August 27, 2019

Docket Management Facility
US Department of Transportation
1200 New Jersey Avenue SE
West Building, Ground Floor, Room W12–140
Washington, DC 20590–0001

Re: **Docket ID No. FMCSA–2018–0037; Advanced Notice of Proposed Rulemaking; Safe Integration of Automated Driving Systems-Equipped Commercial Motor Vehicles**

On behalf of the National Ready Mixed Concrete Association (NRMCA), I am writing to submit comments on the May 28, 2019 Federal Motor Carrier Safety Administration ("FMCSA") advanced notice of proposed rulemaking titled "Safe Integration of Automated Driving Systems-Equipped Commercial Motor Vehicles" ("proposal"). (*See 84 Fed. Reg. 24449*)

NRMCA was founded on December 26, 1930, and today represents an industry with more than 2,250 companies and subsidiaries that employ more than 135,000 American workers who manufacture and deliver ready mixed concrete. The Association represents both national and multinational companies that operate in every congressional district in the United States. The industry includes more than 77,500 ready mixed concrete trucks and 6,500 ready mixed concrete plants. Roughly 85% of all U.S. ready mixed concrete companies are small businesses.

The ready mixed concrete industry manufactures a construction material vital for constructing our built environment. From roads and bridges, to homes and high-rises, our built environment could not be realized without the use of ready mixed concrete. This important building material is created by combining fine and coarse aggregates, cement and water inside a rotating concrete mixer drum, positioned atop a commercial motor vehicle chassis. Currently, the vast majority (98 percent) of American ready mixed concrete markets employ single-unit

concrete mixer trucks operating on between 2- to 7-axels[1] to deliver ready mixed concrete to its point of placement. These trucks are defined as vocational, heavy-duty, class 8, single unit trucks. In 2018 alone, the industry is estimated to have produced more than 360 million cubic yards of ready mixed concrete, representing a value in excess of $40 billion. Virtually every construction project in America uses at least some ready mixed concrete.

NRMCA appreciates the opportunity to comment on FMCSA's proposal. Specific to the ready mixed concrete industry, automated vehicles, particularly automated ready mixed concrete trucks, hold immense potential for increasing industry safety, supplementing current driver operations, solving driver shortage issues, while increasing the effectiveness, efficiency and safety of ready mixed concrete operations and placement.

The ready mixed concrete industry sees hopeful potential with the evolution of automated vehicles and the corresponding regulatory structure. As this discussion continues to evolve, the prevalence and safety of automated vehicles growth, the industry envisions a process whereby ready mixed concrete delivery will rely on a vastly smaller ratio of driver to ready mixed concrete truck. Currently, the driver to truck ratio is one to one, a proportion that continues to be more challenging to meet with fewer and fewer drivers available to operate the industry's trucks. Through advancements in automated technology, the scheme the industry is focused on that will exist in the near future, is whereby a single driver my drive a ready mixed concrete truck to the point of concrete placement, such as a construction site, unload the truck and then send it back along the same route. However, the driver will stay behind at the site to accept and unload more

[1] NRMCA, 2019 Fleet Benchmarking Survey

truck deliveries that would travel along the same initial route. Specifically, within in any new regulatory structure, the process would transpire using either SAE Level 3 or Level 4 automated trucks, as follows: a concrete plant receives data directly from a connected construction site with a request for concrete mix, concrete quantity, placement location, and requested delivery time. The construction site is then prepared to accept the concrete. The concrete plant batches the right mix and the right quantity of concrete remotely and automatically using batch control technology. The concrete truck autonomously positions itself under the plant, is loaded and then ready to go. The concrete truck, equipped with GPS, sensors, 5G, and/or other devices, autonomously adjusts its route through the city to avoid traffic, to increase fuel efficiency (or recharge battery on electrified road), and to arrive on the jobsite on time. If necessary, the concrete truck sends data back to the concrete plant that vehicle maintenance is due when it returns (i.e. needs air in tires, hydraulic valve replacement, new rotor, etc.). The concrete truck arrives on the construction site. The connected construction site sends data to the concrete truck, as well as the other equipment and personnel on site, to direct the concrete truck safely to the placement location (in some cases an operator may be needed due to the ever-changing construction site). The concrete truck places concrete at the requested time at the specified placement rate, initiated by a remote signal from the operator or placement crew. The concrete truck, after placement, is directed to a designated rinse-off area on the construction site, removed from other equipment and personnel, where concrete is autonomously rinsed from the chute, back into the mixer. The concrete truck is now ready to go back to the concrete batch plant. The concrete truck again autonomously adjusts it route through the city to avoid traffic, to increase

fuel efficiency (or recharge battery on electrified road), and to arrive back at the concrete batch plant safely and in an efficient manner.

In order to achieve the industry's above vision, as it pertains the questions asserted in the proposal, NRMCA does not envision many regulatory structure changes regarding drivers or management of the vehicles. Specific to the ready mixed concrete industry and SAE Level 3 and Level 4 automated trucks, NRMCA does not see a need for restructuring the current regulatory scheme. NRMCA believes that management of autonomous ready mixed concrete vehicles will still need to be overseen by industry personnel. Such personnel, as is necessary through current regulations, will still need to hold commercial driver's licenses, adhere to hours of service, abide by distracted driving rules, inspect the vehicles, and the numerous other regulations companies, drivers, operators and mechanics are mandated to observe.

This system and process will increase safety on our nation's roadways and construction sites, as well as help to unburden the critical national issue of a driver shortage. This same process aims to streamline ready mixed concrete delivery allowing for greater effectiveness and efficiency. NRMCA appreciates the opportunity to comment on this proposal**.** For more information please contact me at (240) 485-1157 or kwalgenbach@nmca.org.

Sincerely,

Kevin Walgenbach

Senior Vice President of Compliance and Regulatory Affairs

National Ready Mixed Concrete Association