FREIGHT

Manage Increased Freight Needs While Preserving the Street

As our city continues to grow and consumer choices continue to evolve, the demand for the movement and delivery of goods will also grow. In Hennepin County, freight tonnage is expected to increase by nearly 40% by the year 2040.[60] Additionally, the growth of e-commerce (purchases made online and delivered to homes and businesses) will continue to play an important role in the growing demands of goods movement. Nationally, package volume from the United States Postal Service has more than doubled in the past decade from 3.1 billion in 2010 to 6.2 billion in 2018.[61]

Nationally, package volume from the United States Postal Service has more than doubled in the past decade from 3.1 billion in 2010 to 6.2 billion in 2018.

The increased demand for goods will also increase demands on our city streets. Technology plays a large role in how these goods are delivered; as cities and companies experiment with drones, delivery robots, delivery lockers and sophisticated algorithms to make deliveries more efficient, we will look to learn from and implement the best ideas. As the volume of freight moving through and to Minneapolis continues to grow, we need to be prepared to mitigate any negative impacts to safety, congestion and the environment.

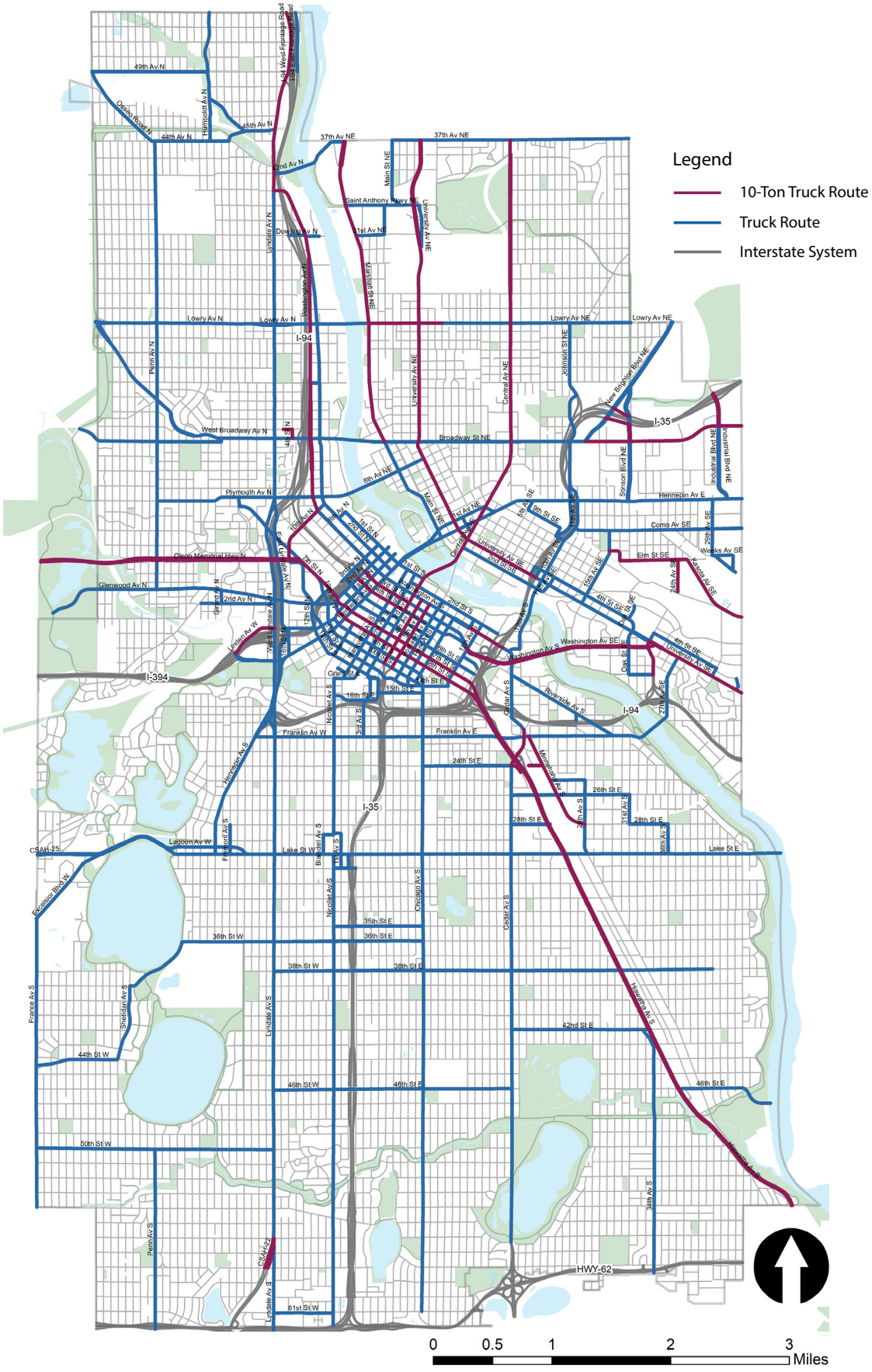
Minneapolis 2040 established a freight policy which states the City will accommodate freight movement and facilities to support the local and regional economy.

