Remarks Prepared for

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Good morning. I am delighted to join you today and to speak about the issue of impaired driving. I want to spend most of my time on the Driver Alcohol Detection System for Safety (DADSS), a vehicle-based technology now in the research and development phase that could someday help to significantly reduce the number of alcohol-related crashes.

But first I'd like to provide some context. At NHTSA we have a single-minded focus on highway safety that

creates an extraordinarily diverse agenda. Our concerns range from driver behavior, public outreach, and law enforcement to research, rulemaking, vehicle design and testing, and international collaboration.

Our initiatives emerge from data-driven and research-oriented activities that touch on every aspect of driving safety. We envision, and are working to create, a new safety era that will revolve around safe vehicle designs and emerging technologies.

In recent years, NHTSA has been able to report overall declines in U.S. highway traffic fatalities. Our latest data show that in 2010 U.S. highway fatalities fell to 32,885, the lowest level since 1949, despite an estimated increase of nearly 21 billion miles traveled. Since 2005, fatalities have dropped 25 percent. And while that's an

encouraging trend, I know that for all of us—the number of lives lost each year is still much too high.

On the horizon are some very promising crash-avoidance technologies that we think will help up us to continue to save more and more lives. Some paradigm-changing technologies, such as Connected Vehicle technology and autonomous vehicle features are rapidly developing—and NHTSA is going there. Let me give you one example:

Vehicle-to-Vehicle technologies have the potential to address approximately 80 percent of the vehicle crash scenarios involving unimpaired drivers. Our research is showing that these technologies could help prevent a majority of the collisions that typically occur in the real world, such as crashes occurring at intersections or while changing lanes. We understand how onboard

alert systems can signal an impending collision. But we need to know much more about how drivers might respond to these warnings and how connected vehicles communicate in real-world scenarios.

In 2011, NHTSA initiated Safety Pilot driver clinics designed to evaluate cars equipped with vehicle-to-vehicle communications systems in a controlled environment where researchers can observe the drivers' responses. The technologies we've been testing include in-car collision warnings, "do not pass" alerts, warnings that a vehicle ahead has suddenly stopped, and other similar safety messages.

The Department of Transportation will launch the second part of the Safety Pilot with a model deployment, using approximately 3,000 vehicles to

further test Connected Vehicle technology in a year-long long effort from summer 2012 through summer 2013. This phase of testing will focus on a limited number of vehicle-to-vehicle infrastructure applications in addition to continuing the research on vehicle-to-vehicle communication systems.

The information collected from both phases of the Safety Pilot will be used by NHTSA to determine by 2013 whether to proceed with additional vehicle-to-vehicle communication activities, including possible future rulemakings.

Another picture emerging for NHTSA is the interface between driver behavior and vehicle technology.

Our data shows that the majority of crashes occur because of dangerous behavior behind the wheel, including driving while distracted and alcohol-impaired driving. We know that driver error contributes to approximately 90 percent of vehicle crashes.

In fact, April is Alcohol Awareness Month and National Distracted Driving Awareness Month at NHTSA.

Distracted driving is one of the newest and deadliest threats on our agenda. In 2010, more than 3,000 people in the United States lost their lives in crashes where distraction was a factor. Young people are especially vulnerable because their world is so thoroughly defined by mobile technologies and social connectivity.

The data are telling us that as technology evolves, the potential for distraction in vehicles rises. We're seeing the rapid growth of new dashboard and handheld infotainment systems in vehicles now that create dangerous levels of distraction: unintended consequences that can be deadly. We know that drivers dialing a cell phone, texting, and surfing the Internet are diverting themselves from their primary responsibility: driving.

In response, NHTSA has advanced an evaluative framework for in-vehicle technologies. It offers specific guidance to automakers to help them develop electronic devices that provide the features consumers want—without interfering with the driver's focus or sacrificing safety by distracting the driver's attention.

In the draft guidelines we have recommended that manufacturers limit the amount of time that drivers take their eyes off the road or hands off the wheel to operate in-dash or in-car technology. We also suggest that functions that require drivers to manually enter information (such as sending a text or posting to Facebook) should be disabled unless a vehicle is in park.

Last month we held three public hearings on our proposed distracted driving guidelines across the United States and gathered responses from various stakeholders. We look forward to a collaborative solution that directly addresses the dangerous connection between electronic devices and driver distraction.

