

To: Senate Transportation Committee
From: Tim Austin, P.E., F.NSPE
Kansas Society of Professional Engineers
Date: February 8, 2022
Re: Neutral Testimony for SB 379

Mr. Chair and members of the committee,
Thank you for the opportunity to submit our thoughts on SB 379.

I am Tim Austin, P.E, F.NSPE, a past president of the Kansas Society of Professional Engineers, spending my career has a licensed professional engineer, specializing in civil engineering, in Wichita. In addition, I am a past president of the National Society of Professional Engineers (NSPE) and chaired NSPE's Task Force on Autonomous Vehicles. NSPE has been actively engaged in AV legislation at the federal level since 2015.

KSPE represents the individual licensed engineers across the State of Kansas. For over 110 years, KSPE has worked to promote engineering by delivering professional development services, encouraging licensure, and advocating legislation and public policy for the betterment of human welfare and the industry.

KSPE does not oppose this specific legislation but thinks it can be improved upon, if and when this Committee considers action. KSPE has closely followed the Kansas Legislature's previous AV legislation and informational hearings, as well as discussion from the Kansas Department of Transportation (KDOT) and action in other states.

Upon review of SB 379, we ask the Committee to consider the following questions:

Middle Mile. We believe the 'middle mile' needs much further definition. Does every single route need to be separately permitted? Perhaps not, but some thought needs to be given for the point to point routes and the level of road complexity that is presented for a given route. How will this be expanded when other companies seek additional practice?

Suitability of Road System. The definition of highway in K.S.A. 9-1424 is overly broad. There are multiple categories of highway such as controlled access freeways, expressways, Super 2s, standard 2, rural, and urban. For the purpose of any AV legislation

on operation, it would be important to categorize different road/highways as the level of driving complexity increases significantly when going from controlled access interstate to two-lane urban highways. Intersections, turning vehicles, traffic signals, pedestrian and crosswalks are just some of the interactions that a driver will face on an urban highway versus a controlled access freeway. Should industry, KDOT, and law enforcement go through a mutual risk assessment exercise?

Human Operator. The legislation seems to imply that a passive operator will be located inside the vehicle. At times, it does not. In some AV technologies, the operator is located somewhere else, i.e. military drone operators over the Middle East are generally located here in the states. This is an important distinction because connectivity along many routes is non-existent which means the human operator has to be physically present. Which leads to the question is that on certain routes, remote operation would be acceptable but on other routes, absolutely not. There needs to be an understanding of the need, or not, of connectivity.

Dynamic Driving Task. The overall operation of the vehicle goes beyond the safe operation of the software. The vehicle system which includes the engine, drivetrain, electrical, suspension, hydraulics, braking, etc. Operation should include, spatial awareness, cognitive recognition, and vehicle system management. For example, how is a blown tire situation managed?

Accountability. It would seem to make sense to license operators with this technology in order to identify and manage the unforeseen risks that will come through its use at least in the near horizon. "Black box" technology and incident reporting should be required in order for on-going evaluation of the technology.

And finally, at this time, there is not general acceptance even within the AV industry on what exactly is an, "autonomous motor vehicle". There is some guidance from SAE (formerly the Society of Automotive Engineers) on AV levels. Most vehicles are operating under SAE Level 2. Level 5 is full autonomy and doesn't exist within the industry at the present time. How does this definition compare to other states, particularly near Kansas?

Our organizations are happy to be a resource for the Committee, as necessary. Enclosed with my testimony is NSPE's regulatory policy guide for autonomous vehicles. Granted, some of the recommendations are more federal in nature rather than state, however many points are useful for consideration in state conversations.

Thank you in advance,

Tim Austin, P.E., F.NSPE