

How Will E-commerce Growth Impact Our Transportation Network?

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How will E-commerce growth impact our transportation network?

The steady growth in online retailing continues to rattle long-established business models and the shopping patterns of consumers (who are also taxpayers, voters, and drivers). Those consumers are increasingly choosing shorter delivery cycles—opting in some cases to receive their goods within hours rather than days.

The demand for more immediate delivery requires retailers to be more nimble and radically changes warehousing logistics. Sellers are augmenting their reliance on million-plus square foot facilities, adding smaller sorting and delivery hubs and locating them closer to their customers. Moreover, while retailers continue to employ traditional delivery services like FedEx, UPS, and USPS, they also are looking to independent contractors who use personal vehicles to transport packages in the same way that transportation network companies like Uber ferry passengers.

These changes can directly impact our transportation system, and they bring to light a number of challenges for transportation planners, operating agencies, and policy makers. For instance:

- Evolving delivery operations cloud the picture of how carriers are regulated. Much of the regulation of motor carriers in Texas relates directly to the weight capacity of the vehicles transporting cargo. Most traditional delivery operations fall under this statutory description, requiring certificates of operating authority from the Federal Motor Carrier Safety Administration. The use of personal autos by people acting as independent contractors may meet the basic definition of a motor carrier (transporting cargo for hire), but these contractors are not required to register as such because of the vehicles' smaller size. Consequently, they avoid a number of safety and operational requirements.
- Changes in urban logistics will impact roadway system use and needs. The further expansion of e-commerce will increase warehousing needs. These facilities, located increasingly within urban areas, require interstate highway access to accommodate more frequent daily truck traffic. Even with increased automation, these centers will require larger workforces than traditional warehouses would, creating more trips by employees coming from areas with limited transit service options and working multiple shifts.
- Personal vehicle use in express delivery growth will affect traffic patterns. Growing numbers of express deliveries involve personal vehicles, mirroring the model of transportation network companies, which may increase the number of non-peak-period trips into residential areas. These trips may not be captured in current regional travel demand models that help to forecast system needs, so planning agencies will need to adjust their models to ensure that those needs are more accurately projected.

E-commerce and its associated delivery demands will likely continue to disrupt traditional business practices. Planners and policy makers alike will need to closely monitor these changes to effectively plan and operate a transportation system that meets the needs of a growing population of road users and consumers.

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Executive Summary

As e-commerce grows as a percentage of total retail sales, consumers are choosing delivery options with shorter delivery cycles. Not only does this mean that Amazon Prime customers (65 million subscribers in September 2016) can choose Prime Now two-hour deliveries for some high-volume items, it means other retailers are offering same-day deliveries, as are some package delivery companies (United Parcel Service [UPS], Federal Express [FedEx], and United States Postal Service [USPS]) in certain cities. In some cases, the same-day deliveries are being accomplished through technology-enabled companies dispatching individual contractors using their personal vehicles, much like the transportation network company (TNC) model of passenger travel. This report refers to these same-day or two-hour delivery services of parcels, packages, documents, groceries, or food as “express delivery services.” This report reviews how express delivery services now operate, how they are regulated, and how they may affect the state’s transportation system.

Express Delivery Services Background Information

Express delivery services offered in Texas include retailers like Walmart and Amazon, less-than-truckload parcel carriers like UPS and FedEx, grocery delivery services like Instacart, parcel delivery services like Dropoff, and restaurant delivery services like DoorDash and UberEats. Chapter 1 of this report surveys publications and peer-reviewed research on e-commerce trends and expansion of express delivery services in a number of industries. Not only are express delivery services being deployed in greater numbers, e-commerce itself is changing retail logistics in the footprint and location of such fulfillment centers.

Since as much as 43 percent of all e-commerce sales were transacted on Amazon-owned sites in 2016, this report also details some published work that explains Amazon’s approaches to logistics. Amazon currently uses a range of logistics methods in Texas, as summarized in Table 1.

Table 1. Amazon Logistics Networks as of 2016.

Logistics Center	Purpose	Average Size	Locations in Texas
Fulfillment Center	Fill orders generally	1.0 to 1.2 million sq ft	10: Dallas–Fort Worth (7), Houston (1), San Antonio (1), San Marcos (1)
Sortation Center	Aggregate shipments by zip code from one or more fulfillment centers	200,000 to 300,000 sq ft	3: Irving, Houston, San Antonio
Delivery Station	Sort packages for outbound routes for last-mile delivery	60,000 to 100,000 sq ft	4: Farmers Branch, Plano, Fort Worth, Houston
Prime Now Hub	Deliver limited high-volume items in two hours	25,000 to 30,000 sq ft	Offered in Austin, Dallas–Fort Worth, Houston, and San Antonio

Source: (1).

Regulation of Express Delivery Services

Some e-commerce retailers use package delivery companies like UPS, USPS, or FedEx for same-day deliveries, and these companies are regulated as motor carriers for interstate and intrastate commerce. Other express delivery services meet the statutory definition of a motor carrier under Section 643.001(6) of the Texas Transportation Code: “An individual, association, corporation, or other legal entity that controls, operates, or directs the operation of one or more vehicles that transport persons or cargo over a road or highway in this state.” However, commercial motor vehicle regulations at the federal and state level are based in large part on the weight of the vehicles involved. Therefore, the use of personal automobiles and light-duty trucks by individuals acting as independent contractors of delivery services may meet the general definition of services of a motor carrier (transporting cargo for hire), but those individuals are currently not required to register as motor carriers given the size of the vehicles involved.

Chapter 2 of this report outlines the different types of regulations that affect express delivery services offered by registered motor carriers and those that use a digital network to arrange for transportation by dispatching and compensating a contract driver using the driver’s personal vehicle for the deliveries, as summarized in Table 2.

Table 2. Express Delivery Service and Motor Carrier Regulations.

Regulatory Subject	Express Delivery Service	Motor Carrier
Intrastate Operating Authority	None	Texas Department of Motor Vehicles, over 26,000-lb gross vehicle weight
Interstate Operating Authority	None	Federal Motor Carrier Safety Administration, over 10,000-lb gross vehicle weight
Financial Responsibility (insurance of vehicle and cargo)	Minimum standards for automobiles	\$750,000
Workers' Compensation	None (elective for companies)	\$300,000 for medical expenses, \$100,000 for accidental death, 70% of pre-injury income
Interstate Driver Qualifications	Minimum standards for automobiles	21 years old, commercial driver's license
Intrastate Driver Qualifications	Minimum standards for automobiles	18 years old, Class A commercial driver's license

Possible Impacts of Express Delivery Services on Transportation

The environment for businesses, consumers, and legislators involved in e-commerce and express delivery services can be expected to continue to change rapidly. Just as these changes are roiling the fortunes of different retailers and changing the buying patterns of consumers, the rapid changes pose challenges for transportation planners and policy makers to keep abreast of the shifting behaviors and outcomes. For reasons described in more detail in Chapter 3, this report does not present definitive conclusions about the consequences of express delivery services for Texas's transportation network but offers two possible areas of impacts associated with express delivery services, as summarized in Table 3.

Table 3. Possible Transportation Impacts for Express Delivery Services.