Let me turn now to alcohol-impaired driving, one of the most prevalent, yet preventable, traffic safety problems facing our nation. In 2009, 10,839 people died nationwide in crashes involving a drunk driver. Alcohol-impaired-driving fatalities accounted for 31 percent of overall traffic fatalities in 2010.

Like distracted driving, alcohol-impaired driving is especially prevalent among young people. In 2009, 8,976 people aged 21 to 34 were killed in motor vehicle traffic crashes. Of those, 47 percent (4,206) were killed in alcohol-impaired driving crashes.

In addition to our longstanding awareness and enforcement campaigns to reduce these fatalities, NHTSA initiated a $10 million, five-year cooperative

research program in 2008 with the Automotive Coalition for Traffic Safety (ACTS), a nonprofit industry coalition funded by 17 automakers.

The Driver Alcohol Detection System for Safety (DADSS), is developing non-invasive technologies to quickly and accurately measure a driver's blood alcohol concentration (BAC). If the system detects that the driver has a BAC at or above the legal intoxication limit (.08 BAC or higher), the vehicle will be disabled from being driven. Technologies developed under this project are envisioned to be voluntarily installed as an option on new cars.

NHTSA research shows that drivers involved in fatal crashes with blood alcohol levels above the .08 legal

limit are eight times more likely to have had a prior conviction for impaired driving than drivers who had no alcohol in their bodies at the time of a crash.

A comprehensive impaired driving program needs to include deterrence, prevention, communications, and treatment in order to address the general population as well as those who are problem drinkers. Today I'll focus on the development of the technology that can prevent alcohol-impaired driving.

The R&D effort was structured to manage risk through a phased approach. We are now in the first year of a two-year development which began in the third quarter of 2011. This development phase will move the technology beyond proof-of-concept devices.

In late 2013, a research vehicle will be available that will showcase two different approaches to measuring driver alcohol levels—a touch-based approach that assesses alcohol in human tissue and a breath-based approach enabling assessment of alcohol concentration in the driver's exhaled breath.

In the touch-based approach, measurement begins by shining a near infrared light (similar to a low power flashlight) on the user's skin. This light contains information on the tissue's unique chemical properties, which can be analyzed to determine the tissue alcohol concentration.

The breath-based approach enables a quick, contact-free measurement of the driver's breath alcohol content by using the concentrations of carbon dioxide

as a measure of dilution of the driver's exhaled breath. Sensors placed in the vehicle cabin will allow the system to ensure that the breath sample is from the driver and not a passenger.

Although impressive progress has been made to date in Phase I of the program (where proof-of-principle prototypes were focused on speed, accuracy, and precision), significant additional development is needed. The next challenge is to improve accuracy and decrease measurement time to meet or exceed DADSS performance specifications.

DADSS devices will also be required to meet the automakers' standards for long-term reliability and durability and must be compatible for mass-production.

For touch-based technology, a sensor redesign is underway to meet the rigors of the vehicle environment, including size and ruggedness requirements. Vehicle integration will be fairly straightforward because the driver will interact with the technology in the same way in every vehicle—via a stop-start button.

For breath-based technology, additional sensor development is needed. Optimal sensor locations will be identified based on human breath aerodynamics in the vehicle, across a wide variety of environmental conditions. The challenge will be to locate sensors in the vehicle cabin to ensure that the breath sample is at the required dilution. For this technology, if alcohol is detected on the driver's breath at a pre-set BAC, the driver will be asked to provide a short puff of breath

directly toward the sensor to achieve the required accuracy and precision.

The program is now in Phase Two, which will conclude in late 2013 with a practical demonstration of the DADSS alcohol detection systems in a research vehicle. These systems, while still research prototypes, will be suitable for continued development and subsequent vehicle testing.

Although DADSS research is still in the early stages, we are following a step-by-step, data-driven process to ensure that the end result is a highly unobtrusive, accurate, and precise system. The Automotive Coalition for Traffic Safety has also formed a Blue Ribbon Panel of experts to advise the project, including automotive

manufacturers and suppliers, public interest organizations, highway safety researchers, domestic and international government agencies, and medical and behavioral scientists.

There is still much more work to be done, but we believe that a technology could potentially be ready for general use and integrated into vehicles in eight to 10 years.

Thank you.