



Pennsylvania  
Transportation Advisory Committee

# E-COMMERCE STUDY

FEBRUARY 26, 2025 | TOM PHELAN



Pennsylvania  
Department of Transportation

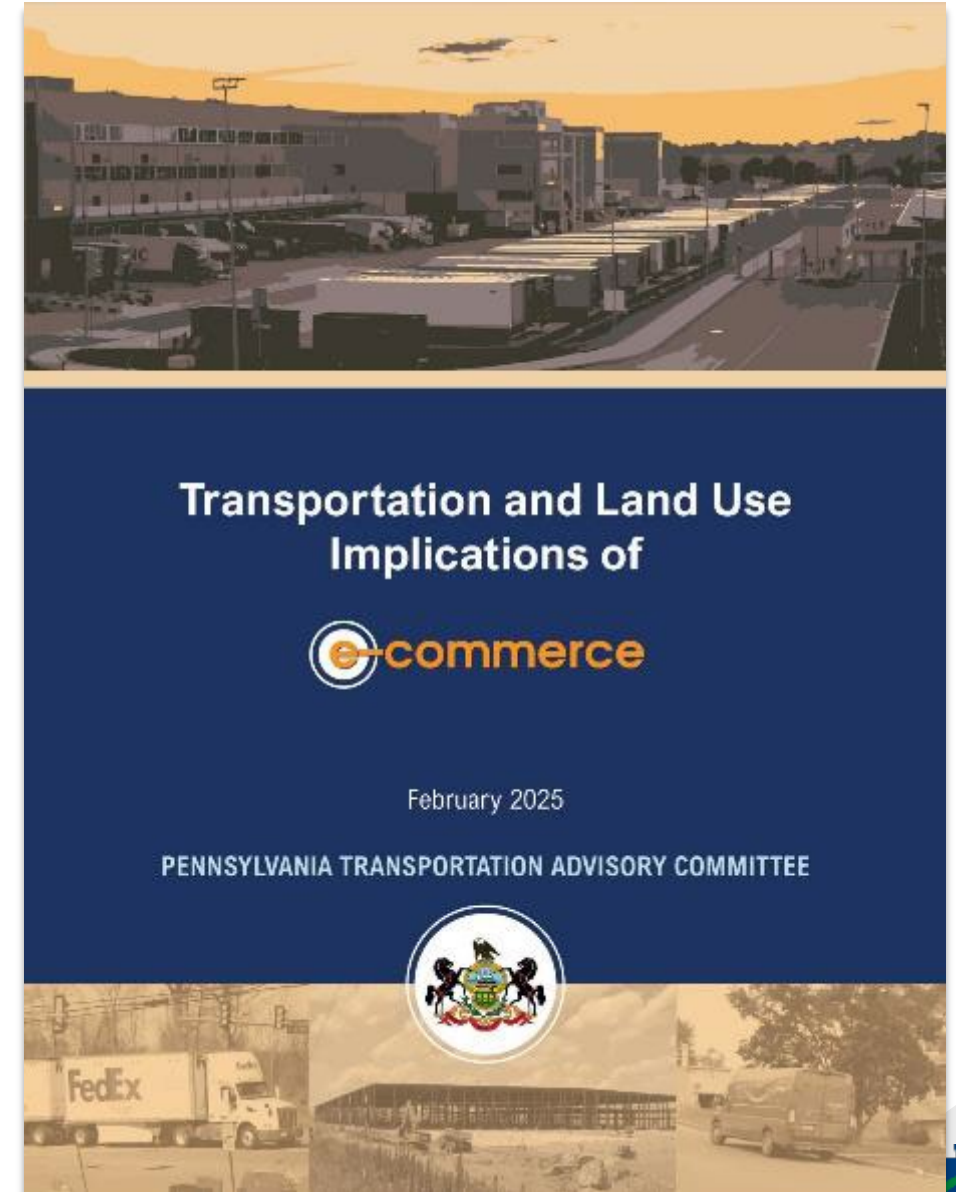
# OBJECTIVES

- Identify land use changes related to **growth of e-commerce.**
- Evaluate **economic impact** of these changes.
- Identify impacts on PA's **transportation network.**
- Evaluate **transportation funding** implications (e.g., package delivery fee).