Area of Impact	Description	Implications
Changes in Urban Logistics	<ul style="list-style-type: none"> • E-commerce warehouses grow larger in urban locations. • Larger warehouses located in cities or extraterritorial jurisdictions require using interstates for access. • E-commerce fulfillment centers employ more workers than most warehouses. • E-commerce warehouses are often owned by developers. 	<ul style="list-style-type: none"> • E-commerce distribution centers generate more daily truck traffic, which metropolitan planning organizations (MPOs) need to consider in their plans, and cities have to build local roads for these trucks. • E-commerce centers attract commuter trips for employees, often outside transit service areas, which could add reverse-commute congestion on interstates. • Cities will need to consider e-commerce implications in issuing building permits for speculative warehouses that could be used for e-commerce fulfillment.
Use of Personal Vehicles in Commercial Deliveries	<ul style="list-style-type: none"> • Express delivery services involve personal vehicles of contractors. • Deliveries of packages, groceries, and meals may affect the number of non-peak-period trips into residential areas. 	<ul style="list-style-type: none"> • MPO travel demand models will need to be adjusted to account for commercial trips in non-commercial vehicles. • Express delivery services may pose challenges in mixed-use developments with limited freight zones and multiunit housing with limited storage for packages and fresh food deliveries. • Express delivery service trips and package delivery lockers in multiunit housing could reduce shopping trips by e-commerce consumers. • State and local governments may consider licensing and regulatory issues (driver licensure and insurance, food safety rules) associated with express delivery services. • Increased need for loading zone management practices given the complexities/demand of personal vehicles used for deliveries; higher zone demand generates increased need for detection and enforcement of the zones.

Conclusion

Legislators, local governments, and transportation planners will need to keep abreast of rapidly changing trends in retail—growth in e-commerce, shorter shipping timelines, and use of express delivery services to replace shopping trips with delivery trips. Expansion of express delivery services into grocery and restaurant purchases could induce more transactions from customers who are willing to pay to avoid a shopping trip.

Transportation planners will need to monitor these commercial trips using non-commercial vehicles in regional transportation resource plans. Policy makers will want to understand how many commercial delivery trips are being made by drivers and vehicles that operate outside the regulations governing other commercial motor carriers. Those regulations provide a level playing field for different firms moving goods and seek to increase the safety of such commercial freight travel. These observations of changing driving behaviors and business patterns will have to be made from the outside looking in because many of these e-commerce and express delivery businesses are private companies with closely held proprietary business plans and methods.

The interaction of these changing business patterns with the publicly owned transportation network could be monitored by the 24-member Texas Freight Advisory Committee, created by the Texas Transportation Commission under Section 1.85(a)(4), Title 43, Texas Administrative Code to serve as a forum to discuss “transportation decisions affecting freight mobility and promote the sharing of information between the private and public sectors on freight issues.” The committee would be able to facilitate information sharing about these e-commerce and express delivery service trends among private- and public-sector freight interests and share observations with the Texas Transportation Commission and policy makers in the Texas Legislature.

Chapter 1. Background Information

Although new trends in the interaction between online commerce and rapid shipping options emerge rapidly, this section offers an overview of current information available about express delivery services and e-commerce trends in general.

General E-commerce Articles

The research team read and reviewed well over a hundred articles, presentations, webinars, or other media related to general e-commerce trends while preparing this report. Only a few can be covered here. The largest benefit from this area of the literature review was the development of an understanding of just how far and in what ways e-commerce in general, and especially two-hour delivery trends, might impact transportation planning and operational needs in the near- and long-term future. Several trends were identified and are summarized in the following sections.

Growth of Market Penetration by Amazon and Other E-commerce Providers

An article in *Internet Retailer* magazine reported the findings of a recent study by Slice Intelligence noting that Amazon accounted for 53 percent of all e-commerce growth in 2016. The same study showed that Amazon-owned sites accounted for 43 percent of all online purchases in the United States in 2016 (U.S. e-commerce sales in the fourth quarter of 2016 totaled \$101.6 billion). This number is up from 33 percent in 2015 and from 25.4 percent in 2012 according to Commerce Department numbers (2). This level of market share within any one market segment of retail (i.e., greater than 40 percent) was noted as remarkable, with Walmart holding only a bit more than 9 percent of the traditional retail market over the same period from 2012 to 2015 (U.S. retail sales in the fourth quarter of 2016 totaled \$1.237 trillion).

Another article, in *Money* magazine, pointed out that an estimated 44 percent of U.S. households were subscribers to Amazon Prime at the \$99 per year membership service level in late 2016, with potential to reach 50 percent by the end of the year. The article also stated that more than 70 percent of households with an income over \$112,000 annually were members (3). The article quoted a CNBC estimate that Amazon Prime members are worth \$143 billion to the company over their lifetimes based on the numbers of subscribers and actuarial estimates and adding 12 million members in 2016, 10 million in 2015, and 7 million in 2014.

Role of TNCs in Delivery

The most comprehensive report in this area was produced by David Jinks of ParcelHero, an application developer that focuses on large and heavy deliveries in the United Kingdom (UK) and around the world (4). Among the findings revealed in the report, which noted the potential for Uber and other TNCs to provide parcel services, were the following:

- Uber's mold-breaking taxi crowd-share app works equally well in the delivery industry, transforming customers' experiences.

- Uber is the most funded start-up in the world, valued at \$50 billion and aiming for \$60–70 billion in its latest funding round; however, Uber runs at a loss, and the entire global taxi industry is only worth \$22 billion. In contrast, the domestic global courier sector generates around \$246 billion. Uber will earn \$24.6 billion annually by capturing 10 percent of the global market.
- Uber sees the UK’s £7.1 billion courier market as a particularly ripe market for logistics. Uber’s UK general manager said, “We’ve already started going in that direction.”
- UberRUSH has already launched successfully in New York, San Francisco, and Chicago in partnership with local retailers, leading stores, and fashion brands.
- Uber has the scale to enable retailers to “get local.” The technology could also offer customers the possibility to set the price they wish to pay, as well as share deliveries.
- There is potential for a significant tie-in (and possible merger) with an online giant such as Amazon, Google, or Microsoft.

Other insights were that current same-day and on-demand delivery services are mostly done by smaller companies that could be potentially challenged by a TNC such as Uber and that over 15 percent of Uber drivers have previous experience in the delivery industry (4).

Finally, the report noted that by using a TNC as a delivery platform, retailers can “get local” to do away with large national distribution centers and eventually shift to a technology-based, shared or ganged delivery model. This shift would cut costs and reduce environmental impacts in the future, thus impacting larger transportation trends (4). The report included a quote from James Tompkins, CEO of supply chain consultancy Tompkins International, who stated that if Uber were to enter parcel delivery operations, then:

the impact will totally change traffic flows. And the reality is, UPS and FedEx are in the wrong business because they are in the nationwide delivery of parcels. There is no nationwide delivery of parcel activity anymore because the 3PLs [third-party logistics firms] and the retailers and the consumer products companies, who are becoming retailers, all need to get local.

The report also stated that U.S. overnight delivery (both box and envelope) accounts for less than 10 percent of FedEx’s value and that this area is one where Uber (or other TNCs) could compete.

Barriers/Hurdles to E-commerce Market Penetration

The report/presentation *Reinventing the Last Mile*, based upon research by OC&C Strategy Consultants in the UK, provided an overview of some of the remaining barriers to e-commerce (5) based on a survey of 1,000 customers. Among those findings are the following:

- Poor predictability and options for home delivery times are reducing completion of online purchases for several reasons—lack of convenient times, required attendance for delivery, uncertainty about delivery timing, and lack of clarity regarding need to be home

for delivery—resulting in abandoned online baskets or carts. Sixty percent of abandoned carts are due to this uncertainty.

- Speed of delivery and “free delivery” do not meet expectations. Customers want free delivery, and they want it more quickly.
- Same-day delivery should be <£4 (or about \$5).

The report also pointed out that the shift online is increasing the cost to fulfill/deliver parcels, and this cost varies greatly by commodity as a percentage of the overall sales cost (5).

Formal Research

Since e-commerce trends are changing so rapidly, much of the background information in this report comes from secondary sources—magazines, newspapers, and trade journals. Researchers also reviewed formal research sources (articles in peer-reviewed scientific or academic journals or university publications) for relevant content on same-day home parcel delivery services and associated carrier practices, with a focus on articles published in the past two years (2015–2017) and focused on operations in the United States or the UK.

