Case Study Report for Future Freight Movements in Freight Alley—The Greater Chattanooga Region

Source: Tennessee DOT, Freight Movement along Freight Alley, p. 3

July 29, 2021

U.S. Department of Transportation
Federal Highway Administration

Contract DTFH6116D00052L, Task Order 0014, Modification 0005, Task 4.2
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1. Background and Overview of the Case Study

The greater Chattanooga region is in the heartland of freight movement in the Southeast and is served by several different freight modes. With three interstates (I-75, I-59, and I-24) passing through or near Chattanooga, the greater Chattanooga region was in the top 10 in the nation for freight traffic.\(^1\) According to the same study, 80 percent of freight in the greater Chattanooga region is through traffic (the highest volume of any major metro area in the U.S.). Furthermore, the greater Chattanooga region is within a few hours’ drive of the Port of Savannah, the second-largest port on the east coast and the fourth-largest port in the nation. The Port of Savannah’s Garden City Terminal is the single largest container terminal in the U.S. (exceeding 4 million TEU in 2017),\(^2\) which contributes to the heavy freight volume moving through the greater Chattanooga region.

The greater Chattanooga region is near the Memphis airport, the highest freight-tonnage airport in the nation, and also near the Louisville airport, the number three highest-tonnage airport. The Huntsville, AL, International Airport also provides cargo services to Memphis and Louisville. In 2007, 25 million tons of freight traveled through the Chattanooga urban area.\(^3\) This is expected to increase to 33 million tons by 2035. Therefore, due to the region’s strategic location, it will face significant freight highway bottlenecks, capacity problems, and parking issues in the future.

According to the Greater Chattanooga Economic Partnership (GCEP), the top two major industry clusters are automotive manufacturing and advanced manufacturing.\(^4\) The flooring industry is a vital part of advanced manufacturing, with complex components used in laminate flooring and carpeting. A primary focus of this NEP study was examining future freight issues related to the automotive and trucking industry and the flooring industry. These two industry clusters are vital to the region’s economic engine. Industry clusters exist where economic activity, in a set of related industries in the same geographic location, reaches a critical mass and local linkages begin to have a meaningful impact on the performance of companies.

Truck parking issues have been a recognized problem for several years with the continued significant growth in truck freight volumes in the region. Commercial motor vehicle traffic carries an estimated 70 percent of total freight tonnage in the U.S.\(^5\) State budget cuts, closed rest areas, changes in the hours of service that commercial motor vehicle operators can drive, electronic logging devices, and the overall shortage of truck drivers increased the pressure for states to conduct research on this critical issue.

The scarcity of truck parking in the greater Chattanooga region is a crucial issue that could be addressed in a regional context. In early 2018, the Thrive Regional Partnership, a local nonprofit organization, convened freight users, trucking industry representatives, political leaders, and transportation officials to identify and address key freight problems in the region. One key concern, as truck freight volumes continue to grow, is the need for additional truck parking. Drivers attempt to comply with the hours of service regulations of the Federal Motor Carriers Safety Administration, which limits the daily hours that they can drive a truck.

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\(^1\) Cambridge Systematics, 2011. Chattanooga Regional Freight Profile. [https://chcrpa.org/regional-freight-study/](https://chcrpa.org/regional-freight-study/)


\(^3\) Chattanooga Regional Freight Profile.


2. **Methods, Procedures and Processes**

TDOT structured the methodology and process around three areas of study: a freight flow and industry analysis, freight partner interviews, and a survey of all public and private truck parking spaces in the tri-state area. A freight flow and industry analysis was performed for the aerospace, aviation, agriculture, food production, automotive, trucking and logistics, wood products and flooring industries. This included the identification of regional advantages and analyzing the spatial structure of those industries and related functions for the regional economy of the Piedmont Atlantic Megaregion (PAM) within the context of the megaregion. Though the study primarily focused on the tri-state area, it also attempted to investigate the connection of industry clustering and interrelationships of those spatial structures as regional advantages within the PAM. Policy implications and recommendations for the state and the region were developed based on the study data. The study included the following:

- Data collection of company locations, connecting infrastructure, intermodal connectors, and freight bottlenecks.
- Development of quantitative estimates of the expected growth of freight associated with these current sectors in the study region.
- Forecasting and model development of growth of these current sectors in the study region.
- Analysis of how potential technologies such as electric vehicles will impact the automotive and trucking sectors.
- Analysis of the regional advantages and spatial structure in the PAM. This analysis examined multiple areas and their corresponding factors from a macro, meso, and micro level.

3. **Research Findings, Outcomes and Products**

Some general observations that TDOT made during the project include the following:
Through observing how the Thrive Regional Partnership conducts partner engagement, TDOT has seen the importance of each organization getting out of their respective silos to work together to develop solutions.

