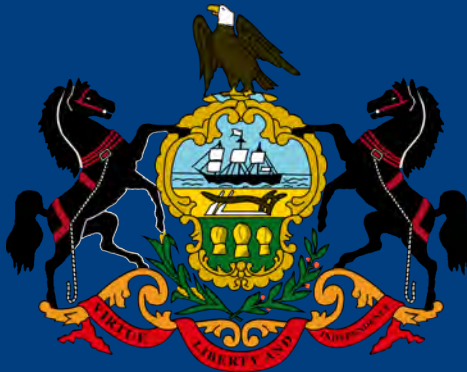


Transportation Advisory Committee

# 2024 TAC STUDY TOPIC IDENTIFICATION PROCESS

FEBRUARY 5, 2024



# TAC STUDY TOPIC SELECTION PROCESS

Online Survey  
Released  
December 6

Online Survey  
Closed  
December 20

Vetting and  
Review  
January 2024

Study  
Selection  
February 5,  
2024

- Coordinate with TAC leadership and CPDM on priorities
- Work on scope
- Results presented for discussion
- Kickoff top selected study



# STUDY TOPIC CANDIDATES

**A**

PA  
Demographic  
Trends

**B**

Opportunities  
for Deployment  
of AI-Based  
Workplace Tools

**C**

Equitable  
Transit-Oriented  
Development  
in PA

**D**

An Assessment  
of Parking:  
Impacts, Issues,  
& Implications

**E**

Transportation for  
an Aging PA



# CARRYOVER CANDIDATES

**A**

E-Commerce  
Assessment &  
Package Convenience  
Fee Analysis

**B**

Wildlife  
Crossings



# FWG CANDIDATES (BY RANKING)

4.2

Prioritization of Truck Bottleneck Improvements

3.9

Identifying a PA Core Freight Network

3.9

Freight Highway Network Gap Analysis

3.7

Truck Size and Weight Implications

3.5

Funding for Multimodal Freight Improvements

3.3

Monetary and Societal Costs of Freight Transportation

3.2

Freight Generation Rates

2.9

Air Cargo Trends, Needs, and Facilities





# SURVEY PROCESS

- Opened December 6
- Closed December 20
- Rating of candidate topics based on value on a 1-4 scale
- Results were analyzed in two ways:
  - TAC Member and Alternate Scores Only
  - Overall Ratings (including PennDOT staff scores)



## TAC Candidate Study Topics (2024)

Please indicate your assigned value for **EACH** proposed study topic, ranging from a value of 1 for low value to 4 for high value. In addition to assigning your ratings, you can provide open-ended comments, if desired. Note the first five topics were submitted by TAC members and PennDOT staff, two topics are carryover from last year's study identification process, and the remaining topics were drawn from the Pennsylvania Freight Movement Plan (as prioritized by the state's Freight Work Group in 2022).

This survey will take approximately 10 minutes to complete.  
**Please submit your response by Wednesday, December 20th.**

\* Required

1. Name \*

Enter your answer

# SURVEY RESULTS

## ***TAC MEMBERS/ALTERNATES ONLY***

#	Topic	Average Rating
<b>1</b> <i>(tie)</i>	E-Commerce Assessment & Package Convenience Fee Transportation for an Aging PA	3.29
<b>2</b>	Demographic Trends	3.14
<b>3</b> <i>(tie)</i>	Equitable Transit Oriented Development Funding for Intermodal/Multimodal Freight Improvements	2.79
<b>4</b>	Assessment of Parking	2.71
<b>5</b>	Air Cargo Trends, Needs, and Facilities	2.64

## ***OVERALL***

#	Topic	Average Rating
<b>1</b>	E-Commerce Assessment & Package Convenience Fee	3.07
<b>2</b>	Transportation for an Aging PA	3.00
<b>3</b>	Demographic Trends	2.93
<b>4</b>	Truck Bottlenecks	2.90
<b>5</b>	Equitable Transit Oriented Development	2.70



# TOPIC SELECTION

- Survey results vetted with TAC and PennDOT leadership:
  - Account for current and upcoming initiatives underway within PennDOT and gauge level of leadership support
- Top three candidates identified based on survey responses and feedback from the vetting process:

**1**

E-Commerce  
Assessment & Package  
Convenience Fee  
Analysis

**2**

Equitable Transit  
Oriented Development

**3**

Funding for  
Intermodal/Multimodal  
Freight Improvements





# DRAFT STUDY OBJECTIVES

- Identify land use changes in Pennsylvania related to the growth of e-commerce and transformation of retail establishments resulting from changes in landscape.
- Evaluate the economic impact of these changes in terms of employment, real estate valuations, etc.
- Identify impacts on the transportation network and implications for future infrastructure needs.
- Evaluate funding implications related to e-commerce



# QUESTIONS / DISCUSSION





## ***E-Commerce Study Scope of Work***

as of February 1, 2024

### **Study Outcome**

This proposed study scope of work is aimed at achieving four specific outcomes as they relate to transportation:

- Identify land use changes in Pennsylvania related to growth of e-commerce and transformation of retail establishments resulting from changes in landscape.
- Evaluate the economic impact of these changes in terms of employment, real estate valuations, and other metrics.
- Identify how these trends impact the Commonwealth's transportation network and their implications for future infrastructure needs.
- Evaluate the transportation funding implications related to e-commerce, such as package delivery fees and the Goods Delivery Fee proposed previously in the Pennsylvania Transportation Revenue & Options Commission (TROC) final report.

### **Scope of Work**

The scope of work is organized to address the project as proposed in the TAC Study Topics Request Form (attached). The Request Form by reference becomes a part of this study scope and schedule as a point of reference for use throughout the project duration (e.g., issue identification). The scope of work does not replicate the Request Form detail, but describes **how** the proposed study will be executed.

Stakeholder and leadership input are integrated throughout the process. The project duration will be approximately six months from notice to proceed. Task Force meetings will be held on a regular basis throughout, typically addressing key milestone products and activities. The Task Force may include non-TAC members that bring important perspectives and subject matter expertise to the analysis and feasibility of the ultimate recommendations.

#### **Task 1: Task Force Meeting – Kickoff and Problem Definition (February 2024)**

The project team will prepare for and facilitate an issues-oriented kickoff meeting with the Task Force. Task Force membership will be established as part of the initial startup preceding the meeting and will include a mix of TAC members and other stakeholders. The project team will introduce the study topic and provide initial background on national trends regarding the topic. The study scope of work will be reviewed, and Task Force members will be engaged in a facilitated discussion assisting in problem definition and other insights for the ensuing work. Potential Task Force members outside the TAC could include the Department of Community and Economic Development (DCED), the Bureau of Fiscal Management (BFM), an MPO representative, the PA Chamber of Business and Industry, a Pennsylvania



chapter of the National Association of Industrial and Office Properties (NAIOP), and e-commerce shippers/carriers such as Amazon, FedEx, Walmart and UPS.

**Task Deliverable and Outcome:** The Task Force and project team will have a shared understanding of the project scope of work, and how the Task Force will be engaged throughout the study's duration. A meeting summary (primarily outlining strategic input received and how it will be used in carrying out the ensuing work) will be prepared and distributed to members.

### Task 2: Research & Stakeholder Engagement (February - April 2024)

This phase of the project will be comprised of three major elements: (1) a review of relevant literature on the topic of e-commerce and its transformational changes over recent decades; (2) stakeholder outreach to PennDOT, MPO/RPO and key municipal partners (including organizations such as PSATS, PSAB, etc.) to identify trends and issues in Pennsylvania; (3) industry outreach to e-commerce shippers and carriers to provide a private sector perspective on the topic; and (4) a case study on three e-commerce fulfillment centers that have been developed in the last ten years to illustrate the operational dynamics of a typical facility in comparison to traditional warehouse/DC facilities.

Parameters such as staffing levels, truck volumes (inbound vs. outbound) and truck types will be used to measure the impacts of these facilities on transportation infrastructure and local communities, and to estimate changing transportation patterns for e-commerce as delivery vans replace personal trips to retail sites for many consumer goods over time.

An important aspect of this task will be the work that had been done previously for the Pennsylvania Transportation Revenue & Options Commission (TROC), particularly as it relates to the Goods Delivery Fee recommendation presented in the Commission's final report.