Two studies focused on freight deliveries and purchasing patterns of students in residence halls at the University of Southampton. The first study reviewed findings from a survey of 486 students from four residence halls with a total population of 5,000 students (6). The study revealed a number of issues associated with e-commerce purchases among a dense population; one such issue involves increasing numbers of delivery visits by numerous different carriers, which the authors anticipate getting worse if there are significant increases in same-day delivery services. This can increase workloads for residence hall staff and result in safety, environmental, aesthetic, and courier delivery problems due to congested parking, particularly during intensive or holiday/seasonal shopping periods. Subsequent research (7) used the same survey data to evaluate the prospects for a consolidated delivery center by reviewing the habits of frequent and less-frequent online shoppers. The more frequent shoppers were statistically more likely to use same-day delivery, more likely to be willing to pay extra for same-day delivery, and more likely to report that same-day services will be important to them in the future.

Another report reviewed literature about online retail shopping and residential parcel delivery in the UK (8). The report focused on grocery delivery services like AmazonFresh and other store-related services, as well as other parcel delivery methods. The process referred to as express delivery services in this report was called “crowdshipping” in the UK report:

People wishing to deliver Amazon parcels can also sign up to Amazon Flex. They require their own vehicle (car, van or motorbike with box storage) and an Android mobile phone. Amazon refers to these people as their “Delivery Partners.” These deliverers collect their parcels from local Amazon delivery stations in their area. Amazon describes this work as “flexible” for those who want to “turn free time into supplementary income.”

The report speculated that increases in same-day deliveries for non-food small items and grocery sectors would likely be due to retailer competition for quality and speed of service in an effort to win market share. Probable effects of such an increase are decreases in retailer profit margins; less-efficient delivery operations; and increases in vehicle activity leading to greater traffic levels, energy use, environmental impacts, and road accidents.

Two final reports reviewed the prospects of e-commerce and express delivery in the United States. One report (9) discussed same-day delivery services:

Amazon and Wal-Mart offer same-day delivery in a limited number of markets. In this emerging, highly fragmented market, fringe players in large metropolitan areas such as Zipments in New York City are offering same-day options for local retailers and e-tailers to deliver shipments from local fulfillment centers. However, it is not necessarily easy to adapt and deploy this same-day capability, and it has not emerged as the sole value proposition of a post or delivery service.

The other report considered the effects of e-commerce on city logistics (10), suspecting that express delivery services would “further increase the number of freight movements as it will make the coordination and consolidation of direct-to-consumer deliveries even more challenging.”

Related PRC Research

As part of the literature review, past Texas A&M Transportation Institute (TTI) Policy Research Center (PRC) research was reviewed for related topics. Three pertinent primary reports were found. First was a recent (January 2017) report—entitled *How Will Millennials Impact Freight Flows in Texas?*—revealing the results of a late 2016 survey of 1,310 millennials in Texas regarding their purchasing habits (11). This report focused on the important demographic of those born between 1983 and 2000, who represent approximately 25 percent of the U.S. population and make up more of the current workforce than the Baby Boomer generation. The results of the survey showed that although online shopping had become an important part of their buying habits, 75 percent of the respondents still preferred to shop both in a store and online. Among the survey’s other findings were the following (11):

- *“High-income” respondents (those earning over \$50,000 per year) receive more packages by a 2.7 to 2.1 ratio;*
- *Income was the factor most closely tied to the number of packages received;*
- *Suburban respondents (70 percent) were most likely to have received a package in the past week compared to 68 percent of urban residents and 61 percent of rural residents; and*

- *Over half of high-income, urban residents (54 percent) expressed the desire to purchase a home in a suburban or rural area which would move their demand for fast home delivery to one of these geographic areas if they indeed moved.*

The other two prior TTI PRC research products concerned Texas policies for TNCs:

- *Policy Implications of Transportation Network Companies (12).*
- *Motor Carrier Code Review—Considerations for the Legislation of Transportation Network Companies (13).*

The first report (a PRC policy brief) defined and described TNCs, laws regulating them in Texas and the United States, and rules related to drivers, vehicles, etc. used in TNC services. It also described laws in other states and regulatory measures taken at the municipal level within the state of Texas, and it provided general background information on TNCs to guide legislators in decision-making regarding new laws that might be needed (12).

The second (a PRC technical memorandum) provided specific information on how current laws and exemptions to the Texas motor carrier laws may or may not properly cover the operations of TNCs—especially TNCs operating in package delivery services. The focus of this technical memo was on whether TNCs can be considered motor carriers under current law, if a new category and/or new regulations are necessary, or if modifications to the current law might suffice. An extensive review of relevant case law for shipping companies and a discussion of how TNCs may not fit into the current definitions were provided (13). (A more detailed analysis of this topic and its application to the issues covered in this study is provided in the next section of the report.)

E-commerce Grocery Delivery Services

According to a report from Unata, eGrocery adoption more than doubled from 8 percent in 2015 to 19 percent in 2016, and adoption is expected to rise to more than one-third of online shoppers in 2017 (14). EGrocery is a type of online shopping that allows consumers to order groceries for pickup at the store or delivery through each service provider’s website. Many grocers and online retailers in the United States, such as Walmart, Costco, Kroger, Amazon.com, and Jet.com, are providing a home delivery service or the ability to shop online and pick up at the store.

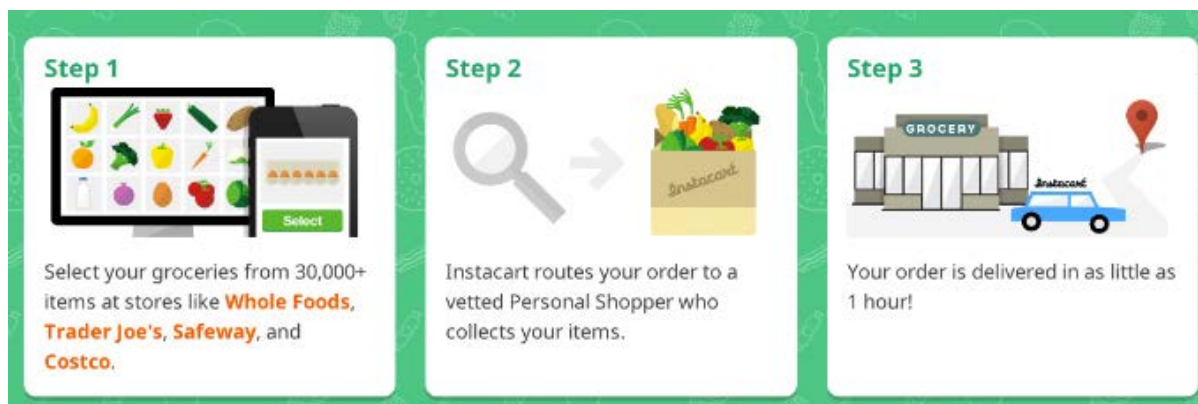
AmazonFresh, a subsidiary of Amazon.com launched in 2007, allows consumers to purchase groceries online and have them delivered directly to wherever they want within the service areas. The company continues to expand its service areas, which are now available at various metropolitan areas in the United States, including Seattle, Los Angeles, Chicago, and Dallas (15, 16). Customers can order not only fresh groceries but also prepared meals, toys, household goods, and more, and those orders are filled at a nearby fulfillment center or hub (17). Moreover, foods from selected local marketplaces can be delivered at customers’ reserved times. Figure 1 depicts an AmazonFresh delivery.



Source: (18).

Figure 1. AmazonFresh Delivery Depiction.

