APPENDIX J.
COLORADO FREIGHT ADVISORY COUNCIL MEMORANDUM

Colorado Freight Advisory Council

Memorandum

TO: Colorado Emerging Mobility Impact Study Stakeholder Working Group

FROM: Jenyce Houg, Chair Colorado Freight Advisory Council

DATE: October 9, 2019

RE: Recommendations to the Colorado Emerging Mobility Impact Study on Industry Practices for the Residential Delivery of Goods

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Established in 2016, the Colorado Freight Advisory Council (FAC) serves as the statewide forum for private sector representatives to advise the Colorado Department of Transportation (CDOT) on commercial transportation needs, influence transportation policy, and collaborate with partners to develop a transportation system which supports the economic vitality of Colorado by providing for the safe, efficient, coordinated and reliable movement of freight.

CDOT's Emerging Mobility Impact Study is addressing issues of immediate interest to the FAC, including efficiency of residential goods delivery and potential imposition of fees on certain commercial motor carriers. Senate Bill 19-239 provides the FAC the opportunity to provide information and recommendations regarding current and evolving practices related to the residential delivery of goods.

This memorandum represents the FAC's collective guidance and recommendations to the Colorado Emerging Mobility Impact Study (EMIS). The information expressed in this document reflect the views of the FAC but should not be considered representative of the views of any single member company or organization.

Commercial Goods Carriers

Commercial goods carriers are typically large national and multinational firms engaged in facilitating interstate commerce through the movement of goods. These firms manage complex international supply chains through the operation of truck, rail, and air cargo fleet operations. Examples of large commercial goods carriers include enterprises such as UPS, DHL, FedEx, Ryder, Amazon, and others. The industry also includes smaller firms, such as independent parcel delivery, courier, and light trucking operations who are engaged in interstate or wholly intrastate operations focused on the distribution of goods to final destinations.

Commercial motor carriers are not considered an emerging industry, many firms that are household names began operations in mid-19th century and decades before the rise of e-commerce and the gig economy. The residential delivery of goods such as milk, water, and agricultural supplies have been commonplace for a long time and a variety of household goods and even homes were made available through the Sears and Roebuck company at the turn of the last century.

Today, essential medical supplies, household and consumer goods, and foodstuffs are delivered to millions of households across the country. Many consumers with limited mobility, medical necessities, or occupational limitations rely on commercial goods carriers to delivery essential items. This is a mature industry with well-established Federal and state oversight, regulation, and tax and fee systems. The industry is still evolving and adopting new system and vehicle technologies to increase efficiency and remain competitive, but should not be considered similar to new emerging forms of mobility such as transportation network companies.

Existing Federal and State Regulations and Fees

For some perspective on the current status of contributions under home deliveries, resident transporters are generally trucks or vans that are a critical piece of the overall movement of freight movements for products originating or destined to Colorado. These operators are viewed as a part of the overall trucking industry which as a sector is the largest contributor to the Highway Users Tax Fund today. The trucking sector, which includes these residential delivery providers, currently provides 35% of all of the taxes and fees paid into the HUTF today, while only constituting 6% of the vehicle miles traveled.

Colorado SB 19-239 defines commercial goods carriers as firms and enterprises utilizing on road vehicles under 14,000 pounds gross vehicle weight. In the United States, all commercial motor vehicles over 10,000 pounds gross vehicle weight and engaged in interstate commerce are subject to regulations and requirements imposed by the U.S. Department of Transportation (U.S. DOT) and the Federal Motor Carrier Safety Administration (FMSCA). In Colorado, commercial motor vehicles engaged in intrastate commerce and over 16,000 pounds gross vehicle weight must also comply with Federal and state regulations.

Relatively few commercial motor vehicles that are engaged in the residential delivery of goods as part of commercial establishment fit within the definition of SB 19-239. Most cargo step vans utilized by UPS, FedEx, or the USPS are larger than 14,000 lbs, as are trucks used to deliver groceries or consumer item direct from retailers. Vehicles that may fall the under 14,000 lbs legislative definition could include cargo vans such as the Mercedes Sprinter or Ford Transit and a variety of smaller vans based on passenger-vehicle type chassis.