[60] Hennepin County Public Works. Hennepin County Freight Study (2016)

[61] United States Postal Service (2018). Includes Priority Mail, Priority Mail Express, First-Class Packages, Package Services, Parcel Return Service, and Parcel Select.

Figure 109: Types of freight

Figure 110: Truck route network



FREIGHT STRATEGIES

1. **Utilize land use tools to improve the efficiency of deliveries.**
2. **Improve the safety and efficiency of freight movements and integrate freight into the Complete Streets framework.**
3. **Provide freight operators with tools to better navigate the city.**
4. **Transition vehicle fleets to zero-emissions technology where technology allows.**
5. **Implement dynamic freight loading zones into citywide curbside management efforts.**
6. **Work with private sector and agency partners to guide and implement freight planning initiatives.**
7. **Regulate new delivery technologies that use the public right of way.**
8. **Develop a freight education program to educate the public and freight operators.**

SEE ALSO STRATEGY:

- **Technology Strategy 6** — Develop and incentivize electric vehicle charging stations

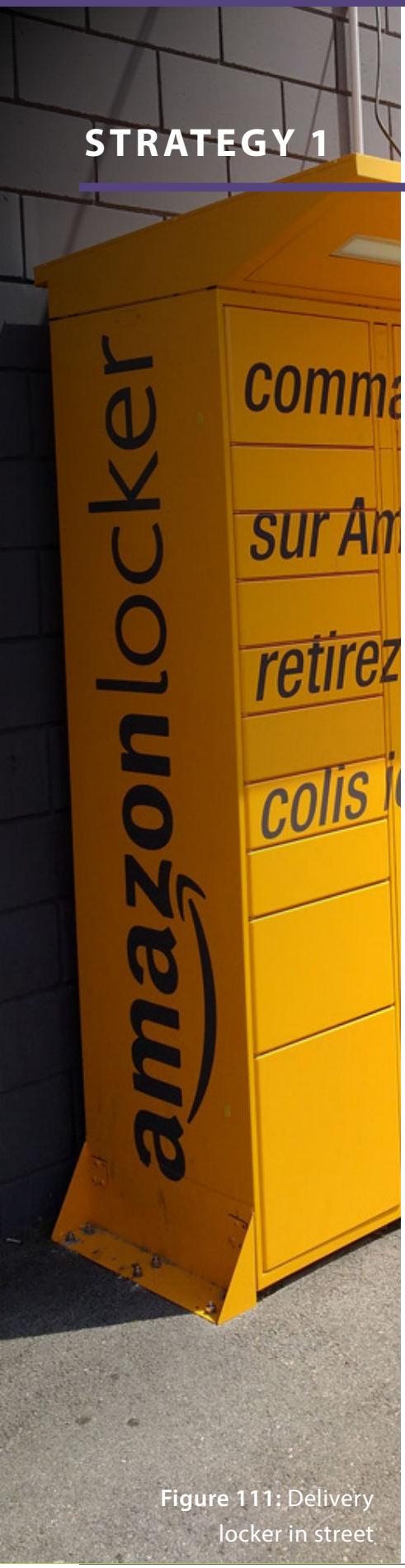


Figure 111: Delivery locker in street

STRATEGY 1

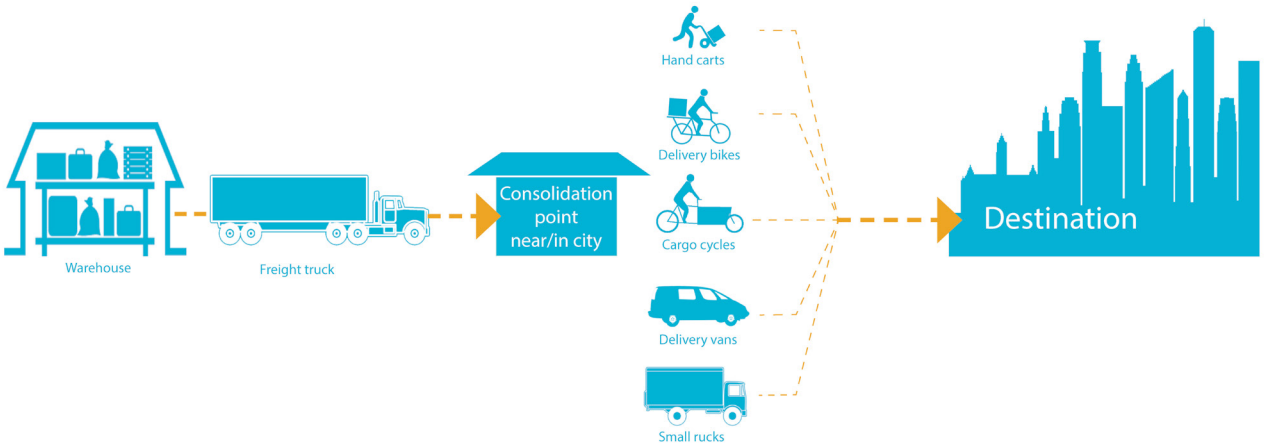
Utilize land use tools to improve the efficiency of deliveries.

Minneapolis 2040 outlined several important freight and land use actions including:

- A production and processing policy – which aims to expand and maintain areas for production, processing and distribution of products, services and ideas.
- Action items in that policy that link to transportation include:
    - Designate Production and Processing Areas that comprise large contiguous tracts of land historically used for industrial purposes, that are well-served by transportation infrastructure for both people and freight and that contain building stock suitable for production and processing businesses to expand access to higher wage job opportunities.
    - Prioritize use of land in Production and Processing Areas for production, processing and last mile distribution of products and services uses that have minimal or no air, water or noise pollution impacts and that provide quality living-wage jobs.