Unlike AmazonFresh, which uses its own vehicles for delivery, several grocers have partnered with Internet-based grocery delivery service providers such as Shipt and Instacart. Shipt delivers groceries from warehouse clubs like Costco even though customers do not hold a membership to the store (19). Instacart is also partnering with major grocers such as Whole Foods Market, Costco, and HEB (20). Products from HEB can be delivered via Shipt and Instacart in as little as one hour in various Texas cities and surrounding areas, including San Antonio, Houston, and Austin (21), as well as Dallas–Fort Worth (DFW), Waco, Killeen–Temple, Bryan–College Station, Corpus Christi, and soon the Lower Rio Grande Valley (22). Both these firms are classified as express delivery companies in this report since they use technology to connect to independent contractors using their own personal vehicles to make the deliveries. The Instacart delivery process is shown in Figure 2.



Source: (23).

Figure 2. Instacart Delivery Process.

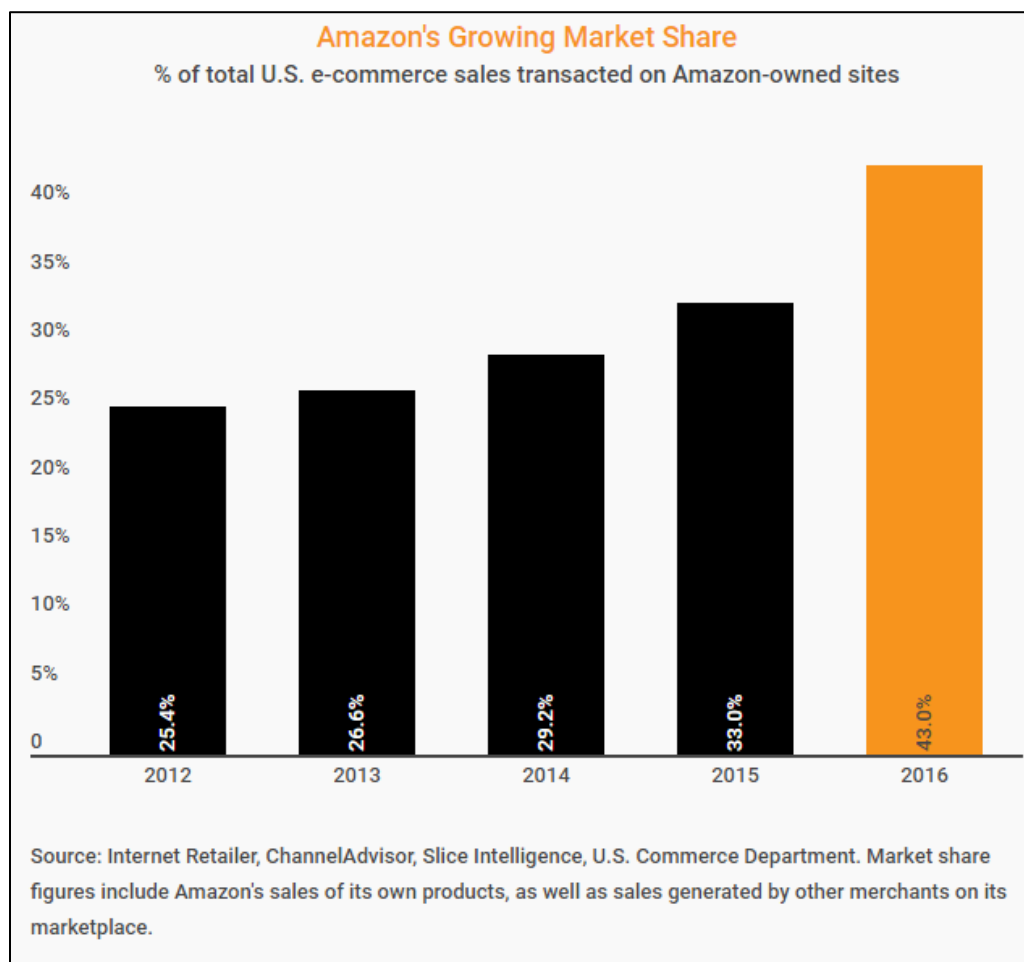
Besides home delivery services, some grocers like Kroger and Walmart provide same-day pickup services. Recently, Amazon introduced the AmazonFresh pickup service, which is a drive-in-type grocery store for customers. Customers can shop online, and their order will be ready for pickup as soon as 15 minutes after it is placed (24). The initial roll-out was in Seattle, Washington.

The expansion of these types of services can substitute individual shopping trips and enhance the efficiency of urban trucks by delivering more packages in the same route, which may eventually

alleviate urban traffic congestion (25). However, in several metropolitan areas with a lack of available parking, particularly at and/or near grocery stores, more congestion may occur due to the mixture of delivery vehicles and private vehicles jockeying for limited numbers of parking or loading zone spaces.

Amazon

Amazon is an online retailer that sells more than 480 million products (26). It is reported that in 2016, 43 percent of all U.S. retail purchases occurred on Amazon-owned sites, a value that had grown from 25 percent five years prior (see Figure 3) (2). It is estimated that as of September 30, 2016, 65 million U.S. consumers participated in the Amazon Prime membership program, which costs \$99 per year (2).



Source: (2).

Figure 3. Amazon U.S. E-commerce Market Share, 2012–2016.

Amazon strives to be customer-centric, providing products and offering delivery schedules based on customer desires and demands. This focus on serving the customer faster has dramatically altered the logistics network required to support deliveries, currently as fast as one hour for

packages. It has also prompted Amazon to gain more control on outbound shipment handling to reduce shipping costs and provide the required levels of service.

Amazon now offers delivery times ranging between seconds for digital media to multiple days for standard shipping of packages. The changes in the logistics network are focused on offering same-day, two-hour, or one-hour deliveries. The Amazon Prime same-day and one-day delivery service allows Prime members in certain markets who place orders greater than \$35 to receive free shipping on the same day if ordered before noon, or the following day if ordered by the afternoon (27). Delivery fees accrue for orders under \$35 for Prime members and for non-Prime members who select same-day or one-day delivery. Prime Now, offered exclusively to Prime members, provides two- and one-hour deliveries on over 25,000 high-velocity items, such as household items, electronics, and seasonal items (28). Amazon Prime Now also offers deliveries from participating restaurants and stores, with the Texas markets including Dallas, Austin, and Houston for restaurants and Dallas for stores.

Amazon began with two fulfillment centers in the United States: one in Seattle at 93,000 square feet and one in Delaware at 202,000 square feet (*1*). Fulfillment centers are designed to fill orders, originally by employees handpicking items from shelves and placing them into boxes for shipping. These packages then ship directly from the fulfillment center to customers using one of the major package delivery companies over several days. Amazon now has an estimated 95 fulfillment centers with the potential for 26 more, according to MWPVL International (*1*). Amazon's drive to meet faster delivery times and expand services provided has resulted in several additional layers of warehouses following the fulfillment centers, including sortation centers, delivery stations, and Prime Now hubs. These additional layers provide both the opportunity for faster deliveries and the ability to control logistics. MWPVL International reports that the new distribution strategy calls for same-day or next-day delivery for all major cities within the United States, with the goal to enable same-day delivery as an option for at least half of Amazon's U.S. customers (*1*).

Figure 4 provides a simplified schematic of Amazon's supply chain based on the type of service utilized. The figure shows that slower deliveries may ship directly from fulfillment centers, not necessarily located near the customer, and then travel via a package delivery company and/or USPS to the customer. Same-day and one-day deliveries begin from a fulfillment center located nearby before being transported to a sortation center that then sends the package to the closest USPS facility. The package is then delivered by USPS, including on Sundays. Prime Now customers order products available from a nearby Prime Now hub or participating store or restaurant. The orders are then delivered by local courier or on-demand delivery driver (crowdsourced).



