Highway Traffic Safety Administration, Preview of Motor Vehicle Traffic Fatalities In 2019. October 2020. <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813021>
- ¹⁹ U.S. Department of Transportation. National Highway Traffic Safety Administration, Motor Vehicle Traffic Fatalities and Fatality Rates, 1899-2018. 2020. <https://cdan.nhtsa.gov/tsftables/Fatalities%20and%20Fatality%20Rates.pdf>
- ²⁰ U.S. Department of Transportation. National Highway Traffic Safety Administration. Early estimate of motor vehicle traffic fatalities for the first 9 months (Jan-Sep) of 2020 (December 2020) <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813053>
- ²¹ Insurance Institute for Highway Safety. Deployment of highly automated vehicles. <https://www.iihs.org/topics/advanced-driver-assistance#automation>
- ²² U.S. Department of Transportation, Automated Vehicles Comprehensive Plan, 11 Jan. 2021. <https://www.transportation.gov/av/avcp>
- ²³ Stanley, Karlyn D., Michelle Grisé, and James M. Anderson, Autonomous Vehicles and the Future of Auto Insurance. Santa Monica, CA: RAND Corporation, 2020. https://www.rand.org/pubs/research_reports/RRA878-1.html
- ²⁴ Ibid.
- ²⁵ Ibid.
- ²⁶ CBS News, “7 Insurers Sue Toyota Over Acceleration Claims.” News article. 4 Jan. 2011. <https://www.cbsnews.com/news/7-insurers-sue-toyota-over-acceleration-claims/>
- ²⁷ National Transportation Safety Board, Collision between a Car Operating with Automated Vehicle Control Systems and a Tractor-Semitrailer Truck. 7 May 2016. <https://www.ntsb.gov/news/events/Documents/2017-HWY16FH018-BMG-abstract.pdf>
- ²⁸ U.S. Department of Transportation, National Highway Traffic Safety Administration, New Test Tracking Tool. <https://www.nhtsa.gov/automated-vehicles-safety/av-test-initiative-tracking-tool>
- ²⁹ Travelers, “Travelers Releases ‘Zaadii: The Legend of Z-Hawk’ during New York Comic Con’s Metaverse to Honor a Life Cut Short by Distracted Driving” Press release. 8 Oct. 2020. <https://investor.travelers.com/newsroom/press-releases/news-details/2020/Travelers-Releases-Zaadii-The-Legend-of-Z-Hawk-during-New-York-Comic-Con-Metaverse-to-Honor-a-Life-Cut-Short-by-Distracted-Driving/default.aspx>



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