# REPORT COMPONENTS

- Executive Summary
- Letter from the Chair
- Study Purpose & Methodology
- MPO/RPO Survey Results
- Literature Review
- Pennsylvania E-Commerce Profile
- Package Delivery Fee Reassessment
- Land Use: Planning & Zoning
- Environmental Considerations
- Findings and Recommendations



# E-COMMERCE EXPERT PANEL

- Web-based panel session, held on August 7<sup>th</sup>.
- More than 200 registrants, 150+ participants
- Panelists:
  - **Maura Kennedy**, Amazon (E-Commerce Retailer)
  - **Kevin Hodge**, ROCK Commercial Real Estate, LLC (Industrial Real Estate)
  - **Richard Montanez**, Philadelphia Streets Department (Municipal/Urban)
  - **Sam Cressler**, PSATS/Southampton Township (Municipal/Rural)
  - **Chris Caba**, York County Planning Commission (MPO/Regional)
- Moderated by Tom Phelan of Michael Baker International



# FINDINGS



Transportation



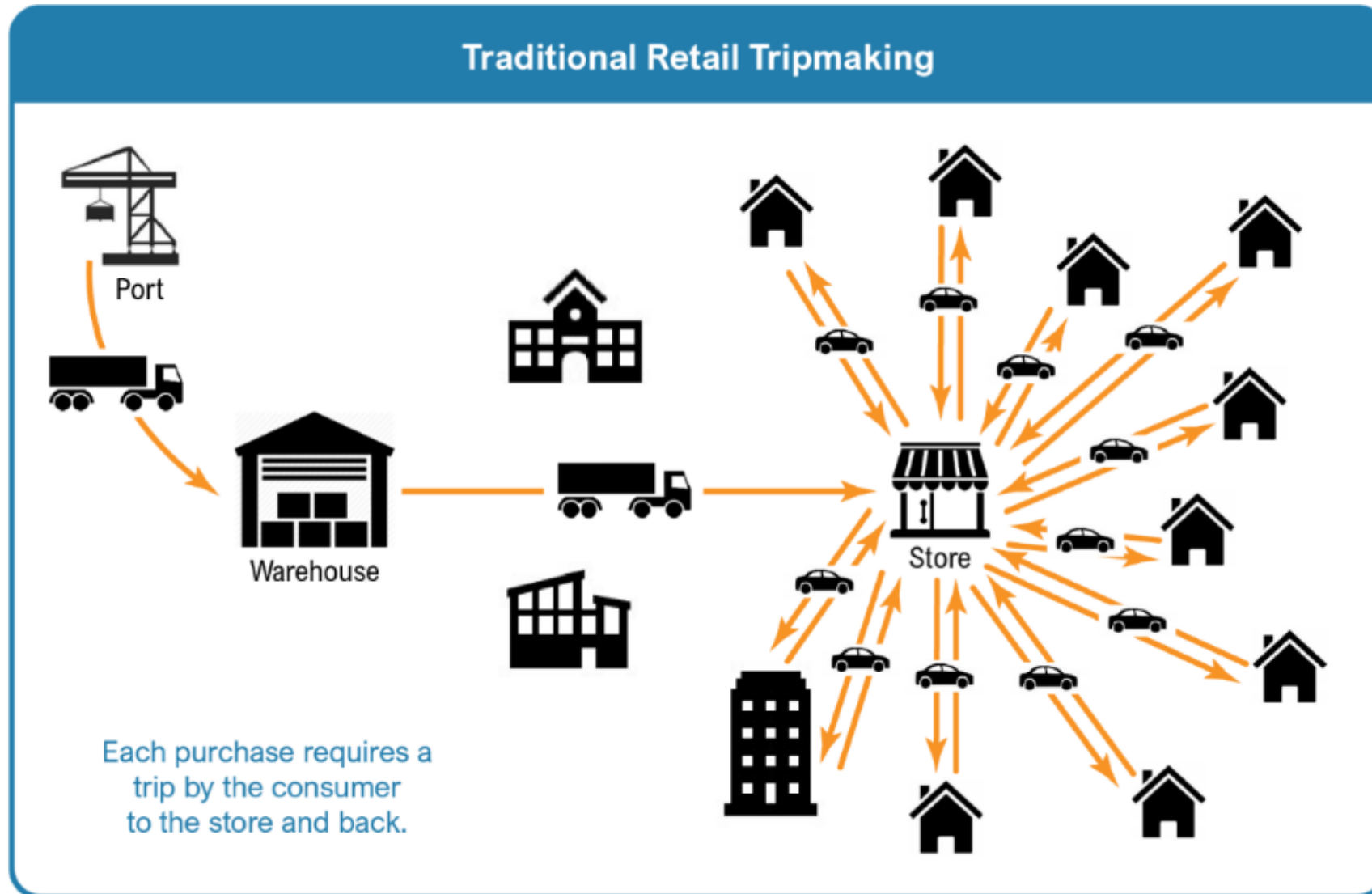
Land Use



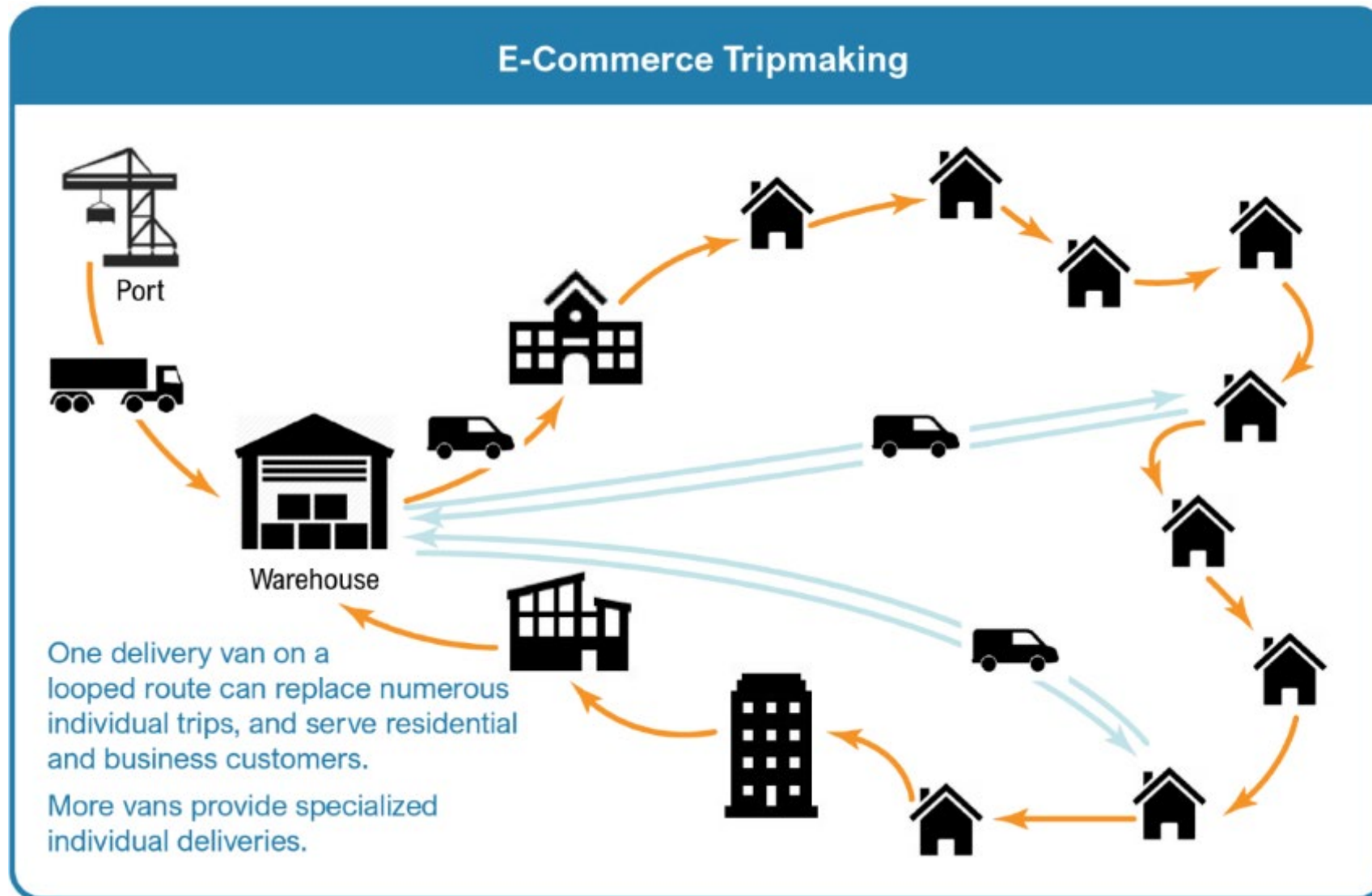
Economic Development



# TRANSPORTATION IMPLICATIONS



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# E-COMMERCE BENEFITS AND COSTS