Source: (26).

Figure 4. Simplified View of Amazon's Supply Chain.

Fulfillment Centers

The purpose of a fulfillment center is to fill orders. Based on recent construction, the typical fulfillment center is between 1.0–1.2 million square feet (29). One source indicates that Amazon constructed about 20 new fulfillment centers in 2016, with the strategy to push fulfillment centers closer to customers (30). MWPVL International reports that Texas has 10 fulfillment centers in the state: Dallas–Fort Worth (seven), Houston (one), San Antonio (one), and San Marcos (one) (1). In March 2017, the City of Katy, in the Houston metropolitan area, announced that it worked with Amazon to facilitate the construction of a center in Katy, providing an additional center for the Houston metropolitan area (31).

Sortation Centers

The purpose of the sortation centers is to aggregate shipments from one or more fulfillment centers by zip code, where the packages are then sent to the USPS post office responsible for each zip code. USPS performs the last-mile delivery, including on Sundays. Sortation centers also ship packages to Amazon's delivery stations. Amazon has rapidly been adding sortation centers, which typically range between 200,000 to 300,000 square feet in size (29). With the addition of weekend deliveries by USPS, sortation centers are required to efficiently sort packages by zip code. In addition to making weekend deliveries possible, one source indicates that sortation centers "reduce shipping costs and increase speed. They play a key role in next-day and same-day delivery, shifting control of last-mile delivery from parcel companies to Amazon" (26). MWPVL International reports three sortation centers in Texas: Irving, Houston, and San Antonio (1).

Delivery Stations

Delivery stations are the final node in the supply chain for some Amazon shipments. The role of delivery stations is to sort packages for outbound routes for last-mile delivery to customers in a tightly defined area. MWPVL International reports that these buildings, typically warehouses between 60,000 and 100,000 square feet, are positioned close to large metropolitan cities. Deliveries are performed by local courier companies or on-demand delivery drivers. Texas has up to four delivery stations in the Dallas–Fort Worth and Houston areas (1).

Prime Now Hubs

As previously indicated, the Amazon Prime Now service offers one- or two-hour deliveries to consumers. The Prime Now hubs consist of smaller footprint distribution buildings positioned close to the centers of large metropolitan cities across the country (1). The Prime Now service offers customers a limited selection of items to choose from, which Amazon notes to be around 25,000 items. Once placed, the orders are fulfilled at the Prime Now hub and delivered by local courier company or on-demand delivery drivers. In Texas, the Prime Now service is offered in Austin, Dallas, Houston, and San Antonio, according to Amazon (28). Figure 5 shows such a facility in Ohio.



Source: (32).

Figure 5. Amazon Spokesman in Amazon Prime Now Hub in Columbus, Ohio.

Amazon Flex

Amazon Flex is Amazon's latest effort to offer fast deliveries. It is a delivery service that hires individual vehicle owners to deliver Amazon Prime Now packages using their personal vehicles. Drivers use an app to sign up for shifts to pick up packages at Prime Now hubs or participating stores and restaurants and deliver the items to customers' doors (33). Amazon shows the on-demand delivery service currently in Austin and Dallas, with upcoming opportunities in Houston and San Antonio (34). Reuters reports that Amazon is also investigating the use of Flex drivers to deliver packages outside the Prime Now service. The drivers would be required to have four-door mid-sized or larger cars and would need to drive to large fulfillment centers to pick up packages for delivery (33).

Chapter 2. Statutory and Regulatory Review of Express Delivery Services

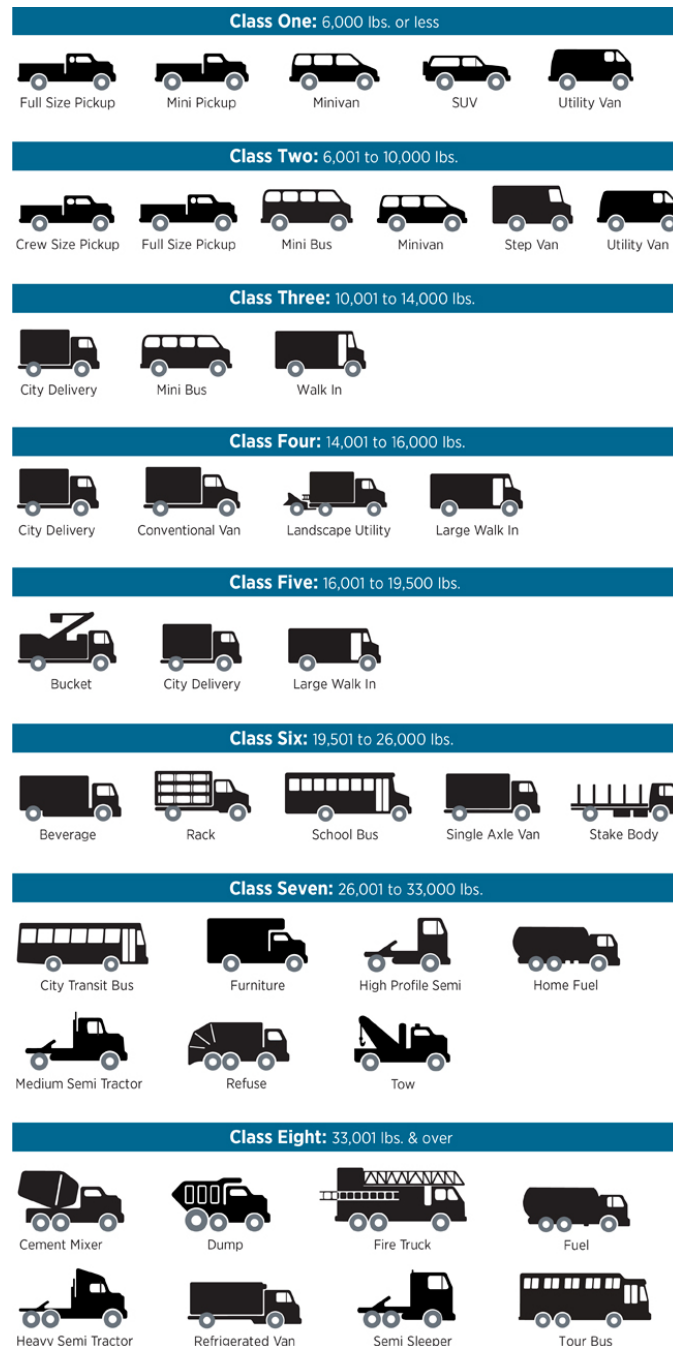
Express Package Deliveries and Commercial Motor Vehicle Distinctions

Some e-commerce retailers use express package delivery services like UPS, USPS, or FedEx for same-day deliveries. These same retailers and other companies that offer express delivery services (same-day delivery of parcels, packages, documents, groceries, or food) may use a business model similar to TNCs (as defined in Section 1954.001 of the Texas Insurance Code): a company that uses a digital network to arrange for transportation by dispatching and compensating a contract driver using the driver's personal vehicle for the deliveries.

Both package delivery and express delivery services may meet the definition of a “motor carrier” under Section 643.001(6) of the Texas Transportation Code: “an individual, association, corporation, or other legal entity that controls, operates, or directs the operation of one or more vehicles that transport persons or cargo over a road or highway in this state.” However, much of the statutory regulation of motor carriers in Texas law is practically oriented around the gross vehicle weight rating of the vehicles transporting cargo. Vehicle size affects the kinds of regulations that apply to a package delivery service like UPS and FedEx and the regulations that apply to express delivery services.

