



September 21, 2022

Ann Carlson
Acting Administrator
National Highway Traffic Safety Administration
1200 New Jersey Avenue SE
Washington, D.C. 20590

RE: GM and Cruise Petition for Temporary Exemption, NHTSA Docket 2022-0067

Dear Ms. Carlson:

General Motors LLC and its affiliate, Cruise LLC, (collectively “GM and Cruise”) together submit the following comments in connection with the National Highway Traffic Safety Administration’s (“NHTSA” or the “agency”) Request for Comments regarding GM and Cruise’s Petition for Temporary Exemption from certain applicable Federal Motor Vehicle Safety Standards (the “Petition”).¹

GM and Cruise appreciate the agency’s prompt publication of this notice seeking public comment on our Petition. Enabling the deployment of the Origin with appropriate reporting conditions will allow NHTSA to obtain valuable data to support a better understanding of autonomous vehicle operations, the impact of AVs on the transportation system, and public acceptance and use of AVs—with the longer-term goal of informing NHTSA’s understanding about how to frame appropriate Federal Motor Vehicle Safety Standards for autonomous vehicles.

Autonomous vehicles hold great promise for improving traffic and vehicle safety. NHTSA’s data confirm that human driver error is by far the leading cause of vehicle crashes. The imperative to reduce these crashes is stronger than ever, as NHTSA’s data show that traffic fatalities reached a 16-year high in calendar year 2021.²

In addition to demonstrating the promising safety benefits of autonomous technology, GM and Cruise are committed to deploying the Origin in a way that advances other important national and community goals, including environmental sustainability, ensuring U.S. leadership in advancing autonomous technology and artificial intelligence (AI), promoting accessibility for persons with disabilities, helping establish international standards and norms for autonomous vehicle use, and supporting the American workforce. Every Origin will be a zero-emission, electric vehicle, specially designed for deployment in a rideshare fleet. The Origin has great promise to help reduce the nation’s reliance on oil and eliminate a major source of carbon emissions, a necessary step to meet U.S. carbon reduction commitments and to reduce climate change. The Origin can also help curb particulate emissions that disproportionately burden

¹ See 87 Fed. Reg. 43595 (July 21, 2022).

² See NHTSA, *NHTSA’s 2021 Estimate of Traffic Deaths Shows 16-Year High*, (May 17, 2022), <https://www.nhtsa.gov/press-releases/early-estimate-2021-traffic-fatalities>.

historically underserved communities. The Origin will help the U.S. establish an international benchmark for safe vehicle operation and responsible use of AV technology. The Origin will help expand mobility options for seniors, people who are blind or have low vision, and other communities that have traditionally had lower access to reliable transportation. The Origin will be manufactured at GM's Michigan Factory ZERO, which will help support and create American jobs, promote economic growth, and advance the long-term success of the U.S. manufacturing sector and America's automotive industry.

Finally, allowing the Origin to deploy under a temporary exemption will enhance public awareness and acceptance of potentially life-saving autonomous vehicle technology, which is an important and necessary component of an overall national economic and security policy on autonomous vehicles.

With respect to particular conditions on the exemption, including reporting requirements, GM and Cruise support providing NHTSA with appropriate safety-related information about the Origin's operation, as long as the requirements are reasonable, not redundant of the Standing General Order, and capable of being used in a practical manner by NHTSA. Understanding that there are multiple paths to the commercial deployment of self-driving vehicle technology, GM and Cruise also respectfully submit that NHTSA should act to advance fairness across the industry in determining appropriate conditions to place on companies pursuing the Part 555 pathway. GM and Cruise also wish to ensure that confidential business information provided under an exemption's conditions will be protected from public disclosure. We urge NHTSA to establish a streamlined process for the submission of confidential information under an exemption to avoid the burden of creating a separate Part 512 justification each time a report is made. A class determination similar to what the agency established for certain Early Warning Reporting submissions would be appropriate here.

We will now turn to the specific comment requests in the agency's notice. For ease of reference, we will repeat each question before our response.

Questions about Possible Terms and Conditions on a Temporary Exemption for Origin

1. *Reporting within 24 hours of an exempt vehicle being involved in any crash, to include:*

a. The data elements specified in 49 CFR part 563, Event Data Recorders.

