The death of a pedestrian in an Arizona incident involving an Uber self-driving vehicle this week is prompting a renewed examination of autonomous vehicle research and regulation. But it’s far from the only story that finds ride-hailing companies at the center these days. The impacts of services like Uber and Lyft on urban congestion, public transit, the taxi and parking industries, data sharing, access to health care services and trucking are also receiving scrutiny. All of these could have significant implications for policymakers in the years ahead.

Ride-Hailing & Autonomous Vehicle Technology

A 49-year-old homeless woman in Tempe, Arizona was hit and killed by a self-driving Volvo operated by Uber on March 18. The incident, which was the nation’s first pedestrian death involving an autonomous vehicle, has prompted a variety of reactions as to what it means for the future of autonomous vehicle research, the role of ride-hailing companies in that research and Arizona’s role as one of the major testing grounds for self-driving cars.

Following the incident, Uber announced they were suspending autonomous vehicle testing in the Phoenix metro area (including Tempe), Pittsburgh, Toronto and San Francisco. Toyota also announced it would suspend testing of autonomous vehicles on public roads near its research center in Ann Arbor, Michigan, and in the San Francisco area, according to The New York Times.

Local law enforcement initially appeared to place blame on the victim, who was crossing a multi-lane corridor with scant crosswalks and crossing about 100 yards away from the nearest crosswalk, The San Francisco Chronicle reported. Tempe policy chief Sylvia Moir told the newspaper “it’s very clear it would have been difficult to avoid this collision in any kind of mode (autonomous or human-driven) based on how she came from the shadows right into the roadway.”

The Tempe Police Department later released video of the moments before the Uber struck the pedestrian. It includes video from inside the car that appears to show the human safety driver looking down, perhaps at a mobile device, until he sees the woman crossing the street with a bicycle but too late to react.

The National Transportation Safety Board (NTSB) sent a team to Arizona to investigate the incident. Streetsblog USA noted that the detection of people walking or biking is a known weak point in the development of autonomous cars.

David King, an urban planning professor at Arizona State University, told City Lab the location of the crash—and how it happened—raises red flags about Uber’s approach to road safety. King said based on what is known about Uber’s technology, a pedestrian or other foreign object should have been readily detected by the autonomous vehicle.

Wired magazine’s article on the incident suggests it “could alter the course of a scantly regulated,
poorly understood technology that has the power to save lives and create fortunes."

Arizona Gov. Doug Ducey signed an updated executive order [10] earlier this month giving companies permission to test or operate fully driverless vehicles in the state. Arizona does not require self-driving vehicles to have any special permit, only a standard vehicle registration. Operators also aren’t required to share any information about what they’re doing with state authorities. California is the only state that requires developers to make public specific data on their operations, including descriptions of crashes. California officials say they have no plans to delay next month’s planned testing of autonomous vehicles in the state, Government Technology reported. [11]

A spokesman for the Arizona Department of Transportation was quoted as saying [12] the state had no immediate plans to issue new rules or regulations following the incident.

Elsewhere, Boston officials have asked NuTonomy and Optimus Ride to pause their autonomous vehicle testing programs on the public streets of Boston, according to Government Technology [13]. The Duluth News Tribune reported [14] this week on how the state of Minnesota is taking a “calculated approach” to preparing for the autonomous vehicle future. That approach includes a 15-member advisory council appointed by Gov. Mark Dayton earlier this month but not yet turning self-driving vehicles loose on the streets.

In the wake of the incident, some self-driving experts are urging renewed contemplation of when autonomous vehicles go on the road, Axios reported [15]. Raj Rajkumar, who heads the self-driving lab at Carnegie Mellon University, said researchers need to guard against complacency. “Just because the vehicle drove itself fine for the past 10 miles does not mean that it can deal with all the conditions it will encounter during the next 10 miles,” he said.