Motor carriers operating vehicles over 10,000 pounds in gross vehicle weight in interstate commerce are required to obtain certificates of operating authority from the Federal Motor Carrier Safety Administration (motor carriers operating in interstate commerce in 41 states can participate in the Unified Carrier Registration program, a program that shares registration fees among the states in which the motor carrier does business). Motor carriers operating within Texas are required by Section 643.051 of the Texas Transportation Code to register with the Texas Department of Motor Vehicles if they operate commercial motor vehicles—defined by Section 548.001 of the Texas Transportation Code as motor vehicles used on a public highway to transport passengers or cargo if the vehicle has a gross vehicle weight rating of 26,000 pounds or more. Most of these express package delivery services operate commercial fleets that have vehicles that exceed the 10,000-pound limit for interstate operations and 26,000-pound requirement for Texas commercial motor vehicle registration.

Therefore, the use of personal automobiles and light-duty trucks (vehicles under 8,500 pounds in gross vehicle weight, as defined by federal emissions standards set by the U.S. Environmental Protection Agency [EPA]) by individuals acting as independent contractors of delivery services may meet the general definition of services of a motor carrier (transporting cargo for hire), but those individuals are currently not required to register as motor carriers given the size of the vehicles involved. Figure 6 shows the weight-based vehicle classification system employed by EPA.



Source: (35).

Figure 6. EPA Weight-Based Vehicle Classification System.

Recent PRC research examined the question of whether TNCs involved in passenger transportation could be considered as motor carriers, given the distinction between the TNC corporate entity and the independent drivers that work with the TNC network (12). That review found that “TNCs and TNC drivers are not clearly excluded from the definition of a motor carrier in Section 643.001 or exempt under Section 643.002 from the laws regulating motor carriers under Texas law.” While that question may be unresolved, this chapter examines the

distinction between regulatory regimes for commercial motor vehicles and personal autos used for express delivery services.

Express Cargo Delivery Services—Some of the Same Regulatory Issues as TNCs

Many of the same regulatory issues raised in the PRC report *Policy Implications of Transportation Network Companies* apply to personal vehicles carrying cargo for compensation connected through a company’s digital network (12). This section addresses how the TNC-related issue is covered under motor carrier regulations and non-motor carrier regulations.

Vehicle and Cargo Insurance

49 CFR 387.9 establishes the minimum level of financial responsibility for interstate motor carriers (interstate operation of vehicles over 10,000 pounds) at \$750,000. Otherwise, commercial automobile operations must meet the state’s minimum standards in Section 601.072 of the Texas Transportation Code (Motor Vehicle Safety Responsibility Act). As the PRC TNC report states, “Personal automobile policies often include a livery exclusion: a clause asserting that coverage may not be provided for a vehicle while it is used for commercial purposes or for a fee” (12).

The National Association of Insurance Commissioners adopted model legislation to consider insurance coverage for TNCs in the three phases of compensated travel that otherwise would be excluded from personal auto liability coverage (12):

- Period 1: A TNC driver is logged onto the TNC digital network and available for a ride.
- Period 2: A TNC driver is en route to an accepted passenger.
- Period 3: A passenger has been picked up in a TNC vehicle.

Standard state liability of the driver can cover Period 1, but higher limits apply for Periods 2 and 3; Section 1954.053 of the Texas Insurance Code requires TNC coverage for Periods 2 and 3 at a total aggregate limit of liability of \$1 million for death, bodily injury, and property damage for each incident. With the current exclusions in personal auto insurance policies for compensated driving, unless express delivery companies were to provide insurance services directly for their contracted drivers, the use of personal vehicles for express delivery services could leave those automobiles and their drivers without the required auto insurance coverage while engaged in compensated service.

Driver Workers’ Compensation Insurance Coverage

Section 643.106 of the Texas Transportation Code requires motor carriers registered with the Texas Department of Motor Vehicles to provide workers’ compensation insurance coverage (as governed and defined by Chapter 406 of the Texas Labor Code) or accidental insurance coverage for their employees:

- \$300,000 for medical expenses for at least 104 weeks.
- \$100,000 for accidental death and dismemberment.
- 70 percent of an employee's pre-injury income for at least 104 weeks when compensating for loss of income.
- \$500 for the maximum weekly benefit.

In the case of TNCs, Section 1954.151 of the Texas Insurance Code provides that insurers are authorized to exclude from standard auto insurance coverage any losses or injuries occurring while a TNC driver using a personal vehicle is logged onto a TNC digital network or engaged in a prearranged ride, which would exclude TNC drivers' liability coverage for bodily injury, personal injury protection, and medical payment coverage under standard auto insurance policies. Express delivery services could elect to provide workers' compensation insurance coverage (just as any other Texas employer could elect to provide the insurance since workers' compensation is not mandatory in Texas) or another form of health insurance for drivers. Otherwise, express delivery drivers might need to provide their own health insurance and/or temporary disability insurance to pay for medical expenses and lost wages associated with injuries sustained in auto accidents while driving for an express delivery company.

Driver Qualifications

Drivers over 18 years old operating a commercial motor vehicle (over 26,000 pounds) in intrastate service in Texas are required by Section 522.041 of the Texas Transportation Code to obtain a Class A commercial driver's license (CDL) from the Texas Department of Public Safety; 49 CFR 391.11 requires commercial drivers operating in interstate service to be at least 21 years old before obtaining a CDL. Texas, like other states, is required by 49 CFR 383.73 to conduct a review of the CDL applicant's driving record to ensure that the applicant does not already have a CDL from another state and has not been disqualified under 49 CFR 383.51 (which establishes disqualification periods for major offenses, serious traffic violations, railroad-highway grade crossing offenses, and commercial motor vehicle safety out-of-service order violations). For non-commercial driver's licenses, Chapter 521 of the Texas Transportation Code governs the administration of driver's licenses by the Texas Department of Public Safety and establishes programs for the collection of accident records and various statutory conditions that result in suspension or revocation of driver's licenses. Employers can obtain license status information from the Department of Public Safety or through private services like the National Drivers Registry (36).

Company Regulation

For purposes of Texas franchise tax calculations, Section 171.1011(g-7) of the Texas Tax Code allows "qualified courier and logistics companies" to exclude subcontracting payments made by the company to non-employee agents for the performance of delivery services for the company from its franchise tax revenue calculations. This is the only section of Texas statutes that covers

this particular business classification. A qualified courier and logistics company is defined by this section of the franchise tax code as follows:

A “qualified courier and logistics company” means a taxable entity that:

(1) receives at least 80 percent of the taxable entity's annual total revenue from its entire business from a combination of at least two of the following courier and logistics services:

(A) expedited same-day delivery of an envelope, package, parcel, roll of architectural drawings, box, or pallet;

(B) temporary storage and delivery of the property of another entity, including an envelope, package, parcel, roll of architectural drawings, box, or pallet; and

(C) brokerage of same-day or expedited courier and logistics services to be completed by a person or entity under a contract that includes a contractual obligation by the taxable entity to make payments to the person or entity for those services;

(2) during the period on which margin is based, is registered as a motor carrier under Chapter 643, Transportation Code, and if the taxable entity operates on an interstate basis, is registered as a motor carrier or broker under the unified carrier registration system, as defined by Section 643.001, Transportation Code, during that period;

(3) maintains an automobile liability insurance policy covering individuals operating vehicles owned, hired, or otherwise used in the taxable entity's business, with a combined single limit for each occurrence of at least \$1 million;

(4) maintains at least \$25,000 of cargo insurance;

(5) maintains a permanent nonresidential office from which the courier and logistics services are provided or arranged;

(6) has at least five full-time employees during the period on which margin is based;

(7) is not doing business as a livery service, floral delivery service, motor coach service, taxicab service, building supply delivery service, water supply service, fuel or energy supply service, restaurant supply service, commercial moving and storage company, or overnight delivery service; and

(8) is not delivering items that the taxable entity or an affiliated entity sold.