Commercial motor vehicles under the scope of the Colorado EMIS study are generally required to comply with a wide array of certification, driver and vehicle safety, insurance, licensing, and business operation fees and taxes. In addition, private firms have adopted driver safety, licensing, operations, and vehicle maintenance standards that are more stringent than Federal and state regulations. Examples of regulations, requirement, and specific fees on commercial goods carriers include:

- FMCSA regulates vehicle safety and inspections, driver safety and records, hours of service, insurance, and other requirements under the agency's purview. Business incur significant costs to remain in compliance with safety regulations and often impose internal standards and driver requirements beyond requirements.
- U.S. DOT imposes Uniform Carrier Registration fees for carriers based on business type and fleet size. These fees range from $68 to $66,072 depending on fleet size. Additional business operating fees of $300 are collected for interstate carriers when applying for U.S. DOT Operating Authority, or MC Number.

- The State of Colorado requires vehicle registration fees specific to commercial motor vehicles operated over public highways that are based on vehicle weight and use. Annual base registration fees for trucks and truck tractors range from $7.60 for vehicles with a gross vehicle weight less than 2,000 lbs up to $203.00 for vehicles with a gross vehicle weight up to 14,000 lbs.
- The State of Colorado assesses specific ownership taxes for Tax Class B vehicles that are less than 16,000 lbs and used for the purpose of transporting property over public roadways. Hypothetically, specific ownership taxes over the first 10 years of a cargo van with a base MSRP of $34,495 such as a Mercedes Sprinter van could be up to and then exceeding $2,056.76.
- The State of Colorado's FASTER Road Safety and Bridge Surcharge for commercial vehicles weighing between 10,001 and 16,000 lbs is equal to $66.00 per year.
- The Colorado State Patrol enforces Federal safety and vehicle regulations and provides for additional safety inspections, requirements, and enforcement fees and penalties.

As a result of the significant Federal and state regulatory framework imposed on commercial goods carriers, fees and compliance costs are embedded in every parcel delivered to homes in Colorado.

Industry Efficiency Initiatives

Commercial goods carriers must adopt new technologies and operational techniques to remain competitive. The industry faces growing consumer expectations for rapid delivery and changing delivery patterns as more and more goods are delivered to more addresses on a more frequent basis. Operating margins across the industry are small and more than half of operating costs are incurred in the delivery stage from distribution center to final destination. Carriers must seek efficiencies in order to complete and those efficiencies are frequently found by reducing vehicle miles travelled per delivery trip, reducing fuel consumption, and increasing delivery density, or the number of packages delivered to a single address at a time. Because profit margins are very thin, residential delivery companies have a market incentive to be more efficient.

Carriers have responded to these market dynamics by optimizing delivery travel routes, ceasing left turns, and increasing shipment and stop density. On the backend, carriers have begun managing fleets for efficiency and fuel savings and introducing alternative fueled vehicles to fleets. For example, in 2019, Amazon introduced an option for consumer to select a single delivery day to cut back on missed packages and increase delivery density. Amazon lockers in retail locations and common spaces also serve to reduce trips with associated savings in fuel consumption, greenhouse gas emissions, and inefficient travel routing. UPS has avoided using at least 60 million gallons of conventional fuel since 2000[1] by diversifying its fleet to include alternatively fueled vehicles. Several major freight carriers have been working on sustainability metrics and greenhouse gas emissions. UPS for instance has been using the On-Road Integrated Optimization and Navigation (ORION) algorithm since 2018 to improve routes and mitigate environmental impact. ORION has decreased fleetwide greenhouse gas emissions by roughly 100,000 metric tons per year and cut fuel usage by 10 million gallons per year[2]. (In the Denver Metropolitan Area, alone, UPS over the past several years

[1] UPS, *UPS Rolling Laboratory At a Glance*, https://sustainability.ups.com/media/UPS-natural-gas-infographic.pdf
[2] UPS News, Twitter, https://twitter.com/ups_news/status/878401038977519616

has replaced 250 diesel package trucks with natural gas units which generate lower emissions.) FedEx has been tracking sustainability performance metrics since at least 2005, improving vehicle fuel efficiency by 39.6 percent[3] from the 2005 baseline. FedEx has also steadily increased its fleet of alternative fuel vehicles, using 42 percent more alternative vehicles in 2018 than in 2016.