GM and Cruise Response: GM and Cruise support providing this information to NHTSA for crashes that occur when the vehicle is operating in autonomous mode, assuming there are no exigent or other circumstances that would prevent GM and Cruise from physically accessing the autonomous vehicle within that 24-hour time period (e.g., the vehicle is impounded), and providing the equipment is in sufficient condition to pull the data.

b. If the ADS was in control of the vehicle during the event, a detailed timeline of the 30 seconds leading up to the crash, including a detailed read-out and interpretation of all

sensors in operation during that time period, the ADS's object detection and classification output, and the vehicle actions taken (i.e., commands for braking, throttle, steering, etc.).

GM and Cruise Response: GM and Cruise recommend that NHTSA pursue these data elements on a case-by-case basis as a follow up to an SGO report of the crash. For example, a read-out and interpretation of raw data from all sensors in operation, including data output related to Object and Event Detection and Response (OEDR), requires significant storage capacity, processing power, and the ability to interpret proprietary data formatting. Similarly, in GM and Cruise's experience, 30 seconds of all sensor data is not necessary to provide a full understanding of the cause of an event and would require particularly significant storage capacity. Finally, this data is likely not readable by NHTSA. GM and Cruise are willing to work with NHTSA to determine what would be practically useful for NHTSA in a given crash investigation.

c. If a human operator took over control of the vehicle prior to the event, a detailed timeline of the 30 seconds leading up to the human operator taking over control, including a detailed read-out and interpretation of all ADS sensors in operation during that time period, the ADS's object detection and classification output, and the vehicle actions taken (i.e., commands for braking, throttle, steering, etc.).

GM and Cruise Response: See response to Question 1.b.

d. If a human operator was in control of the vehicle at any point during or up to 30 seconds before the event, a detailed timeline of any actions the human operator took that affected the crash event, as well as any technical problems that could have contributed to the crash (signal latency, poor field of view, etc.).

GM and Cruise Response: GM and Cruise support providing this information to NHTSA.

e. Any additional information about the event that NHTSA deems pertinent for determining either crash or injury causation, including additional information related to the ADS or remote operator system.

GM and Cruise Response: GM and Cruise recommend that NHTSA pursue these data elements on a case-by-case basis as a follow up to an SGO report of the crash.

2. Beginning 90 days after the date of the exemption grant, and at an interval of every 90 days thereafter, a report detailing the operation of each exempted vehicle in operation during that time period. This report may provide this information either in aggregate or on a per-vehicle basis, but it must include the following:

a. A calculation of the total miles the vehicle has traveled using the ADS during the report period, and heat maps of the geofenced area in which the vehicle operates to illustrate travel density.

GM and Cruise Response: GM and Cruise support providing this information to NHTSA.

b. Detailed descriptions of any material changes made to the subject vehicle's Operational Design Domain (ODD) or ADS software during the reporting period.

GM and Cruise Response: GM and Cruise support providing NHTSA with information regarding material changes to the vehicle's ODD.

Regarding reporting changes to the ADS software, GM and Cruise submit that this is not practical because ADS software is by design being continuously improved and updated. NHTSA has recognized that developing ADS technology in real-world environments is important "to expose those technologies to new situations in which 'machine learning' capabilities can be used to improve performance."³ Deployment of the Origin is intended to inform constant learnings that generate data to facilitate continual improvements in the safety, accessibility, and functionality of the Origin's core technologies, and that involves frequent updates to the Origin's ADS software. GM and Cruise recommend that this condition be revised to require reporting any material change to the software that could potentially affect FMVSS compliance or the safety equivalency analysis that NHTSA will be performing.

c. Detailed descriptions of any incidents in which any exempted vehicle violated any local or State traffic law, whether operating using the ADS or under human control.

GM and Cruise Response: The Origin is designed to comply with all applicable state and local laws and regulations. GM and Cruise recommend revising this provision to require reporting of any incident in which the Origin was cited for a moving violation.

d. Detailed descriptions of any incidents in which the exempt vehicles experienced a sustained acceleration of at least 0.7g on any axis for at least 150 ms, or of any incidents in which the vehicle had an unexpected interaction with humans or other objects (other than crashes that require immediate reporting).

GM and Cruise Response: GM and Cruise are willing to provide sustained acceleration data to NHTSA when it is available.

