Urban Freight Distribution Study:

E-Commerce Trends, Impacts, & Opportunities for Regional & Urban Planning

Transportation Committee

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Background

Why study e-commerce trends and impacts now?

Need for the study:

- Current growth trends in e-commerce activity are rapidly changing how and where consumers shop for goods
- Concerns heard on livability and sustainability issues about local impacts of urban deliveries
- Advances 2040 Transportation Policy Plan goals, objectives and regional policies

Regional Policy

Relationship to 2040 Transportation Policy Plan (TPP)

The Study's recommendations and conclusions will support stated objectives under two TPP goals:

Healthy and Equitable Communities

- Objective A: *"Reduce transportation-related vehicle emissions"* (specifically, CO_2 and other greenhouse gases)

Competitive Economy

- Objective C: *"Support the region's economic competitiveness through the efficient movement of freight."*

Regional Policy (2)

Relationship to Land Use Policies in Thrive 2040

The Study's recommendations and conclusions will support these Land Use Policies:

Orderly and Efficient Land Use

- *"Align land use, development patterns, and infrastructure to make the best use of public and private investment."*

Building in Resilience

- *"Promote sensitive land use and development patterns to achieve Minnesota's adopted greenhouse gas emissions goals at the regional scale and to develop local resiliency to the impacts of climate change."*

Study Purpose

The purpose of this Study will be to…

- Analyze national and for the Twin Cities region trends in online consumer purchases;
- Estimate the relative impact of e-commerce parcel distribution (“last-mile” deliveries) on the region’s vehicle miles traveled (VMT) and associated greenhouse gas emissions;
- Develop guidance for cities engaged in curbside management through regional policy; and
- Identify potential land use strategies to increase efficiency and reduce regional VMT

Scope of Work

The Study will have three main areas of focus:

- Part I: E-commerce trends and sustainability impacts
- Part II: Trends in siting of warehouse/ distribution centers & implications for planning
- Part III: Curbside management & new technologies for last-mile deliveries

Scope of Work (2)

PART I: E-Commerce Trends and Sustainability Impacts

Key Research Questions:

1. What has been the trend in e-commerce sales pre-Covid and what can be assumed for short- and long-term conditions in the pandemic era?

2. To what degree does increasing e-commerce activity, and its related changes in personal shopping trip behavior, increase or decrease vehicle miles travelled (VMT) & associated greenhouse gases (GHGs)?

Scope of Work (3)

PART II: Trends in Siting of Warehouse/Distribution Centers & Implications for Planning

Key Research Questions:

With respect to minimizing VMT and maximizing delivery system efficiency:

1. What are the recent trends in e-commerce fulfillment center development and logistics management?
2. What are various regional-scale, land use or other strategies for siting major freight distribution centers that could minimize VMT & associated GHG emissions? What are practical and sustainable strategies for locating parcel freight microhubs?
3. What are the pros and cons of siting fulfillment centers & freight microhubs in urban centers versus suburban or exurban communities?

Scope of Work (4)

PART III: Curbside Management & New Technologies for Last-Mile Deliveries

Key Research Questions:

1. What are best practices for managing curb space for urban deliveries?
2. What new or emerging technologies hold the most promise for reducing VMT and overall emissions of greenhouse gases?; Specifically, what are the potential benefits of promoting these or other emerging technologies for “last-mile” parcel deliveries?:
    - Air-based drones
    - Land-based drones (i.e., robots)
    - Cargo e-bikes
    - Automated (driverless) vehicles
3. To what extent do the benefits of these technologies vary in urban centers versus suburban or exurban communities?