    - Improve transit, bicycle and pedestrian access to areas of employment, including Production and Processing Areas and Production Mixed Use Areas.
    - Develop guidance for future development in Production and Processing Areas and Production Mixed Use Areas served by regional transit lines in order to ensure a minimum level of development and job intensities.

The following actions further define land use tools that can be utilized to improve the efficiency of deliveries - through smaller loading zones, consolidating freight deliveries, minimizing time needed at the curb, better securing residential deliveries and linking delivery options with other transportation efforts like mobility hubs.

Figure 112: Mini-consolidation center idea



ACTIONS

Actions to utilize land use tools to improve the efficiency of deliveries.

Actions	Supports	Difficulty
DO ACTION 1.1 *2020-2023 (YEARS 0-3)* Work with the Department of Community Planning and Economic Development to revise the Zoning Code to improve the efficiencies of onsite deliveries by updating onsite loading requirements for new developments.	Prosperity, Mobility	Low
DO ACTION 1.2 *2024-2027 (YEARS 4-7)* Work with developers and property owners to develop small urban consolidation centers to break down loads and minimize the use of large vehicles for last mile deliveries, encouraging the use of low carbon modes like electric cargo bikes for final deliveries.	Climate, Prosperity, Mobility, Active partnerships	Medium
DO ACTION 1.3 *2020-2023 (YEARS 0-3)* Pilot a shared locker system that can accommodate multiple e-commerce deliveries and is available to the public; focus on incorporating as component of mobility hub project. *See Technology Action 3.1*	Climate, Prosperity, Mobility, Active partnerships	Medium
DO ACTION 1.4 *2024-2027 (YEARS 4-7)* Use available tools and regulatory authority to coordinate delivery services for businesses in the same building or block, potentially including coordinating time of day, sharing delivery service providers and sharing use of loading dock space.	Climate, Prosperity	High

ACTIONS (continued)

Actions to utilize land use tools to improve the efficiency of deliveries.