With respect to "unexpected interaction with humans or other objects," GM and Cruise recommend limiting this reporting to interactions that result in injury or property

³ See NHTSA, *Nuro, Inc., Grant of Temporary Exemption for a Low-Speed Vehicle with an Automated Driving System*, 85 Fed. Reg. 7826, 7837 (Feb. 11, 2020).

damage. In GM and Cruise's experience, humans (intentionally or unintentionally and expectedly or unexpectedly) frequently interact with the AVs as they operate. For example, in over 4 million miles of testing and deployment, GM and Cruise have experienced many individuals interacting with the vehicle due to its novelty (e.g., taking pictures), while never intending to take a ride. There will also be significant uncertainty and ambiguity in identifying what constitutes an "unexpected interaction" with humans or other objects, in the absence of an objective criteria like injury or property damage.

e. Detailed descriptions of all instances in which a public safety official, including law enforcement, attempted to interact with an exempted vehicle, such as to pull it over, or contacted GM regarding an attempted interaction with an exempted vehicle.

GM and Cruise Response: GM and Cruise support providing this information to NHTSA with the understanding that this reporting requirement would be limited to instances in which a moving violation is issued or when law enforcement contact GM or Cruise to discuss an interaction. GM and Cruise would not likely otherwise be aware of "attempted" interactions that did not result in a citation or law enforcement outreach.

f. Detailed descriptions of any "minimal risk condition fallback" events that occurred, even if no crash has occurred. If the event has occurred because the vehicle self-diagnosed a malfunction of a vehicle system, the report must include a detailed description of the cause and nature of the malfunction, and what remedial steps were taken. If the event was caused by the vehicle encountering a complex or unexpected driving situation, the report must include a detailed timeline of the ADS's decision-making process that led to the event, including any difficulties the ADS had in detecting and classifying objects.

GM and Cruise Response: GM and Cruise recommend revising this condition to limit reporting of "minimal risk condition fallback" to events where the vehicle requires physical intervention to retrieve or remove the vehicle from the roadway because it cannot resume operations remotely or automatically due to a system fault. GM and Cruise believe that minor minimal risk condition fallbacks that do not require such physical intervention (such as a few seconds of fallback caused by momentary fog) from which the vehicle recovers automatically and continues its operations would not be of practical benefit to NHTSA.

g. In addition, GM must make necessary staff available to meet with NHTSA staff quarterly to discuss the status of its deployment program.

GM and Cruise Response: GM and Cruise support this condition.

3. GM must have a documented cybersecurity incident response plan that includes its risk mitigation strategies and the incident notification requirements listed below.

GM and Cruise Response: GM and Cruise support this condition. Cruise has a documented cybersecurity incident response plan. The architecture of the Origin's cybersecurity protection is summarized in Appendix H of the Petition. Cruise also monitors and assesses any susceptibilities on an on-going basis.

a. GM must cease operations of all exempt vehicles immediately upon becoming aware of any cybersecurity incident involving the exempt vehicles and any systems connected to the exempt vehicles that has the potential to impact the safety of the exempt vehicles.

GM and Cruise Response: GM and Cruise support this condition.

b. No later than 24 hours after being made aware of a cybersecurity incident, GM must inform NHTSA's Office of Defects Investigations (ODI) of the incident. GM must also respond to any additional requests for information from NHTSA on the cybersecurity incident.

GM and Cruise Response: GM and Cruise support this condition.

c. Prior to resuming its operation of any exempt vehicles following the discovery of a cybersecurity incident, GM must inform NHTSA of the steps it has taken to patch the vulnerability and mitigate the risks associated with the incident, and receive NHTSA approval to resume operation.

GM and Cruise Response: GM and Cruise support this condition.

4. GM must be capable of issuing a "stop order" that causes all deployed exempted vehicles to, as quickly as possible, cease operations in a safe manner, in the event that NHTSA or GM determines that the exempted vehicles present an unreasonable or unforeseen risk to safety.

GM and Cruise Response: Cruise is capable of issuing a "stop order" to cause deployed exempted vehicles to, as quickly as possible, cease operations in a safe manner as needed.

5. GM must coordinate any planned deployment of the exempted vehicles or change to the ADS/ODD with State and local authorities with jurisdiction over the operation of the vehicle as required by the laws or regulations of that jurisdiction.