A minor survey will be conducted of the MPOs and RPOs in Pennsylvania. This survey will involve 4-5 questions about impacts and opportunities they have seen in their respective regions related to e-commerce. The expectation here is that the input from these surveys will be primarily anecdotal, but if there are specific cases where e-commerce activity or recent industrial development has involved a detailed analysis of individual project sites, the information from these locations will be included. Of particular interest in this outreach effort (if applicable) would be a community analysis at a regional level that identifies implications on changing retail activity for a neighborhood, town or village due to the growth of e-commerce and repositioning of traditional shopping malls or other retail centers over time due to competitive pressure from online retailers.

A special emphasis will be made on new and innovative e-commerce delivery platforms such as Uber Freight, Amazon Pickup Hubs, and local delivery/drop-off locations. The implications of large-scale industrial development projects outside urban centers will also be examined in the context of public transit needs and accessibility for transit-dependent work forces.

One of the most important implications for public agencies in meeting the challenges of e-commerce growth has been the dynamic changes in the warehousing and distribution processes related to this new merchandise delivery model. The Institute of Transportation Engineers (ITE), in collaboration with NAIOP and the South Coast Air Quality Management District of California, completed a research effort in 2016 to identify changes in warehousing and distribution facilities and recommend further steps to separate high-cube warehousing land uses for trip generation estimates into additional industrial uses such as fulfillment centers and parcel hubs.



The consultant team will conduct a second case study for this TAC effort that identifies characteristics that distinguish new e-commerce facilities from traditional distribution centers and have important implications for employment, transportation infrastructure impacts, and economic activity. A select set of six industrial facilities – comprising two each in Pennsylvania’s major centers of warehousing and freight transportation activity (e.g., Philadelphia, Pittsburgh and either the Harrisburg-York-Carlisle region or the Lehigh Valley) – will be analyzed. Each pair will include one of the following facility types: a traditional distribution center for a major retail chain or product line (e.g., Walmart, Giant, Nestle, Crayola), and an e-commerce fulfillment center (Amazon or Walmart E-commerce). A parcel hub (FedEx or UPS) may be added for each region if comparable information about these sites can be obtained through similar methods.

The data collection effort for each of these six sites will include physical parameters such as parcel and/or building size, operational metrics such as on-site employees (through direct research or surrogate data such as employee parking lot size) and loading dock doors, and sample vehicle counts by class and type (auto vs. truck, with truck broken down by standard tractor-trailers, domestic and international intermodal containers, single-unit trucks, and delivery vans). To the extent possible, the information would be gathered directly from the facility owner/operator, and supplemented by field observations as needed.

**Task Outcome or Deliverables:** The research and outreach of Task 2 will be summarized in Technical Memorandum #1. This document will include highlights of trends shaping the Pennsylvania landscape resulting from the growth of e-commerce, challenges and opportunities in Pennsylvania related to e-commerce, and forward-looking implications for Pennsylvania in terms of changing land use patterns, transportation infrastructure needs, and economic development. The case study will be documented in Technical Memorandum #2, including graphical exhibits and tabular comparisons of traditional warehousing/distribution centers and e-commerce fulfillment centers. Metrics such as inbound and outbound vehicle trips by vehicle type and size will be quantified for each of the six facilities in the three study regions.

### Task 3: Moderated Panel Session (May 2024)

The project team will organize, prepare for and moderate a panel session after the completion of the prior Task 2 subtasks. Up to five panelists will be invited to and confirmed for this event from key stakeholders in the e-commerce industry and the public sector. Some of the Task Force members identified in Task 1 would be well positioned to provide expert insight into the issues and opportunities related to e-commerce. A potential panel could include representatives of Amazon, FedEx, NAIOP and DCED, an academic expert in the area of supply chain management, and a business media outlet that covers e-commerce as a subject matter in its business news reporting. The panel would be conducted as a virtual/online event to minimize travel requirements and cast as wide a net as possible for participation from TAC members across the Commonwealth. Information and insights gathered from this panel could include the following:

- Historical patterns in e-commerce and forecasts for the future
- Exploring different types of e-commerce: Business-to-Business (B2B), Business-to-Consumer (B2C), Consumer-to-Consumer (C2C) and Consumer-to-Business (C2B)
- Challenges related to operations, business climate, and regulations
- Supply chain complexities for suppliers and customers





- Costs and mitigation measures related to door-to-door deliveries for homes and businesses
- The impacts of merchandise returns on the e-commerce sector
- Changing facility needs (automation, building size, loading dock configurations, etc.)
- Changing “last-mile” and “last-yard” delivery vehicle and hardware needs
- Implications of artificial intelligence (AI) advances
- Sustainability practices for e-commerce retailers, suppliers and customers
- Growing (and declining) product types for e-commerce
- Intersection of e-commerce changes with public policy.