First Federal Aviation Administration Certification announced for commercial package delivery using drones April 25, 2019

Study Advisory Group

E-Commerce Study Technical Advisory Committee

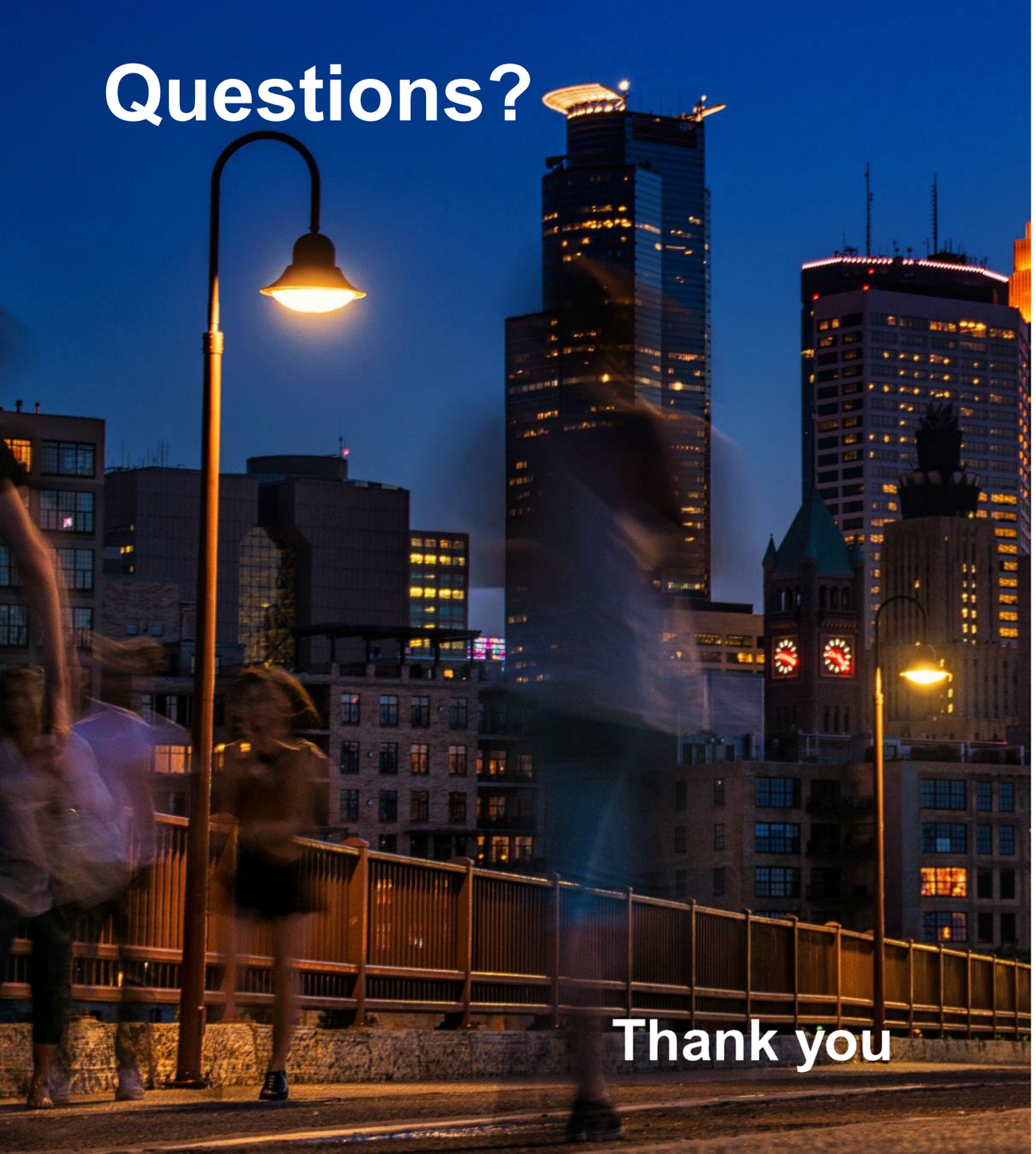
Will be comprised of private sector and planning agency representatives from

- Minnesota Freight Advisory Committee (MFAC) members
- Metropolitan Council
- MnDOT
- Metro area counties having strong ties to e-commerce facilities
- Selected area cities

Next Steps

Tentative Timeline

• Project Start Date	February 2023
• Convene E-Commerce Tech. Advisory Committee	March 2023
• Curbside management/last-mile technologies policy recommendations for 2050 TPP	May 2023
• Land use-related policy recommendations for 2050 Regional Development Guide	June 2023
• Study Completion	October 2023



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