GM and Cruise Response: GM and Cruise support this condition. GM and Cruise already coordinate extensively with each state and locality in which Cruise operates its autonomous vehicle fleet, and will do the same for the Origin. As noted above in response to Question 2.c., the Origin is designed to comply with all applicable state and local laws and regulations. As noted in the Petition, Cruise has publicly posted a Law Enforcement Interaction Plan (LEIP) on its website at <https://getcruise.com/firstresponders> to help law enforcement personnel understand how to interact with the Origin.

6. The exempted vehicles must comply with all State and local laws and requirements at all times while in operation. Each vehicle must be duly permitted, if applicable, and authorized to operate within all properties and upon all roadways traversed.

GM and Cruise Response: GM and Cruise support this condition. As noted above in response to Question 2.c., the Origin is designed to comply with all applicable state and local laws and regulations.

7. GM must maintain ownership and operational control over the exempted vehicle that are built pursuant to this exemption for the life of those vehicles.

GM and Cruise Response: As noted in our Petition, once granted, GM will be selling the exempted Origins to Cruise for its fleet operations. GM does not intend to sell these vehicles to any U.S. entity other than Cruise, and Cruise does not intend to sell them to any third parties in the U.S. However, a condition that would preclude GM from selling exempted Origins to Cruise or preclude Cruise from retaining operational control of Origins in its rideshare fleet would prevent commercial deployment of the exempted vehicles.

8. GM must create and maintain a hotline or other method of communication for the public and GM employees to directly communicate feedback or potential safety concerns about the exempted vehicles to the company.

GM and Cruise Response: GM and Cruise support this condition. GM and Cruise both operate hotlines for employees to communicate potential safety concerns. GM's program is called Speak Up For Safety (SUFS) and has been in place for several years. Cruise's programs are called Safety Information Reporting and Escalation Network (SIREN) and Compliance Assurance Reporting System (CARS). SIREN is specifically dedicated to the identification of safety concerns. CARS is a general compliance reporting tool for anonymously reporting any potential safety issue or other concerns. Both safety reporting mechanisms are available to internal Cruise employees 24/7, and are regularly promoted by senior leadership in Cruise forums. These systems—SUFS, SIREN, and CARS—all provide retaliation-free means for an employee to escalate safety concerns about any vehicle or AV technology manufactured by GM or Cruise, including the Origin.

As to members of the public, the Cruise website invites public input via email (community@getcruise.com). Each Origin will also contain a two-way communications link in the vehicle to facilitate real-time customer support through the mobile application or by using the in-vehicle call button. Ride-related support can also be sought via email (Rider-Support@getcruise.com). Each of these communications gateways is monitored 24/7 by the Customer Support team, who flag potential safety concerns for internal review and real-time escalation as needed. The Social Media team also monitors social media (Twitter, Facebook, Instagram) for feedback.

Cruise also maintains a critical responder phone line for emergencies or urgent inquiries, and provides this information in the first-responder guides at <https://www.getcruise.com/firstresponders>, or via email at firstresponders@getcruise.com.

9. If there are other categories of data that should be considered, please identify them and the purposes for which they would be useful to the agency in carrying out its responsibilities under the Safety Act.

GM and Cruise Response: GM and Cruise believe that the existing SGO reporting, plus the proposed conditions outlined in the agency's notice (subject to GM and Cruise's comments in this letter) are adequate for meeting the agency's oversight requirements.

10. If the agency were to require the reporting of data, for what period should the agency require it to be reported—the two-year exemption period or the vehicles' entire normal service life?

GM and Cruise Response: GM and Cruise believe that reporting over the two-year exemption period plus three years (a total of five years of reporting) should be adequate for meeting the agency's oversight requirements and should provide sufficient data to support updated AV regulations that GM and Cruise hope will be underway or even completed within that five-year window.

11. Given estimates that vehicles with ADS would generate terabytes of data per vehicle per day, how should the need for data be appropriately balanced with the burden on manufacturers of providing and maintaining it and the ability of the agency to absorb and use it effectively?

GM and Cruise Response: GM and Cruise appreciate this question because it acknowledges the need for appropriate balancing of the burden of producing the data with the value to the agency in being able to practicably absorb, store and use it effectively.