Bryant Walker Smith [16], a driverless vehicle expert at the University of South Carolina School of Law (who spoke at the CSG Autonomous and Connected Vehicle Policy Academy [17] last year) told The Los Angeles Times [18] “This is going to focus a lot of attention on how companies are approaching their systems, their technologies and their management of tragedies.”

John Simpson, a critic of liberal driverless vehicle regulations, called for a national moratorium on testing on public roads until the accident is analyzed. “Arizona has been the wild west of robot car testing with virtually no regulations in place,” he said in a statement. “That’s why Uber and Waymo test there. When there’s no sheriff in town, people get killed.”

Cathy Chase of the insurance industry-associated Advocates for Highway and Auto Safety told Streetsblog [19] she wants to see an across-the-board pause on further loosening of autonomous vehicle regulations until NTSB releases their recommendations.

Linda Bailey, executive director of the National Association of City Transportation Officials, said in a statement [20] “what is already clear is that the current model for real-life testing of autonomous vehicles does not ensure everyone’s safety. While autonomous vehicles need to be tested in real-life situations, testing should be performed transparently, coordinated with local transportation officials, and have robust oversight by trusted authorities.”

Emil Frankel, a senior fellow at the Eno Center for Transportation in Washington, told Bloomberg [21] if investigators find fault with the technology, it could undermine the public’s acceptance of self-driving vehicles, harm business plans and tamp down investment in the industry. “That’s what Uber and, frankly, everyone else involved in these vehicles is going to be very concerned about,” he said.

Further Reading on Ride-Hailing & Autonomous Vehicle Technology
Generating Revenues from Ride-Hailing Fees

The New York Times reported last month on how cities like Chicago and Philadelphia and states like South Carolina and Massachusetts are charging fees on ride-hailing services that are generating revenues those places are using to upgrade transit, support public schools, improve roads and bridges and even help the struggling taxi industry modernize to compete with ride-hailing companies. But in at least one place, the collection of these fees has caused an unforeseen challenge: too much revenue. Officials in Portland, Oregon said recently a 50-cent surcharge on Uber and Lyft and taxi rides has generated $6.7 million since 2016. By law, that money can only be used for the enforcement and regulation of the ride-hailing and taxi industries. The surcharge is bringing in more money than the city needs to run those programs, which has left them with a surplus of $3 million, KGW-TV reported.

Impacts on Congestion and Transit

A review of recent studies finds that rather than reducing congestion in America’s cities, ride-hailing companies are pulling riders from other transport modes and competing directly with beleaguered mass transit systems in many places, the Associated Press reported. A task force in New York has
proposed a surcharge of $2 to $5 on Uber and Lyft rides as part of a broader congestion pricing plan to keep traffic moving and to generate funding for public transit, *The New York Times noted this month* [45]. *Others argue* [46] that ride-hail fees aren't likely to solve congestion issues by themselves. Ride-hailing services are also exacerbating rush-hour congestion in Boston, according to new research by the *Metropolitan Area Planning Council* [47], *Streetsblog USA reported* [48]. The council recommends increasing and restructuring Massachusetts’ flat 20-cent fee on each ride-hailing trip, which doesn’t vary in accordance with congestion levels. For its part, Lyft officials *claimed in a recent economic report* [49] that nearly 250,000 of its passengers dropped owning a personal vehicle due to the availability of ride-hailing in their area. And a *recent report from the Rocky Mountain Institute* [50] claims that because they often carry multiple passengers, ride-hailed cars contribute fewer miles per person to traffic than personal cars, making them at least as efficient if not more so, *The San Francisco Chronicle reported* [51]. Meanwhile, the city of Arlington, Texas *announced recently* [52] they’re replacing public commuter buses with a new partnership with ride-hailing company Via, which will operate 10 van shuttles. And Uber *has officially expanded* [53] its *Uber Express POOL* [54] service, which began in San Francisco and which is seen as a direct competitor to public transit, to six other cities with plans to add more cities in the months ahead. An annual overview of public transit usage from the advocacy group *TransitCenter indicates transit ridership fell in 31 of 35 major metropolitan areas in the United States last year, The Washington Post reported* [55]. Researchers cited the rise of ride-hailing companies as one factor behind the ridership declines and said the declines could pose an emergency for cities.