Actions	Supports	Difficulty
DO **ACTION 1.5** *2020-2023 (YEARS 0-3)* Coordinate with the Department of Community Planning and Economic Development to mandate that private developments design buildings to accommodate increased online package deliveries.	Prosperity, Active partnerships	Low
DO **ACTION 1.6** *2024-2027 (YEARS 4-7)* Investigate the feasibility of implementing a time restricted truck free zone, potentially through revisions to ordinance 486.50, to create more restrictive requirements for large vehicle operations.	Climate, Equity, Prosperity, Mobility	High
DO **ACTION 1.7** *2020-2023 (YEARS 0-3)* Maintain and maximize the use of the existing commercial and residential alley network for deliveries, especially in commercial and business nodes.	Prosperity, Mobility	Low
DO **ACTION 1.8** *2020-2023 (YEARS 0-3)* Standardize a process to identify and mitigate loading and circulation impacts to nearby properties if an alley must be vacated.	Prosperity, Mobility	Low

Figure 114: Truck unloading

STRATEGY 2

Improve the safety and efficiency of freight movements and integrate freight into the Complete Streets framework.

The City's Vision Zero Crash Study and subsequent analysis reviewed crashes that involved trucks between 2007 and September 2019. Data indicates that large trucks were involved in approximately 3.5% of severe and fatal crashes.[62] This strategy focuses on how we can more thoughtfully incorporate safety considerations into the systems that deliver goods throughout the city – through the planning and design of streets and better data collection. Through better data collection we can understand where and how often trucks of different sizes are using the system, so we can better accommodate and design appropriately along those streets as well as streets where there is not as much truck traffic. Understanding curbside space needs for loading and unloading goods and ensuring truck-related crashes on our system are well documented is an important action in pursuit of safe freight movements.

Several actions in this strategy focus on freight safety related concerns we heard through engagement for the TAP, specifically around carrying hazardous goods through the city. Currently, there are more than a dozen freight rail corridors that travel through the city. To date, there have been no crashes related to these corridors that have involved a car; data for crashes involving pedestrians or bicyclists is not available.

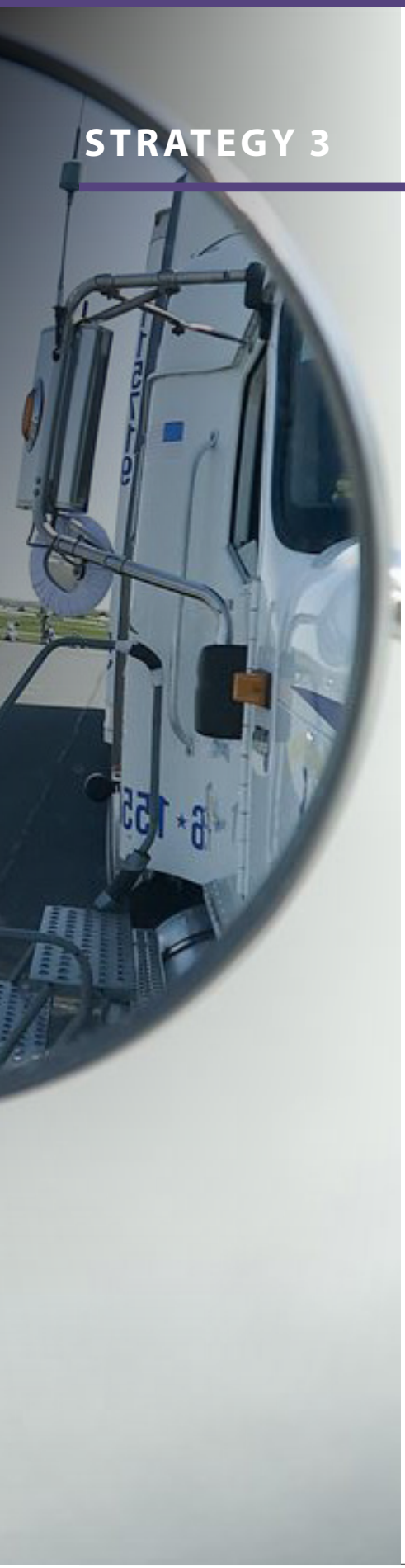
Figure 113: Truck unloading at curb

[62] Minneapolis Public Works.

ACTIONS

Actions to improve the safety and efficiency of freight movements and integrate freight into the Complete Streets framework.