**Task Outcome or Deliverable:** A summary of the panel discussion will be prepared and distributed to members. The report will include highlights of the event, key themes related to e-commerce, and a refinement of any previous findings from Task 2 based on the input from the panel experts.

### Task 4: Address Issues and Opportunities Identified / Task Force Meeting #2 (April-May 2024)

Drawing from the results of the Task 2 research effort and the Task 3 subject matter panel, the project team will develop a briefing of issues and opportunities related to the growth of e-commerce and the resulting changes in transportation and land use across Pennsylvania. These issues and opportunities will be organized into four general topic areas, including:

- Land use
- Transportation policy, infrastructure and operations
- Economic development
- Funding/revenue implications

Task Force Meeting #2 will be held to evaluate the findings and identify a prioritized list of recommended actions for PennDOT, its planning partners, or other public/private stakeholders to pursue to advance the public interest to address needs, issues and opportunities related to the growth of e-commerce in Pennsylvania.

**Task Outcome or Deliverable:** A summary of issues and opportunities will be prepared for Task Force input at Meeting #2. The outcome of Task Force Meeting #2 will be a prioritized set of preliminary Task Force recommendations for further actions in the areas of land use policy/planning, transportation infrastructure planning and design (including public transit needs), economic development considerations and opportunities, and funding/revenue-generating opportunities.

### Task 5: Draft Report / Task Force Meeting #3 (May-June 2024)

Based on the outcome of the Task 4 issues/opportunities identification process and Task Force Meeting #2, the consultant team will organize the information collected and stakeholder input to develop a draft final report. The draft report will be provided to the Task Force for advance review. Graphics and visualizations will be integral elements of the study report. The team will facilitate a Task Force meeting to discuss the report findings and recommendations. The Task Force input will be documented for reference in finalizing the study.

**Task Outcome or Deliverable:** Task Force consensus on report findings and recommendations and any Task Force items to be addressed for the finalization of the report.





### Task 6: Report Review and Finalization (June 2024)

From the outcomes of the Task Force meeting, the consulting team will address all comments and direction received and finalize a draft final study report. This Task will also entail any final vetting that may be needed by PennDOT leadership and/or other e-commerce stakeholders.

**Task Outcome or Deliverable:** A draft final report that encompasses the final input from the Task Force. Copies will be provided to the Program Center for distribution to the full TAC.

### Task 7: TAC and STC Presentations (July 2024)

A study presentation will be prepared and delivered to the TAC for a recommendation for approval. A final presentation will be prepared and delivered to the STC for consideration of approval of the final report. The consulting team will provide project briefings to both groups throughout the duration of the study process as part of their regularly scheduled meetings.

**Task Outcome or Deliverable:** TAC endorsement and STC approval of the final report. A final PDF will be provided to the Program Center for posting on the STC's website.

### Task 8: Project Communications (February-July 2024)

As an ongoing task, we will assist the TAC and PennDOT Press Office in raising awareness of the TAC study, particularly at the project's conclusion. This would entail content that TAC members could use in raising awareness among their constituent groups and could include press releases, social media artwork, and FAQ pages. Content would define what the TAC is, why it chose to select the topic of e-commerce for evaluation, and the study's objectives and findings. Content would eventually be used in developing the TAC annual report for further awareness raising.

**Task Outcome or Deliverable:** Press releases and artwork for use on social media channels for raising awareness of the TAC study, its process, and outcomes.

### Schedule

The proposed project timeline is based on anticipated TAC and STC approvals in July 2024. Milestone dates may vary based on schedule constraints tied to formal TAC meetings and stakeholder availability.

No.	Task Name	Start Date	End Date
1	Task Force Meeting – Kickoff and Problem Definition	02/24	02/24
2	Research & Stakeholder Engagement	02/24	04/24
3	Moderated Panel Session	05/24	05/24
4	Address Issues and Opportunities Identified	04/24	05/24
5	Draft Report	05/24	06/24
6	Report Review and Finalization	06/24	06/24
7	TAC and STC Presentations	07/24	07/24
8	Project Communications	02/24	08/24