**Impact on Taxis**

While there has been concern for some time about the impact of ride-hailing companies on the taxi industry, *recent data* [56] demonstrates just how significant that impact has been. *Recode reported* [57] that in February 2017, ride-hailing apps overtook taxis in New York City at more than 10 million rides a month and by the end of last year, that number already had grown to 15 million. Moreover, there are now seven times as many ride-sharing drivers (100,000) in New York City compared to yellow cabs (13,587), *the CT Post reported* [58]. Connecticut in recent years has sought to put taxis and ride-hailing companies on a level playing field with new regulations including insurance requirements for drivers. *But The Post notes* [58] that Connecticut Uber drivers are at a disadvantage from their New York counterparts when it comes to where they can pick up passengers.

**Impact on Parking Industry**

*The Atlanta Journal-Constitution reports* [59] this week that increased use of ride-hailing and the prospect of autonomous vehicles on the horizon are prompting officials at Hartsfield-Jackson International Airport to consider scaling back plans for construction of new parking decks next to the domestic terminal. Both *Fortune* [60] and *Crain’s New York Business* [61] reported last month on how the commercial parking industry is endangered by the growing popularity of Uber and Lyft.

**Impact on Trucking Industry**

*USA Today reported* [62] this month that Uber has been conducting delivery runs with its fleet of self-driving trucks across Arizona since November, which the newspaper calls “the first step in what promises to be a freight transportation revolution that could radically reshape the jobs of long-haul truckers.”

**Data-Sharing**

City and transit officials around the country would like to have access to data collected by ride-hailing companies that could help inform their decisions about whether to invest in public transit projects,
where new traffic patterns make road improvements necessary, whether to commit valuable real estate to parking and how to best serve their constituents’ travel needs going forward. But ride-hailing companies have been hesitant to share such data, arguing it could compromise rider and driver privacy, endanger proprietary information and subject them to greater criticism. Wired magazine reported [63] this month on the challenges this has presented for the transportation research community. Meanwhile, the new CEO at Uber says the company is aiming for more cooperative partnerships with municipal governments, Politico reported [64]. And as Philadelphia officials complain that Uber and Lyft aren’t sharing enough data [65] with them, Cincinnati officials are excited [66] about a partnership that is giving them access to the data so coveted by other places.

Ride-Hailing Companies & Medical Transportation

Uber and Lyft recently announced new health care-oriented transportation options just days after a disability rights group in the San Francisco Bay area sued Uber over an alleged lack of wheelchair-accessible vehicles to serve seniors and individuals with disabilities, The San Francisco Examiner reported. [67] Uber launched a platform [68] called Uber Health [69] that will allow healthcare providers to call their patients Uber rides to and from appointments. Lyft meanwhile has partnered [70] with Allscripts, Blue Cross Blue Shield, Ascension and others to integrate its ride-hailing system with electronic health records services, which would allow for automatic detection of special transportation needs in a patient’s file. Lyft also announced [71] recently a partnership with Aira, an assistive community focused on the blind and vision-impaired, to make transportation more accessible for those customers. Visually impaired customers will be able to use wearable smart glasses and an augmented reality dashboard to access Lyft services. … Research issued [72] last year found that [73] ride-hailing services have reduced the usage of ambulances in cities around the country. The website Healthcare Finance News [74] meanwhile warned this week that complex regulatory and financial issues can open the door to fraud and abuse in the partnerships between health care providers and ride-hailing companies to provide non-emergency transportation services to patients.

Further Reading on the Ride-Hailing Industry

- “Lyft says it passed $1 billion in revenue last year—and is growing faster than Uber,” [78] Recode, March 12, 2018.

By:
Thursday, March 22, 2018 at 02:12 PM
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