Data reporting should be limited to information that can be functionally utilized by the agency to advance safety without requiring significant additional technical resources or training, and which does not create an unrealistic burden on operators or manufacturers managing an active fleet. For example, sharing raw sensor data by default as suggested in Question 1, rather than analysis on an as-requested basis as is currently pursued under NHTSA's SGO on Crash Reporting, may introduce unnecessary burden and complexity for both operators and the agency. GM and Cruise stand ready to work collaboratively with the agency to provide appropriate and relevant information on exempted vehicles, should this Petition be granted.

12. As explained in the section above, NHTSA has broad authority to determine whether the public interest and general goals of the Safety Act will be served by granting an exemption. NHTSA seeks to understand the many diverse effects of the exemption, including: the overall safety of the transportation system beyond the analysis required in the safety determination; how an exemption will further technological innovation; whether the exemption will address

transportation accessibility and equity; economic impacts, such as consumer benefits; and environmental effects.

GM and Cruise Response: GM and Cruise understand that NHTSA has broad authority and responsibility to consider the public interest generally and the goals of the Safety Act in evaluating the Petition. GM and Cruise anticipated this question in preparing the Petition and addressed these topics beginning on page 55 of the Petition, and we reiterate several main points here.

The primary purpose of the Safety Act is to “reduce traffic accidents and deaths and injuries resulting from traffic accidents.”⁴ As NHTSA has noted on numerous occasions, autonomous technology holds great promise for reducing traffic accidents in the future by eliminating the human driver. Granting this Petition would enable demonstration of autonomous technology in a way that will generate needed data for NHTSA, as well as help contribute to building public acceptance of the technology for future deployments.

Because of the potential for AV technology to reduce crashes, granting this Petition will have a positive effect on the overall safety of the transportation system beyond the standard-by-standard review of the FMVSSs from which exemptions are sought. While an exemption enables the manufacture and deployment of only 2,500 vehicles per year for two years—a number which alone will not be visible in future traffic crash statistics—the value here arises from the data, demonstrations, and learning this technology will facilitate that most serves the public interest and helps further widespread AV deployments. When that happens, the effect on traffic crash statistics should be substantial.

Likewise, granting this Petition will further technological innovation by increasing NHTSA’s access to AV data and corresponding knowledge about autonomous driving operations and systems. This increased knowledge will expedite NHTSA’s ability to promulgate AV FMVSSs for the benefit of all AV manufacturers, developers, and providers, as well as the benefit of the public.

To help advance transportation accessibility and equity, Cruise recently partnered with EVNoire—a national award-winning, minority-owned-and-led organization working at the intersection of transportation, energy, and environmental health equity. Cruise and EVNoire are engaging with San Francisco residents in Districts 5 and 10—two frontline communities within the city—to understand better how shared, autonomous, and electric vehicles could fit into community needs to address and mitigate disparities in transportation access and public health, and how developers can best integrate service to support community goals for cleaner, more inclusive transportation.

To support the needs of people with disabilities in our communities, GM and Cruise are collaborating with stakeholders within the accessibility community to enable the Origin to

⁴ 49 U.S.C. §30101.

transport people in wheelchairs. The wheelchair-accessible Origin would be intended to operate within Cruise's fleet to provide truly accessible point-to-point transportation services, offering passengers an opportunity for equal access to freedom of mobility. To help accommodate the needs of people who are blind or have low vision, Cruise regularly engages with the National Federation of the Blind, American Council of the Blind, and the San Francisco Lighthouse for the Blind to conduct user experience studies. Cruise has applied learnings from these engagements to inform product development for a number of features to improve accessibility for customers, including improved wayfinding which provides blind or low-vision users the ability to honk the vehicle horn via app to better identify the location of the vehicle upon arrival.

Granting this Petition will support U.S. jobs and investment. The Origin will be produced at GM's newly renovated and opened Factory ZERO located in Detroit-Hamtramck, Michigan, which is the company's first assembly plant fully dedicated to EV and AV manufacturing. GM will invest \$2.2 billion to retrofit this plant for the production of autonomous and electric vehicles. Additionally, this facility will contribute to over 2,000 union manufacturing jobs—with the Origin serving as one of the first major production lines at the site. And even before the first Origin is built, the GM and Cruise AV program has already generated hundreds of U.S. jobs at Cruise and at General Motors, including positions working on design, development, and testing of autonomous technology, as well as mastering the cutting edge of AI. By granting this Petition, NHTSA will play a direct role in facilitating the continued development of these skills and technology in the United States.