	Actions	Supports	Difficulty
DO	**ACTION 2.1** *2020-2023 (YEARS 0-3)* Add a section to the City's Complete Streets Checklist regarding truck volumes and on-street loading data to evaluate and incorporate freight needs into street design process, without jeopardizing the safety and comfort of people walking, biking and taking transit. *See Street Operations Action 1.1*	Safety	Medium
DO	**ACTION 2.2** *2020-2023 (YEARS 0-3); ON-GOING* In instances when the Truck Route Network overlaps with the All Ages and Abilities Network, the Street Design Guidance should focus on providing physical separation of the bikeway. *See Bicycling Action 1.2 and Design Strategy 1*	Safety, Mobility	Low
DO	**ACTION 2.3** *2024-2027 (YEARS 4-7)* Incorporate a data traffic count collection effort to gain insight into the volume of vehicle and non-vehicle freight activity occurring within the city; include commercial vehicles and classification by type.	Safety, Mobility	Medium
DO	**ACTION 2.4** *2024-2027 (YEARS 4-7)* Advocate for revisions to Municipal State Aid rules (Sections 9936, 9941, 9946, 9951 in Chapter 8820) to allow greater flexibility for State Aid Cities to use smaller design vehicles in the designs of streets on the State Aid system. *See Design Action 6.2*	Safety	Medium
DO	**ACTION 2.5** *2024-2027 (YEARS 4-7)* Collaborate with the Minnesota Department of Transportation Rail Safety and Coordination Office to review freight rail risk factors data and crash data for all modes to identify rail grade crossing locations to improve.	Safety, Active partnerships	Medium



STRATEGY 3

Provide freight operators with tools to better navigate the city.

A key part of this strategy is to update the 2002 Truck Route Network (Figure 110). The purpose of this network is to designate routes for trucks to travel based upon their trip purpose (across town or across the country) and serve as an input in future roadway redesigns. The network will be an overlay in the Street Design Guide so that designers are directed to consider freight demands when designing future roadway projects. The Truck Route Network will be updated in coordination with Minneapolis 2040 future land uses and freight truck volume data and comparing against routes established in the current Truck Route Map. The updated network will provide guidance to where trucks should travel unless otherwise impractical (typically for the last few blocks of a delivery).

Maintaining and updating the Truck Route Network as freight volumes change over time helps planners, designers and managers of the street network keep decisions and impacts to freight a key part of street design and operation conversations.

Figure 115: Street with truck traffic

ACTIONS

Actions to provide freight operators with tools to better navigate the city.

Actions	Supports	Difficulty
DO **ACTION 3.1** *2020-2023 (YEARS 0-3)* Adopt an update to the 2002 Truck Route Network; reduce the proportion of the network within areas of concentrated poverty with majority people of color to reduce disproportionate impacts in these neighborhoods.	Climate, Safety, Equity, Prosperity, Mobility	Medium
DO **ACTION 3.2** *2020-2023 (YEARS 0-3)* Provide the Truck Route Network on the City's website; publish it through an API. *See Technology Action 4.5*	Prosperity, Mobility	Low
DO **ACTION 3.3** *2020-2023 (YEARS 0-3)* Revise the Trucks and Truck Routes ordinance to align with the planning goals of this action plan.	Climate, Safety, Equity, Prosperity, Mobility	Low
DO **ACTION 3.4** *2024-2027 (YEARS 4-7)* Communicate live construction detour information affecting truck routes through the City's website, an API and other communications outlets. *See Technology Action 4.5*	Prosperity, Mobility	Low
SUPPORT **ACTION 3.5** *2024-2027 (YEARS 4-7)* Support regional and statewide agencies in their freight planning efforts to install intelligent transportation systems (ITS) and other wayfinding or real-time signage information.	Mobility, Active partnerships	Low

An API stands for application programming interface; APIs are an interface that allows apps to take functionality and data from other apps.

Figure 117: Low emission zone

STRATEGY 4

Transition vehicle fleets to zero-emissions technology where technology allows.

Transportation emissions account for 24% of the greenhouse gas emissions in the city.[63] Nationally, light-duty vehicles, which include passenger cars and light-duty trucks, account for 59% of greenhouse gas emissions from the transportation sector, while medium- and heavy-duty trucks account for 23%.[64]

Working to mitigate the impact of freight-related greenhouse gas emissions, including freight delivered via small vehicles is an important part of reaching our climate goals. Evaluating and working to make bicycles, delivery trikes and other small electric vehicles more attractive for deliveries is part of the work to lower greenhouse gas emissions coming from freight.