Benefits	Costs
<ul style="list-style-type: none"><li>▶ Higher-paying jobs than traditional retail</li><li>▶ Cost-effective global reach for businesses</li><li>▶ State and local revenue through property tax and income tax</li><li>▶ Consumer convenience; delivery options</li><li>▶ Economies of scale for last-mile deliveries (fewer customer trips)</li></ul>	<ul style="list-style-type: none"><li>▶ Localized congestion</li><li>▶ Safety</li><li>▶ Local transportation infrastructure maintenance</li><li>▶ Displacement of traditional retail employment sectors</li><li>▶ Community aesthetics and quality of life</li></ul>



# FINDINGS: TRANSPORTATION



## Demand Impact

E-commerce trends, accelerated by the COVID-19 pandemic, have altered transportation demand.



## Local System

E-commerce has a disproportionate impact on the local transportation system.



## Limited Study

Few e-commerce studies have been conducted in Pennsylvania.



## Workforce Needs

E-commerce facilities often require attention to workforce access.



## Environmental Impact

Quantifying net environmental impacts and benefits of e-commerce deliveries could be a valuable, future topic of focus.



# FINDINGS: LAND USE



## Zoning Modernization

Zoning and land development approaches need to be modernized considering dynamic, new development trends, including the growth of e-commerce.



## Business Shifts

E-commerce has contributed to the decline of traditional shopping centers and the proliferation of warehouse/fulfillment center construction.



## Rapid Growth

E-commerce is outpacing current land use regulations and is driving the need for local land use planning to adapt.



## State Guidance

State government can play a productive and balanced role by providing general guidance and direction for local communities to plan for e-commerce facilities.



# FINDINGS: ECONOMIC DEVELOPMENT



## Measuring Differences

The distinctions between traditional retail commerce and e-commerce can be difficult to identify and measure.



## Technological Change

E-commerce is driving innovations in technology.



## Economic Pros & Cons

E-commerce offers employment and other economic benefits; however, could be increasing competition/displacement of small/downtown businesses.



## Broadband Needs

Lack of reliable broadband internet access and technical savvy limits participation in e-commerce by small businesses and potential consumers in many rural areas.



## RECOMMENDATIONS: **TRANSPORTATION**

- A. Policymakers should consider a **package delivery fee** to fund needed transportation infrastructure.
- B. Work with MPO/RPO regions to develop **regional freight plans** that include intermodal strategies for goods movement and e-commerce considerations at a local level.
- C. Address the **public transportation needs** for e-commerce workforce access.
- D. Develop a **needs assessment** for e-commerce related to transportation infrastructure (particularly for the local network).



# RECOMMENDATIONS: **LAND USE & LOCAL GOVERNMENT**

E. Develop and promote the use of an **e-commerce planning and development guidance handbook**.

- Develop an e-commerce model ordinance
- Incorporate delivery needs into “Complete Streets” standards

F. Municipalities should **amend zoning regulations**, including incorporating loading zones into any new developments.



## RECOMMENDATIONS: PUBLIC-PRIVATE COLLABORATION

- G. Pursue ongoing **relationships with e-commerce providers**, including engagement in appropriate forums.
- H. Incorporate e-commerce as part of the statewide emphasis on **truck parking** accommodation and staging areas.
- I. Work with e-commerce retailers and industrial developers to identify opportunities for new e-commerce development in town centers to **support existing and new business establishments**.
- J. Explore locating e-commerce fulfillment centers on **airport properties** (which typically have available land and road access).



## RECOMMENDATIONS: DATA COLLECTION & ANALYSIS

- K. Implement **post-development traffic data collection** programs for industrial sites to quantify the changing characteristics of site operations and deliveries as e-commerce continues to evolve.
- L. Analyze the impact of brick-and-mortar losses on various **tax revenue streams** in relation to e-commerce tax revenue gains.
- M. Develop capabilities and tools for **economic analysis for transportation planning**.
- N. Produce a **quantitative analysis** of the various impacts and benefits of ecommerce.



# ACKNOWLEDGEMENTS

- Jody Holton, TAC Chair
- Sam Arnold, Task Force Chairman
- Enthusiastically engaged TAC and Task Force members
- Outstanding, informative Expert Panel members
- PennDOT staff
- MPO/RPO planning partners



# DISCUSSION





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