For the purposes of this analysis, a qualified courier and logistics company seeking this franchise tax exemption is registered as a motor carrier by the Texas Department of Motor Vehicles (and therefore carries workers' comp coverage) and will carry an automotive liability insurance policy

covering vehicles hired or otherwise used by the company with a combined single limit of at least \$1 million. The Comptroller of Public Accounts (which administers Texas's franchise tax) does not have readily available information on which firms (including any that might be express delivery service companies) have sought the franchise tax revenue treatment afforded to a qualified courier and logistics company.

Express Food Delivery

Retail food establishments that generate express delivery services for grocery or restaurant deliveries are subject to regulation of food safety laws delegated to state and local health agencies—in Texas, by the Texas Department of State Health Services Regulatory Services' Retail Food Establishments Program. This program regulates both retail food establishments (where food is prepared for individual portion service) and retail food stores (offering food and food products to consumers for off-premises consumption) (37). Both types of businesses may generate shipments for express delivery service companies that specialize in grocery delivery or restaurant deliveries. The transportation of food from restaurants and grocery stores by express delivery service companies is not regulated to the same degree that food transportation safety is covered by the Food and Drug Administration's Food Safety Modernization Act Final Rule on Sanitary Transportation of Human and Animal Food (21 CFR Subpart O) (38). The retail food establishment rules are not clear on how food safety regulations are extended to grocery and food delivery services to consumers.

Employee Classification Issues

The use of independent contractors for transportation services has raised issues of whether the contractors should be considered employees of the transportation companies, which would then involve issues of application of labor laws governing wages, overtime, health and workers' compensation insurance, and collective bargaining. This matter of employment classification has been the subject of litigation by transportation contractors in trucking drayage services (delivery of containers and trailers from port and intermodal terminals), TNCs, and some express delivery services (39). In the case of Texas TNC laws, Section 1954.102 of the Texas Insurance Code addresses this classification issue by expressly declaring that a TNC "does not control, direct or manage a personal vehicle or a TNC driver who connects to the company's digital network except as agreed by written contract." The issue of classification of express delivery service drivers involves more complicated legal determinations beyond transportation regulation, certainly beyond the scope of this research. Such issues are likely to be discussed by shippers, motor carriers, and contractors.

Summary

Express delivery services using personal light-duty cars and trucks of contracted drivers are not subject to the same kind of regulations as motor carriers operating larger vehicles. Registered motor carriers are also subject to stricter requirements for insurance coverage, driver licensing, and workers' compensation coverage. Just as TNCs have generated consideration of particular

regulations to address the regulatory limitations of compensated personal vehicle use for passenger transportation, the use of personal vehicles by contractors using their own personal vehicles for express delivery services could also lead to changes in regulations of the drivers or vehicles involved.

Chapter 3. Possible Impacts of Express Delivery Services on Transportation

Introduction

For reasons explained below, this report does not present definitive conclusions about the consequences of express delivery services for Texas's transportation network. However, this report offers two possible and related impacts for Texas under current commercial and consumer trends.

Assumptions and Caveats

While this report suggests possible near-term impacts of express delivery services, those impacts are offered with this honest assessment—the environment for businesses, consumers, and legislators in this space can be expected to continue to change rapidly. Just as these changes are roiling the fortunes of different retailers and changing the buying patterns of consumers, the rapid changes pose challenges for transportation planners and policy makers to keep abreast of the shifting behaviors and outcomes.

Business models and logistics patterns should be expected to continue to experience change, as detailed in the first chapter. Increases in overall e-commerce business, both as a percentage of total retail sales and as a part of corporate retail strategy, are driving some long-established brands out of business and shifting brick-and-mortar stores into showrooms for online inventory and distribution nodes for online purchases. Businesses are responding to pressures for faster delivery cycles by moving distribution centers closer to urban areas instead of maintaining regional hubs that truck goods to stores in multiple states. Worldwide adoption of e-commerce in the grocery industry (fresh food, packaged food, packaged goods) outpaces the U.S. market, but changes are coming to the \$675 billion domestic grocery business. Online ordering and in-store pickup, online ordering and delivery, technology changes in package tracking, and remote payment may all affect store design and location, supply chains, and consumer behavior.

Business patterns are both influencing and responding to shifts in the behavior of consumers (who can also be taxpayers, voters, and drivers). Consumers expect faster, lower-cost shipping options. Market penetration of mobile devices and online payment systems (that do not require banking-based credit cards) are increasing the availability of e-commerce options to a wider demographic customer base and geography. Customer trust in e-commerce purchases may continue to expand the reach of e-commerce as a percent of total retail sales. Consumer preferences in purchasing (online), travel (shared rides), and housing (denser and mixed) may change the frequency and concentration of express deliveries in mixed-use developments, which could pose challenges for developers to reserve space for residential freight at the street level and parcel storage in multistory residential buildings.

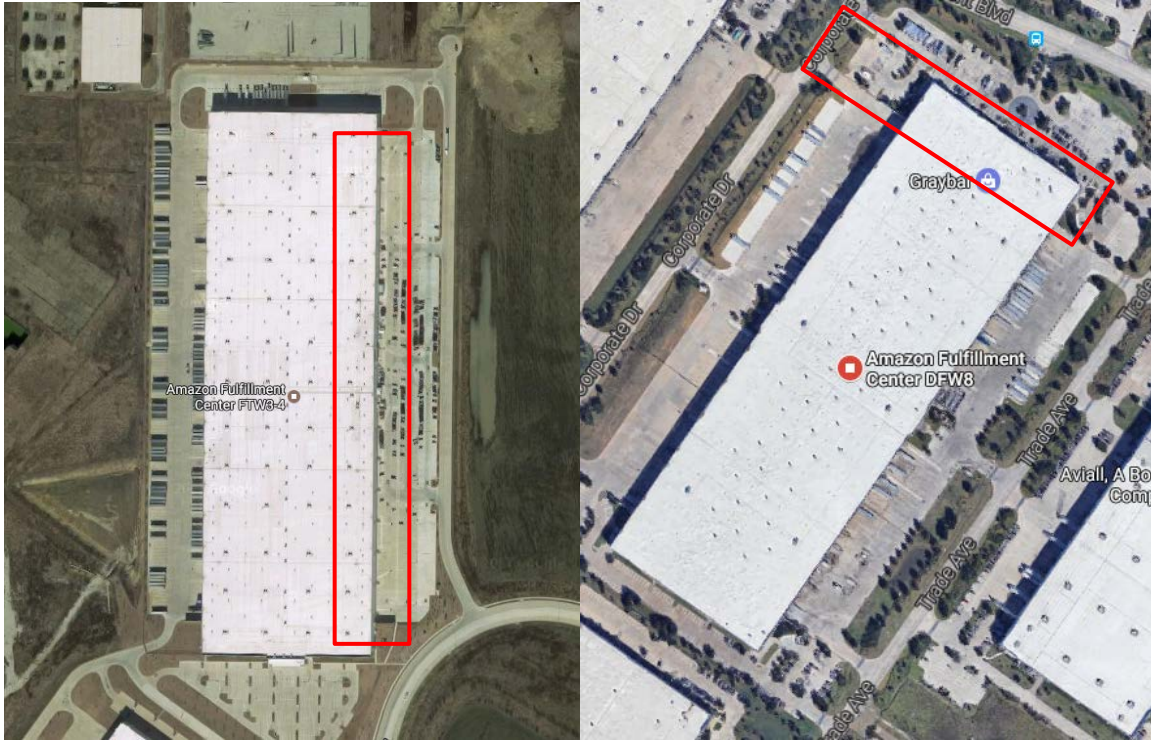
The impacts offered in this chapter also build on an assumption that state and local regulation of e-commerce and express delivery services will remain static. TNCs and shared-economy lodging (online rental options for short-term housing) have grown faster than local and state regulatory responses and the complaints of incumbent businesses. Similarly, local and state regulation of express delivery services, in terms of independent contractor use of personal vehicles and extension of express deliveries into grocery and restaurants, can be expected to remain static for the near term.

