2022 Delaware Freight Emphasis Area Summary: Supply Chains

# **D.5 Supply Chains**

## D.5.1 Detailed Supply Chain Studies

Recent global events have highlighted how sensitive our goods movement supply chains are to disruption. One area in which Delaware can continue to make progress is gaining a better understanding of how key businesses rely on the transportation system to gather their raw materials, produce goods, and ship their final products to customers. Two of the state's largest industries were previously reviewed via detailed supply chain analyses just before the 2015 release of the FAST Act, including the Delaware Agricultural Supply Chain Analysis and the Delaware Chemicals Manufacturing Supply Chain Study. Reference findings from these prior supply chain studies still provide relevant insights to help support broader planning efforts (see highlight boxes for each study on the following page).

Both of these prior studies provided a "deep-dive" into industry specific supply chain details that go beyond the broader level of planning typically available within the context of an overall statewide freight plan. Such details can include a review of potential strengths, weaknesses, opportunities, and threats (SWOT) that explore a variety of perspectives. Those perspectives may uncover critical supply chain characteristics, raw material sources and related transportation links, intermediate processes or transportation connections, supply chain sub-components and supporting industries, critical market trends and logistics practices, or other needs and opportunities. Such details provide a potentially valuable source of insight to help further support decision-making by the state's transportation planners, forecasters, land use experts, economic development agencies, or other interested organizations, all connected to an ultimate goal of enhancing local, state, regional, and national economic interests.

As listed among the freight strategies and implementation tasks detailed in Chapter 6 of this freight plan, future "deep-dive" supply chain studies that are being considered to continue to grow Delaware's knowledge based potentially include the following industries:

- Freight Intensive Sector (FIS) industry clusters
- Pharmaceuticals
- E-commerce
- Renewable energy
- Coal and petroleum products

### D.5.2 Delaware Import/Export Flows

Supply chain insights should leverage a variety of data sources and potentially include a review of critical import/export flows as part of the analysis. As summarized in Chapter 2 of this freight plan, Delaware foreign import/export trade in 2020 amounted to more than 9 million tons of freight worth \$11.8 billion (FAF5). Leading trade partners by FAF5 region include Rest of Americas (e.g., South and Central America), Europe, Southwest and Central Asia (e.g., Saudi Arabia, India), and Canada. As future supply chain analyses are considered, insights from tools such as FAF5 (e.g., import/export flows as highlighted in **Exhibit D-16** and **Exhibit D-17**) may be used to look more closely at specific commodities, foreign-domestic connection/transfer points, truck or multimodal connectivity and accessibility needs within Delaware, specific cargo capacity or handling needs for multimodal infrastructure within Delaware, or other factors as the supply chain studies are developed.



### **Delaware Agricultural Supply Chain Analysis**

This study reviewed agricultural market trends, transportation system and management issues, and overall supply chain insights for the region, with sample findings as follows:

- Much of the corn and soybean crops grown in Delaware are used to feed chickens, not people; requiring imports from the U.S. Midwest to make up an annual deficit of 120 million bushes (or 5,900 rail carloads).
- Eggs for the poultry industry are kept separately (in case of avian flu outbreak) in North Carolina and trucked to the Delmarva region once they hatch.
- Nutrients and minerals, such as calcium, for feed are imported from Pennsylvania.
- Processed poultry moves primarily to adjacent regions in the Midwest (30%), northeast (60%), and Mid-Atlantic (10%), with a small amount to Puerto Rico.
- Rail service was identified as one of the most important issues for the poultry industry to supply feed, and railroad congestion in Maryland could delay shipments of Delaware rail traffic.
- Highway travel was generally reasonable, but summer beach traffic causes major issues, such as congestion on SR 8, SR 24, SR 26, and SR 404, and for regional just-in-time shipments to New York City.

Source: IHS, Delmarva Agriculture Supply Chain Analysis (presentation to WILMAPCO), January 2015.

### **Delaware Chemicals Manufacturing Supply Chain Study**

This study reviewed Delaware's chemicals manufacturing supply chain based on macroeconomic trends, chemical industry analyses, a review of regional transportation assets and Delmarva goods movement, and potential economic opportunities and policy perspectives, with sample findings as follows:

- The study explored inbound/outbound supply chains at each of Delaware's 12 chemical plants, as well as the influence of potential changes due to oil and gas development in the Marcellus shale play.
- Increased pipeline capacity (e.g., Mariner East) to supply feedstock materials, coupled with manufacturing and port facility investment, is necessary to create a more competitive regional economic environment.
- Modest growth opportunities include an emphasis on high-value, low-weight specialty chemicals, plastics, and pharmaceuticals.
- Policies emphasized a range of multimodal transportation options to support future economic opportunities, including reduced highway congestion, improved truck access to major seaports (Wilmington, Baltimore) and regional airports (Philadelphia, Baltimore), efficient rail access to seaports and to the lower Delmarva peninsula, dredging maintenance (45+ feet) for the Delaware River/Bay, and joint marketing with DVRPC.
- Potential challenges to chemicals manufacturing expansion go beyond transportation policy and potentially involve high energy costs, workforce constraints, Coastal Zone Management regulations, and other tax and regulatory issues.

Source: IHS, Delmarva Chemicals Manufacturing Supply Chain Study (presentation to WILMAPCO), November 2013.







Exhibit D-17: Delaware Export Flows (2020 FAF5)