We must also remember that the United States is not alone in pursuing this technology. As leading research institutions such as the Center for Strategic International Studies (CSIS) have identified,⁵ AV technology is at the forefront of global investment and research into AI, an area of the utmost importance for the United States. As a result, leadership in AV technology has implications far beyond the transportation sector—e.g., it impacts American national security, continued U.S. competitiveness, and setting of global norms that support the long-term interests of the United States and its allies.

The environmental benefits of the Origin include the fact that the Origin is a zero-emission, rideshare AV. As a zero-emission vehicle, the Origin can help reduce air pollution in frontline communities as a fully sustainable transportation alternative to gas-powered personal vehicles—both directly for local residents within its ODD, and by helping to reduce overall emissions from other road users through the rideshare business model that will reduce people's needs for their non-electric vehicles.

Finally, granting this Petition will advance the state of knowledge about autonomous technology, and serve the larger public purpose of economic justice. The intersection of road safety, equity, and climate are a core theme of the U.S. DOT's recent National Roadway Safety

⁵ James A. Lewis et al., *AI Strategies and Autonomous Vehicles Development*, Center for Strategic & International Studies (Apr. 2001), <https://www.csis.org/analysis/ai-strategies-and-autonomous-vehicles-development>.

Strategy,⁶ which highlights the disproportionate burden of auto fatalities borne by communities of color and low-income households. While the Origin will not be the only solution when deployed at scale, it is an opportunity to fundamentally reshape this landscape by providing an affordable, accessible, and sustainable alternative to personally owned passenger vehicles. While this Petition request is for a limited number of vehicles, its grant will offer a small, yet potentially meaningful, step in ensuring that AVs are addressing these concerns as they are deployed in larger numbers.

13. With regard to environmental impacts, how should NHTSA use the part 555 exemptions to learn about the interplay between fuel efficiency and ADS technologies? Should the agency adopt reporting requirements that would allow the agency to better understand the energy use of the vehicles throughout their service life and possibly better assess, and quantify, the environmental impacts of ADS-equipped vehicles? Should NHTSA require an entity whose petition has been granted to provide data about, for example, how often and how far its vehicles are driving around unoccupied vs. occupied? Is there other information related to the environmental consequences and effects of the vehicles covered by the petition that NHTSA should require from entities granted an exemption?

GM and Cruise Response: As discussed in the Petition, the Origin is a zero emission, shared electric vehicle. We support NHTSA working with petitioners to move towards all-electric autonomous vehicles because we believe that electric vehicles can help reduce the nation's reliance on oil and reduce greenhouse gas and other emissions.

GM and Cruise support the agency adopting reporting requirements that would allow the agency to better understand the energy use of the vehicles throughout their service life and possibly better assess, and quantify, the environmental impacts of ADS-equipped vehicles. From an environmental perspective, occupied versus unoccupied operations are consequential when the engine is driven in whole or in part by gasoline. In those circumstances, NHTSA may wish to require reporting on fuel consumption.

14. How should NHTSA consider accessibility in applying appropriate conditions to an exemption if it were granted? As noted above, many proponents of ADS technology often claim that ADS-equipped vehicles could help advance greater transportation accessibility for persons with disabilities. Should NHTSA impose conditions on grants of part 555 exemptions to learn more about specific actions that manufacturers and operators of ADS-equipped exempted vehicles are planning, or have taken, to further the attainment of accessibility and equity goals? Should NHTSA seek information from manufacturers granted an exemption as to how they ensure that their ride-hailing services comply with any applicable Americans with Disabilities Act (ADA) requirements, how many vehicles would be wheelchair accessible, how they reach people with disabilities to offer access to ride sharing services, or whether the exempt vehicles provide other accommodations for individuals with disabilities, such as communication and/or human-

⁶ See US Department of Transportation, National Roadway Safety Strategy, (January 2022), <https://www.transportation.gov/nrssl/usdot-national-roadway-safety-strategy>.

machine interface (HMI) features designed for individuals with sensory disabilities (such as sight or hearing) or cognitive disabilities? Should NHTSA require grantees to report on efforts, such as research or community outreach, that the manufacturer is planning, or has taken, to increase the likelihood that accessibility goals will be met? Comments are requested on whether there is other information related to accessibility that NHTSA should require from an entity when granting its petition.