In addition to market incentives to increase operational efficiencies which offer significant emissions and travel time savings, across the industry, private firms are already adopting sustainability initiatives and alternative delivery models without the need for government regulation or incentives.

Examples of these industry-led initiatives include:

- Sustainability and carbon neutral pledges
- Adoption of electric vehicles in fleets
- Off-peak delivery hours
- Alternative delivery programs
- Electric-bikes and urban delivery solutions
- Supporting parking availability and residential delivery policies
- Encouraging responsible and green consumer behavior

Commercial motor carriers have built-in market incentives to increase operational efficiencies with associated reductions in fleet emissions, excess fuel consumption, and vehicle miles travelled. Coupled with corporate sustainability pledges and self-funded initiatives to increase alternative fuel fleets, and encourage responsible consumer behavior, the commercial goods industry is adopting sustainable practices more quickly than other industries. As customer demands and transportation delivery practices continue to evolve, commercial goods carriers will continue to adapt and to adopt sustainable practices without the need for fee or incentive programs.

Carbon Efficiencies in Residential Delivery

The overall net impact of the rise of e-commerce on vehicle miles travelled and associated carbon emissions is currently the subject of academic research. The carbon impact of goods consumption is not always clear and depends on consumer use cases and behavior. In most cases, trip-chaining or side stops by consumers to a physical store location are by far the most efficient from a carbon production viewpoint.

However, as consumer behavior shifts and e-commerce continues to be a preference, or for some populations the only option to receive goods, commercial parcel delivery can be more efficient than dedicated trips to physical stores. For example, an analysis of Walmart's emissions across fulfillment channels showed that larger baskets make customer trip and last-mile delivery more efficient. Dedicated store trips by consumers can have 2.5 times the carbon impact when compared to shipping to home.[4]

[3] FedEx, *Multiplying Opportunities 2019 Global Citizenship Report,* http://csr.fedex.com/pdf/FedEx_GCR_FINAL_4.17.19_144dpi.pdf

[4] Bain & Company, *Retailer's Challenge: How to Cut Carbon Emissions as E-Commerce Soars,* https://www.bain.com/contentassets/bd2812c19f3e4859831a2c3629107afa/bain_brief_retailers_challenge_how_to_cut_carbon_emmissions.pdf

Current and Proposed Actions by the FAC on the Last Mile including Residential Delivery

Colorado's FAC is currently examining solutions to address rapid changes in the freight and commercial parcel delivery industry. Areas of first and last mile delivery, sustainability and efficiency, and reducing vehicle miles travelled are of significant interest to both private companies and the public sector. These are issues where the freight industry continues to collaborate on action and strategies in order to ensure that Colorado can continue moving goods safely, efficiently, and fairly.

Recommendations from FAC to SB 239 Emerging Mobility Impact Study

At this time there is a lack of data or information related to not only the scope of which companies are significantly engaged in home delivery but also the magnitude of those home deliveries, including volumes, trip lengths, emissions impact, and overall trends. The FAC hopes to collect more information on these first and last mile deliveries and pickups and to use this information to evaluate future strategies to make trips more efficient through reducing congestion, safer, and lessening emissions.

Without these data and better information on the actual impacts of supply chains and residential delivery options on carbon emissions and trip generation, a fee might actually lead to changes in consumer behavior that increase VMT and emissions statewide. In many cases residential delivery of products, when aggregated and scheduled for off-peak times, actually translates into less VMT and emissions than if consumers were to make individual dedicated store trips in personal vehicles. Combining various products into one delivery may be more efficient than if a consumer traveled to various physical stores to buy the same products. Considering the unintended consequences and long-term net impacts of potential fees is critical in this study.