First Impact: Changes in Urban Logistics

The first impact area is associated with the new forms of distribution and goods movement in urban areas that are driven by increasing e-commerce activity. These trends are identified in Chapter 1 of this report, and this section describes how these changes affect transportation patterns and then how those changes will affect transportation planning.

Description

- Increases in e-commerce expand the footprint of warehousing (more million-plus square foot structures) and their urban proximity. This not only includes retailers like Amazon and Walmart but also package delivery companies like UPS and FedEx, who are also offering same-day and express delivery services.
- These larger, truck-served warehouses are located inside the city limits or jurisdictions of municipalities (rather than exurban, unincorporated areas) and often require access to interstate highways for freight deliveries and deliveries into urban areas.
- Many of these e-commerce fulfillment centers, even with extensive automation, involve higher concentrations of employees than do other types of warehousing. Figure 7 shows a comparison of a larger, more recent fulfillment center in northern Fort Worth on the left with a fulfillment center in Irving on the right. The Fort Worth center has more employee parking (to the right of the building) than truck parking (on the left), while the Irving center is more traditionally oriented with more truck parking than employee parking.
- These warehouses may be built and owned by developers and leased by e-commerce retailers or delivery firms.



(Source: Google Maps).

Figure 7. Employee Parking at Two DFW Amazon Fulfillment Centers.

Implications

- E-commerce distribution centers may have more frequent daily truck traffic than other corporate distribution centers, both inbound and outbound. Concentrations of such e-commerce centers may increase truck traffic on interstates and local roads that provide access within urban areas.
 - MPOs will need to consider freight movements (trucks and express delivery vehicles) on urban interstates affected by e-commerce distribution centers in transportation planning and resource allocations.
 - Local street networks in these warehousing areas will need to be constructed to withstand frequent truck traffic. Otherwise, growing truck traffic will increase ongoing maintenance costs on these commercial streets.
 - Land-use planning becomes even more critical to ensure that locations of centers (and related industrial uses) are acceptable to communities in spatial relation to schools, residential areas, airports, and other uses.
- E-commerce centers will attract commuting trips from larger numbers of employees working multiple shifts, often outside traditional transit service areas.
 - Regional transportation demand management strategies (shared rides, vanpools), usually targeted for office environments, may need to include these warehousing

areas by involving e-commerce warehouse operators to attract participants with similar shifts.

- Reverse commuting from warehousing employees could affect capacity on interstate highways used to access these warehousing regions.
- Municipalities considering building permits and transportation impacts for warehousing locations and related sub-development may not know what kinds of distribution activity will be housed in the permitted structures at the time of permit review. They may need to consider a range of possible traffic intensities for warehousing (including e-commerce uses) when reviewing speculative warehouse permit applications.

Second Impact: Use of Personal Vehicles in Express Deliveries

The second impact area is associated with the increased use of personal vehicles in express delivery services, similar to the business model employed by TNCs. This section includes a description of how these new distribution methods are being used, followed by a discussion of the transportation planning implications.

Description

- Express delivery services involve personal vehicles of independent contractors to make deliveries. This means that a number of non-commercial vehicles will be making trips with commercial purposes.
- Deliveries of packages, groceries, and meals may increase the number of non-peak-period trips into residential areas. The number of new trips could be affected by the following:
 - Availability of same-day deliveries may induce additional purchases and could thus increase the number of delivery trips.
 - Some same-day delivery purchases could replace goods purchased in a grocery store or department store, resulting in more trips delivering smaller groups of purchases.
 - Some express delivery trips may consolidate deliveries to multiple consumers (restaurants, groceries), which could replace trips by individual consumers to the stores, resulting in fewer net trips. This effect would vary on the shelf lives of the goods being delivered and the capabilities of the delivery vehicles (refrigerated or not).
 - Over the longer term, personal vehicle ownership may shift to greater use of shared-use vehicles and TNCs or increased transit use, which would shift residential traffic levels for work and non-work purposes. This could also affect the net effects of more express delivery service trips into residential areas.

Implications

- MPO project priorities are informed by travel demand forecasts, which predict future traffic levels from different types of trips by different classes of vehicles, based on population, employment, and land-use information. Many of these models account for commercial trips by estimating truck trips, but increasing numbers of commercial trips may be made by express delivery companies in non-commercial vehicles. That commercial traffic may not be captured in regional travel demand models, which may underestimate non-peak-period traffic into residential areas and out of fulfillment centers, and MPOs may be challenged to keep pace with new vehicle classifications being used for commercial purposes. This may lead to more MPOs using activity-based and simulation-based models that incorporate multiple destinations per trip per vehicle.
- Express delivery shipments may pose challenges for denser urban developments:
 - Delivery vehicles will require access to short-term parking or drop-off zones. Municipalities may need to review multiunit housing permitting or zoning requirements to consider freight delivery needs of residents and other mixed-use tenants. Loading zones and freight drop-off lanes will need to be enforced; otherwise, increased congestion will result from blocked lanes or vehicles hunting for drop-off parking.
 - Same-day deliveries of some goods might be made directly to consumers (groceries or food or other perishables) and may require a direct hand-off. Other express deliveries of non-perishable packaged goods may not require face-to-face delivery—these parcels may have to be dropped off in entry/common areas of multiunit housing when direct deliveries are not feasible (gated or limited parking). Multiunit housing developers are being challenged to find storage space for same-day and e-commerce parcel deliveries to residents.
- State and local governments may consider licensing and regulatory issues associated with express delivery services to:
 - Decide whether more stringent requirements for insurance (goods and drivers) and driver licensing should apply to commercial activity in personal vehicles.
 - Decide whether food safety rules that apply to food establishments extend to third-party express delivery services that manage the purchasing transactions and deliveries.
 - Determine whether new data collection surveys are needed for information on changing e-commerce activity and express delivery service usage for planning purposes.

Conclusion

Legislators, local governments, and transportation planners will need to keep abreast of rapidly changing trends in retail—growth in e-commerce, shorter shipping timelines, and use of express delivery services to replace shopping trips with delivery trips. Expansion of express delivery services into grocery and restaurant purchases could induce more transactions from customers who are willing to pay to avoid a shopping trip.

Transportation planners will need to monitor these commercial trips using non-commercial vehicles in regional transportation resource plans. Policy makers will want to know how many commercial delivery trips are being made by drivers and vehicles that operate outside the regulations governing other commercial motor carriers. Those regulations provide a level playing field for different firms moving goods and seek to increase the safety of such commercial freight travel. These observations of changing driving behaviors and business patterns will have to be made from the outside looking in because many of these e-commerce and express delivery businesses are private companies with closely held proprietary business plans and methods.

The interaction of these changing business patterns with the publicly owned transportation network could be monitored by the Texas Freight Advisory Committee. The 24-member committee was created by the Texas Transportation Commission under Section 1.85 (a)(4), Title 43, Texas Administrative Code to serve as a forum to discuss “transportation decisions affecting freight mobility and promote the sharing of information between the private and public sectors on freight issues.” The committee is intended to “provide the department with a broad perspective regarding freight transportation matters and assist in identifying potential freight transportation facilities that are critical to the state’s economic growth and global competitiveness.” The committee would be able to facilitate information sharing about these e-commerce and express delivery service trends among private- and public-sector freight interests and share observations with the Texas Transportation Commission and policy makers in the Texas Legislature.

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