The current idling policy under Title 3 of the Minneapolis Code of Ordinances, Air Pollution and Environmental Protection, sets limits for idling in loading and unloading zones, exceptions to those limits, and associated penalties. Ensuring compliance with the policies we have in place is critical to minimizing air pollution and protecting air quality.

Figure 116: Cargo delivery bike

[63] City of Minneapolis Greenhouse Gas emissions data, Office of Sustainability.

[64] EPA Office of Transportation and Air Quality

ACTIONS

Actions to transition vehicle fleets to zero-emissions technology where technology allows.

Actions	Supports	Difficulty
DO **ACTION 4.1** *2024-2027 (YEARS 4-7)* Identify locations along the Truck Route Network to install electric charging stations.	Climate, Mobility	Low
DO **ACTION 4.2** *2024-2027 (YEARS 4-7)* Evaluate the establishment of a Low Emission Zone(s) which would only allow trucks that meet certain emissions standards to enter.	Climate, Equity	High
DO **ACTION 4.3** *2020-2023 (YEARS 0-3)* Evaluate the City's idling policy for commercial vehicles (ordinance 58.30) to reduce the current idling duration.	Climate, Equity	Medium
SUPPORT **ACTION 4.4** *2024-2027 (YEARS 4-7)* Facilitate and expand bicycle, courier and small truck deliveries.	Climate, Prosperity	Low

SEE ALSO STRATEGY:

- **Technology Strategy 6** — Develop and incentivize electric vehicle charging stations

Figure 120: Alley in commercial area for freight delivery

STRATEGY 5

Implement dynamic freight loading zones into citywide curbside management efforts.

The loading and unloading of goods is a critical function in the city. Every business, whether it is a coffee shop, restaurant, small manufacturer or office – has deliveries. While some businesses have off-street parking lots, below ground loading docks or loading bays, many businesses rely on the curb in front or the alley behind their establishment to be able to receive goods. This demand for loading zones also applies to the personal delivery of packages from online vendors or food delivery services.

This strategy focuses on laying out a path to better understand freight-related curbside demands, experimenting with how to best accommodate them, and implementing mechanisms that better manage curbside freight demands in balance with other competing curbside demands.

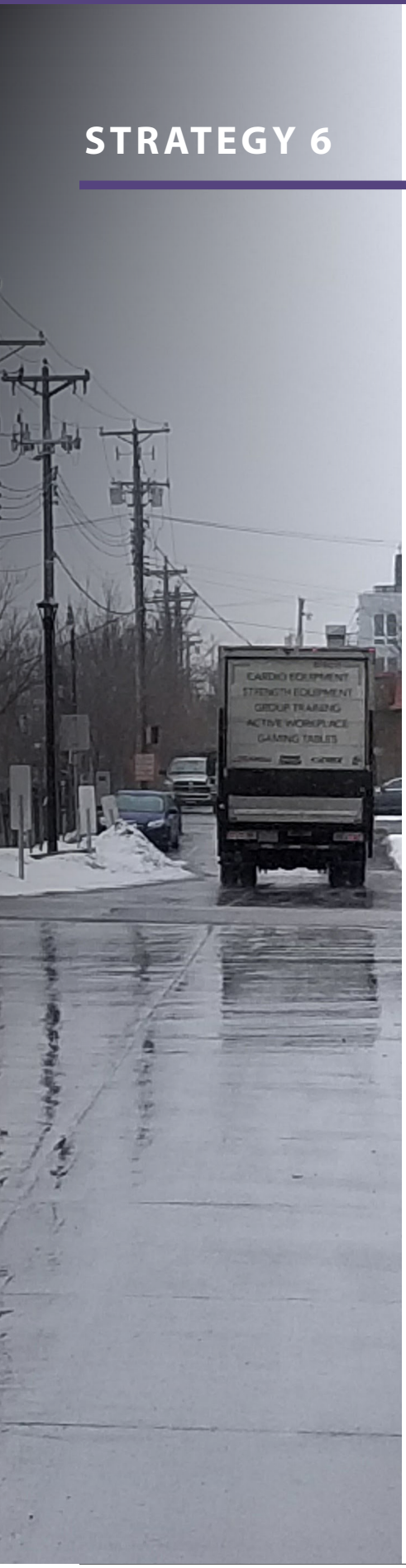
Figure 118: Truck unloading

Figure 119: Time restricted loading zone

ACTIONS

Actions to implement dynamic freight loading zones into citywide curbside management efforts.