GM and Cruise Response: GM and Cruise believe ADS-equipped vehicles with advanced designs, like the Cruise Origin, have the potential to improve transportation for individuals with disabilities. As discussed in our Petition, GM and Cruise have engaged in numerous studies to inform user experience and product design goals for the Cruise Origin aimed at making it more accessible, as well as helping to ensure inclusive product development. As discussed in our response to Question 12, Cruise has applied learnings from engagements with the disability community to inform product development for a number of features to improve accessibility for customers, including improved wayfinding as well as tactile features for in-cabin buttons that can connect to customer support or end the ride early.

GM and Cruise are also collaborating with stakeholders within the accessibility community to enable a wheelchair-accessible Origin capable of transporting people in wheelchairs. We look forward to working with the agency to allow the expedited deployment of those vehicles when ready.

To further support these efforts, we support NHTSA and the U.S. Department of Transportation taking steps to develop best practices that manufacturers can use in their development of accessible AVs—among other steps—to help facilitate the deployment of wheelchair-accessible vehicles.

15. How should NHTSA consider equity in applying appropriate conditions to an exemption if it were granted? For example, should NHTSA require entities receiving a grant of their petition to report how the exempted vehicles were used to improve accessibility and equity in serving underserved communities? Should such an entity be required to provide plans about how it intends to ensure that access to its services is equitable in terms of neighborhood, income levels, race and ethnicity, age (etc.), and/or provide reports of how it achieved those objectives through use of the exempted vehicles? Should entities receiving a petition grant be required to report on barriers they encountered to deploying ADS-equipped vehicles in underserved communities and how those barriers could be overcome? Should such an entity be required to provide demographic data about its services, or report on efforts, such as research or community outreach, that the manufacturer is planning or has taken to ensure better that equity goals will be met? Comments are requested on whether there is other information related to equity that NHTSA should require when granting a petition.

GM and Cruise Response: GM and Cruise strive to ensure that the Origin will advance transportation equity for all communities. As discussed in our response to Question 12, Cruise has undertaken partnerships with leading organizations at the intersection of transportation,

energy, and environmental health equity to understand better how shared, autonomous, and electric vehicles could fit into community needs to address and mitigate disparities in transportation access and public health—as well as how developers can best integrate service to support community goals for cleaner, more inclusive transportation. The findings developed through these partnerships will help inform how our shared, electric AVs can fit into a broader set of tools for how emerging mobility can serve community goals and the public interest.

Additionally, Cruise operates and intends to use Origins for “Cruise For Good,” our social impact program devoted to addressing inequalities by ensuring underserved communities benefit from the access and connection that our AV fleet provides. As part of Cruise for Good, we have pledged at least 1% of our fleet to serving local communities in need. To date, we have delivered more than 2 million meals with our vehicles to vulnerable San Francisco citizens via our partnerships with nonprofits, including the San Francisco-Marín Food Bank—all without adding harmful greenhouse gas emissions to our neighborhoods in the process.

GM and Cruise would welcome the opportunity to meet with NHTSA periodically during the exemption period to discuss equity and other public interest issues.

16. How should NHTSA consider economic impacts when applying appropriate conditions to an exemption if it were granted?

GM and Cruise Response: GM and Cruise believe that the grant of this Petition will generate positive economic impacts in terms of job creation in the United States, particularly in automotive manufacturing and throughout the automotive supply chain, as well as increasing access and affordability to mobility (a key impediment for many job seekers, particularly those working third shifts), to many traditionally underserved communities. While it may be difficult to quantify the systemic economic impacts of any specific condition at the outset, GM and Cruise stand ready to support and work with NHTSA on the means and manner in which to best evaluate the gross economic impacts of the deployment of Origins over the term of the exemption and any potential renewal of such grant.

In conclusion, GM and Cruise look forward to working with NHTSA to address any unanswered questions that may arise in the public comments, and welcome reasonable reporting requirements that will help demonstrate how ADS-equipped vehicles like the Origin will promote the goals of the Safety Act and the public interest by reducing traffic accidents, injuries, and fatalities on our roadways, while advancing the agency’s state of knowledge as it crosses the bridge toward adopting AV FMVSSs for the industry.

Sincerely,



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