Fee Implementation Challenges

In addition to the information presented in this memo, there are a number of other issues and questions that arise when considering the implementation of a residential delivery fee. These considerations include the following:

- A wide variety and diverse group of companies, whether specific delivery companies or businesses making their own deliveries, now perform residential deliveries. This includes package delivery companies, as well as companies delivering their own products including florists, grocery stores, medical equipment suppliers, pharmacies, restaurants, hardware stores, auto parts retailers, liquor stores, department stores, messenger and courier services and many more businesses. This diversity of operations and business types makes establishing and implementing a fee challenging.

- Unlike many of the other transportation service providers being analyzed by this study for SB 239, residential freight delivery is not solely a local or regional operation. Many of the packages or products being delivered originate from outside the state or even outside the country. If the origination point for the fee is with an online seller, this could involve any of thousands of companies across the country and even internationally. The nature of interstate commerce and

Federal oversight over this portion of the U.S. economy raises additional fee implementation considerations and challenges.

- Many of the parties receiving home deliveries are senior citizens, low income individuals, or disabled individuals who may not have access to a personal vehicle to travel to stores to purchase products. These populations are dependent on home delivery, yet they may be the least able to absorb additional costs. For this reason there has been discussion of exempting certain products from a delivery fee such as food, medicine, certain medical supplies as well as not assessing the fee on low income, seniors, or other disadvantaged groups. In the case of residential delivery making such distinctions would be very difficult. In many cases a package may not only include food items (nonperishable) or certain medicines that would be exempt but also other products that would not be. In most cases delivery companies have no idea what may be within the package being delivered so assessing a fee or exempting it could prove extremely difficult. What may be even more challenging would be discerning whether a package is being delivered to a low income or senior citizen's home which could be exempt. Package delivery routes span various income areas and different individuals may live in the same home, some above the poverty line and others below. These unintended consequences and potential externalities present additional fee implementation and impact challenges.

Fee Structure Challenges

- There are numerous questions and challenges associated with how a fee for residential delivery services would be assessed. With thousands of retailers throughout the country and internationally shipping products to homes in Colorado, how would the State of Colorado disseminate information about the fee and also ensure compliance? A new fee would require many online retailers to modify software and operations systems to add this change. The cost of compliance and administration of a fee could exceed revenue generated and would likely be passed on to consumers.

- A fee based on a percentage of the transportation service cost may not be immediately implementable. In many cases, sellers provider 'free delivery' or reduced fees as part of sales promotion. These cases would affect the base transportation service cost on which a fee is assessed. Determining actual transportation service costs attributable to an individual consumer is also impracticable without detailed data and information on trips, customers, and delivery options. These data are generally proprietary and would likely not be shared by participating companies. Even if data were available, determining the ultimate portion of a supply chain trip attributable to an individual consumer would be challenging and could lead to inaccurate assumptions or penalties for consumers in rural areas of Colorado.

- A flat fee would make no distinction of distance, size, or difficulty for delivery and would give rise to issue of equity among urban and rural consumers, low-income and high-income households and a host of other fairness concerns.

Summary of FAC Recommendations

A key recommendation to the SB 239 Working Group from the FAC is the consideration of new or additional information and education campaigns to inform consumers and the general public on

methods and ways that they can be a "greener consumer" in regard to residential deliveries. Such as program would stress the environmental benefits of bundling on-line deliveries and look at designating a specific day of the week for deliveries and requesting that delivery during an off-peak time. This strategy could be effective in providing for more efficient transport of parcels and other goods which would reduce the number of package delivery trips, leading to substantially less VMT and lower emissions. Consumer information could help to change behavior and could be coordinated with other travel demand management initiatives already in place across the state.

Currently, there is no state or municipality in the country that applies a specific fee on residential deliveries so there is no reference point or impact evidence available to consider in establishing such a fee. Based on the lack of information and the limited research on these residential delivery operations or the possible assessment of fees on them there is no way to discern the impact, challenges, costs, or implications of assessing such a fee. For these reasons, the FAC would suggest to the SB 239 Stakeholder Working Group that no specific fee on residential delivery services be recommended at this time.

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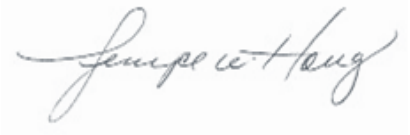

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