Actions	Supports	Difficulty
DO **ACTION 5.1** *2024-2027 (YEARS 4-7)* Investigate freight loading zone demand and supply.	Prosperity	Medium
DO **ACTION 5.2** *2024-2027 (YEARS 4-7)* Identify high intensity delivery zones in the city.	Prosperity	Medium
DO **ACTION 5.3** *2024-2027 (YEARS 4-7)* Document all private loading bays and alleys within the city to assess where gaps in loading zones exist, supplementing existing curbside and private loading areas data. *See Street Operations Action 5.12*	Prosperity, Mobility, Active partnerships	Medium
DO **ACTION 5.4** *2028-2030 (YEARS 8-10)* Procure and study e-commerce delivery data to supplement field collection efforts in partnership with others.	Prosperity, Mobility, Active partnerships	High
DO **ACTION 5.5** *2020-2023 (YEARS 0-3)* Pilot multiple locations to implement dynamic curb pricing for on-street deliveries and other curbside needs. *See Street Operations Action 5.2*	Prosperity, Mobility	Medium



STRATEGY 6

Work with private sector and agency partners to guide and implement freight planning initiatives.

There are multiple partnership opportunities that will help advance the City's work in this area. Opportunities include joining already established networks to collaborate regionally on what is a regional, state and national-scoped network. Supporting academic or state-sponsored freight research projects help tie City-specific concerns with the larger regional and interstate nature of freight goods movement.

Figure 121: Nighttime delivery zone

Figure 122: Amazon Prime delivery van

ACTIONS

Actions to work with private sector and agency partners to guide and implement freight planning initiatives.

Actions	Supports	Difficulty
DO **ACTION 6.1** *2020-2023 (YEARS 0-3); ON-GOING* Participate in the Minnesota Freight Advisory Committee to collaborate with regional partners to solve freight related issues.	Active partnerships	Low
DO **ACTION 6.2** *2024-2027 (YEARS 4-7)* Partner with academic institutions, government agencies and private sector businesses to research freight urban logistics, including last mile connections and curb-to-door delivery.	Active partnerships	Medium
DO **ACTION 6.3** *2024-2027 (YEARS 4-7)* Partner with academic institutions, government agencies and private sector businesses to assess the impacts of e-commerce deliveries in neighborhoods to determine if actions are needed to mitigate impacts.	Active partnerships	Medium
DO **ACTION 6.4** *2020-2023 (YEARS 0-3); ON-GOING* Engage with independent freight owners/operators and unions to better plan for freight movement and solve potential freight related issues.	Prosperity, Active partnerships	Medium
DO **ACTION 6.5** *2020-2023 (YEARS 0-3)* Evaluate the option of coupling a pricing mechanism with off-peak loading incentives.	Prosperity, Active partnerships	Medium
DO **ACTION 6.6** *2020-2023 (YEARS 0-3)* Develop an off-hours delivery pilot to incentivize non-peak delivery times.	Prosperity, Active partnerships	Medium

STRATEGY 7

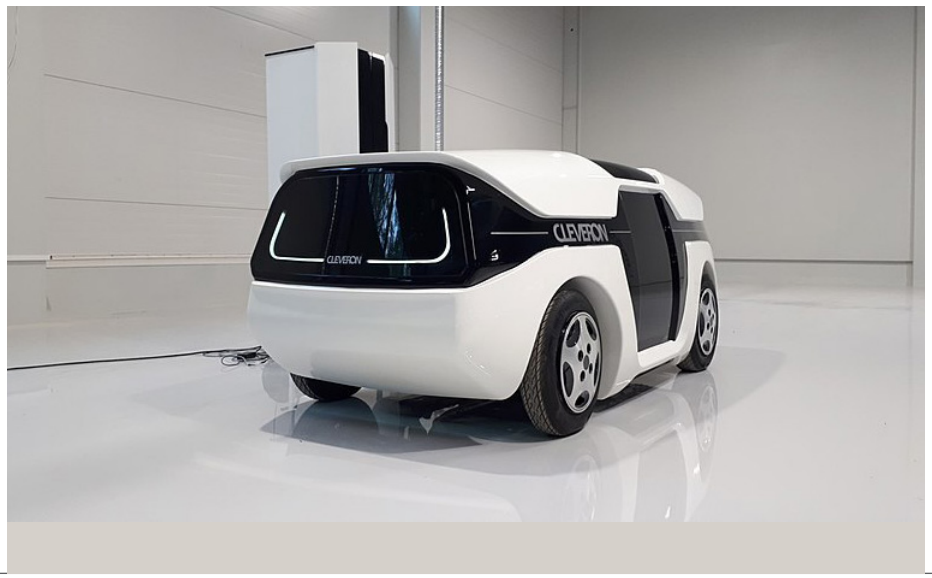
Regulate new delivery technologies that use the public right of way.