Since freight knows no boundaries, the NEP grant has given TDOT a good opportunity to demonstrate how to properly conduct freight planning outside of those boundaries within the megaregion.

To tackle the bigger truck parking issue, multiple states should work together to fill in the gaps where truck parking is needed.

The freight planning dynamic can be changed by engaging industry early in the planning process.

Some specific data and recommendations presented in the final report showed that most of the industries examined are predicted to grow within the Freight Alley Region in the future:

- By 2045, solely truck-borne freight tonnage is forecast to increase 44 percent in Alabama, 42 percent in Georgia, and 34 percent in Tennessee.6
- By 2045, motorized vehicles and transportation equipment is estimated to increase by 34 percent in Alabama, 59 percent in Georgia, and 38 percent in Tennessee.7
- The five industry clusters examined (aerospace and aviation, agri-production and food products, automotive, wood flooring and forest products, and trucking and logistics), employ 1.2 million people in the tri-state area.8

The Thrive Regional Partnership surveyed different categories of freight industry stakeholders. Most of the stakeholders surveyed believed that the largest issues and challenges affecting freight movement in the tristate area over the next 5 to 10 years were road and highway congestion, truck parking, and infrastructure deterioration. More detailed information from the interviews can be found in Appendix C: Thrive Freight Mobility Survey Report. The truck parking survey revealed that there is a total of 12,781 private and public truck parking spaces among 223 facilities along all interstate corridors examined in the tri-state area. The survey examined 1,700 miles of interstate and was then mapped into Truck Parking Locator Maps.

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8 Freight Movement along Freight Alley
4. Challenges

5. Immediate and Long-term Anticipated Benefits

The immediate benefits of the research resulted in a list of recommendations for advancing multi-state freight planning efforts, truck parking development, highway capacity improvements, intermodal terminal expansion, and economic development. These newly learned lessons will be implemented and encouraged in TDOT’s future planning processes in other areas of the state. For example, TDOT will replicate elements of this study when the new Statewide Freight Plan and Long-Range Transportation Plan are updated in the near future, most likely later in 2021 or 2022.

For long-term benefits, the National Economic Partnership (NEP) grant serves as starting point and an educational opportunity for those involved. The methodology developed in this project will be used as a template for future planning in the region. For example:

- Creating a New Economy Freight Technology Hub focused on best transportation technologies. Technologies that could be a part of the hub might include truck platooning, ITS and CAV, Freight

By nature, this is multidisciplinary and multi-jurisdictional... So continuous communication and finding the best out of this pilot was a challenge.

—David Lee, TDOT
Advance Traveler Information System + Truck Parking (FRATIS+P), and alternative fuel corridors with adjacent states.

- **Engaging the trucking community and collaborating** to deploy multi-state truck parking and traveler information management application.

The deliverables will also inform leadership and decision makers about the potential benefits of megaregion planning to improve the PAM’s economic competitiveness in the global market.

6. **Ease of Replicability**

The NEP grant has given TDOT a solid foundation on which to build. The methodology used to study the future of freight flows for the automotive and trucking and flooring industries can be replicated and marketed as a best practice. Other MPOs, regions, megaregions, and state DOTs can analyze their current and future industries and implications of change on future freight flows in their geographic areas. TDOT can serve as a subject matter expert and primary contact for the other areas that wish to use this portion of the study. Furthermore, the development of a truck parking locator map can be a policy tool that others can use to analyze truck parking needs along vital corridors and to provide a base dataset for future real-time application development.

TDOT will continue to promote the results of its NEP grant to other megaregions and states to assist them in their freight planning efforts. As part of this effort, TDOT can encourage other regions to leverage public-private partnerships by engaging industry, chambers of commerce, and multiple governments in the megaregion planning process. To advance these multi-state planning efforts, existing State DOT and MPO planning processes can begin by identifying industry growth areas by region. By proactively examining industry growth, these agencies can engage multiple partners and start to dissolve communication silos.

7. **Lessons Learned**

TDOT has learned the value of multi-jurisdictional partnerships and megaregion planning. They see the value of multiple jurisdictions’ engaging in the planning process, because most planning efforts do not operate in a vacuum or stay within jurisdictional boundaries. Lessons learned will be implemented and encouraged in TDOT’s planning processes in other areas of the state.

The major contributor to the success of this project was engaging with the industry (businesses and trucking community) and general public through surveys. In addition to helping the project, this engagement helps in future conversations with other states and counties in the region.

"Typically, state DOTs only worry about what's within their boundaries. And really, we have to have a holistic look about it. And that's what the whole megaregion concept did."

—Daniel Pallme, TDOT