Figure 125: Delivery drone

In cities around the country we've seen delivery robots, drone delivery and other creative, more efficient ways of redefining the delivery of goods to doorsteps, lockers or businesses. With more automation, delivery trucks full of packages could be out for delivery at any hour of the day or night. Planning for these new technologies and developing agreements with providers to ensure the operators are aligned with our transportation goals is critical. Managing the curb is another important part of how changing delivery options will operate on our streets.

Figure 123: Delivery bot uses public sidewalk to deliver goods

Figure 124: Autonomous delivery locker



ACTIONS

Actions to regulate new delivery technologies that use the public right of way.

Actions	Supports	Difficulty
DO **ACTION 7.1** *2028-2030 (YEARS 8-10)* Manage autonomous delivery in the right of way (vehicles, drones, sidewalk robots and other emerging technologies) by establishing agreements with service providers to ensure that their operations align with the City of Minneapolis transportation goals. *See Technology Action 1.2, Technology Action 1.4*	Prosperity, Active partnerships	Medium
DO **ACTION 7.2** *2028-2030 (YEARS 8-10)* Expand standard data sharing requirements to all automated modes; write into regulation the creation of APIs for transmission of fleet data for delivery services. *See Technology Strategy 4*	Prosperity, Active partnerships	Medium
DO **ACTION 7.3** *2024-2027 (YEARS 4-7)* Develop City policy and standards to ensure that technology-related guidance impacting freight movement, including autonomous vehicle, drones and delivery bots, integrate into city streets and align with City goals; work with agency partners to ensure compatibility across jurisdictions.	Safety, Prosperity, Mobility, Active partnerships	Medium

SEE ALSO ACTIONS:

- **Technology Action 1.7** — Research unmanned aerial vehicles (drones) permitting and local impacts
- **Technology Action 1.8** — Proactively prepare for freight drone activity

STRATEGY 8

Develop a freight education program to educate the public and freight operators.

Education about the Truck Route Network is essential for making it useful. Having an informed driver population that understands which streets are more accommodating to larger freight vehicles will help deliveries run more smoothly, and keep drivers and others using our streets know where to expect potential truck traffic. Thinking about how to develop and communicate an education program that explains the goals, rationales and expectations of freight delivery in the city is needed to better partner with freight operators and business owners.

On the public side, ensuring residents understand truck operating norms and limitations is helpful to promote safe behavior around large vehicles. Events like 'behind the big wheel' that has occurred at Open Streets helps bicyclists and pedestrians experience the vantage point from a large truck and where harder to see spots exist.

Figure 126: Truck navigates a local street alongside a bicyclist

ACTIONS

Actions to develop a freight education program to educate the public and freight operators.

Actions	Supports	Difficulty
DO **ACTION 8.1** *2028-2030 (YEARS 8-10)* Develop an urban delivery handbook to help businesses and operators better understand the rules and regulations regarding the delivery of goods within the city.	Safety, Active partnerships	Medium
DO **ACTION 8.2** *2024-2027 (YEARS 4-7)* Collaborate with partners to educate truck drivers on City regulations, the Truck Route Network and online resources. *See Freight Action 3.1, Freight Action 3.2*	Safety, Active partnerships	Medium
DO **ACTION 8.3** *2020-2023 (YEARS 0-3); ON-GOING* Partner with others to host demonstrations at public events such as Open Streets to educate the public about safety around large vehicles.	Safety, Active partnerships	Low