

# FHWA Freight Transportation Industry Internship

## Manufacturing



This internship is designed to enable public sector participants to better understand: 1) how the industry's supply chain works; 2) who makes transportation decisions; 3) what drives these decisions; 4) how the industry manages or contends with transportation problems; 5) what critical situations require immediate changes to modes, routes, or schedules; 6) the impact of transportation infrastructure conditions; 7) the importance of the on-time performance of the industry's supply chains and distribution networks; and 8) the economic and policy environments that shape the supply chains. This may be accomplished through focused questions and discussions with responsible industry staff and firsthand observation.

### **Industry Description – Durable Goods**

**Manufacturers:** engaged in the mechanical or chemical transformation of materials or substances into new products. Core activities may include assembling component parts of manufactured products or; blending materials, such as lubricating oils, plastics resins, or liquors. These companies use materials, components, and labor to produce a product for consumers or other industry end users. Durable products may include items such as machinery, electronics, automobiles and automotive parts, glass and glass products, metal or steel shaped into rolls or finished products, or textiles and clothing.

### **Industry Description – Non-Durable/Perishable**

**Goods Manufacturers:** use both perishable and non-perishable materials and labor to produce products for consumers or other industry end users. These businesses typically engage in the mechanical or chemical transformation of materials into new products. Perishable materials supplied to the facility may include food and tobacco products, grains, and other farm products. Manufactured perishable products may include items such as cereals, processed meat products, peanut butter, dairy and soy products, etc.

**Prior to the Internship:** Gather general information on the host industry and facility.

### **Research the type of operations performed at the facility:**

- Ask if the individuals responsible for transportation are located at the facility. While the facility may receive materials, and manufacture and ship products, the individuals responsible for making transportation/logistics decisions may be in an administrative office or headquarters office located elsewhere. Interning in the administrative offices may still

provide valuable insights in understanding how transportation decisions are being made.

- Identify the key staff roles; this will determine the type of experience and level of understanding to be gained at the facility.
- *Combining this internship with one at a motor carrier, trucking company, or third party logistics provider (3PL) may provide a more comprehensive learning experience.*

### **Coordinate and clear proposed activities with the host company**

- Schedule and clear your internship activities with host company officials (including participation in meetings, observations, and interviews) prior to the internship.

### **During the Internship:**

#### **Meet with the Host Facility's Manager**

*As well as the head of Transportation, Logistics or Supply Chain, if located at the facility.*

- How do they characterize their overall supply chain and freight movements; what materials are being shipped into the manufacturing plant and what products are shipped out
- Do they own or operate their own fleet of vehicles or use commercial for-hire carriers; many manufacturers contract out for their transportation services; who makes this decision and why
- If for-hire, does the trucking company choose the routes or does a carrier or 3PL make this decision
- How does the company evaluate trade-offs and prioritize transportation conditions and service factors (e.g., least cost mode; most efficient route or mode; most reliable route or mode)
- If transportation decisions are made by the manufacturer, who schedules the deliveries and shipments and how is this done; what modes, shipment volumes, and schedules are considered
  - Why is a specific mode selected to ship or receive each type of material and product
  - How are product characteristics, such as perishability and value, and process issues such as just-in-time, impact this decision
    - Do they use software to make this decision; what variables are used in selecting modes and routes
    - How does customer service impact transportation decisions

- How does their business operate today compared to the past; one year ago, five years ago, or more
  - Can a significant change in operations be defined at some point in time and what was the impact of that change on transportation
- What are the limits of inventory available so the manufacturing process can continue to operate
  - What occurs should the delivery of materials be delayed
  - Is there a process to offset this occurrence; describe the process
    - Is there “idle” labor; what is the cost of such labor; is there a compensatory mechanism or fine assessed to the transportation or material provider
  - What are “next steps” for the product; is the product a finished good; does it move directly to the end user or to a distributor or wholesaler
  - Does the manufacturer own or operate the distribution channel
- What percent is the cost of transportation to the total product or production cost
  - How do the costs for transportation relate to the industry remaining competitive
  - What are the costs associated with serving different markets, customers, and modes
- What transportation investments have been made by the host company
  - For example:, loading docks, shipping and receiving equipment, vehicles, and technology
- Is the host familiar with who in the public sector (agencies/organizations) make transportation decisions; do they understand how these decisions can affect their operation
  - If yes, does the host interact with the public transportation agencies/organizations; how and why
  - If no, frame a discussion around this point to determine if there is a benefit to the host interacting with the public transportation agencies/organizations.
- Do they participate in an organization or association that may interact with public sector transportation agencies; do they know what the benefits are

#### **Discuss the intern’s public sector job function**

- What types of decisions are made by the FTII participant; how may these decisions impact this company’s performance
- How can participant or agency better communicate with this company and vice versa
- What can be done to improve transportation efficiency for the industry

**If the manufacturer operates their own fleet, meet with the Individual responsible for scheduling transportation.** If possible, attend a driver’s meeting or speak with drivers to understand their perspective

*If the host is a private carrier operating their own vehicles, you should seek to understand motor carrier operations during the internship. Refer to Motor Carrier sheet for additional information.*

#### **Observe Shipping and Receiving Operations**

- Observe how the shipping and receiving schedules are determined
- Observe specifics on how a truck is loaded and why (e.g., distribution of load inside the trailer)

Note: The people you talk to in private industry may not be able to tell you what transportation improvements they would benefit from, but if you listen to them and learn about their operations you should be able to identify the potential role for your public agency to effect improvements that they would benefit from such as infrastructure improvements to the last mile or improved signing so trucks have easier access to and from a facility

#### **Conclusion of Internship:**

- Lessons learned from the internship experience should be shared by both the host and participant with the public agency and host company
- Identify opportunities for collaboration in the future

#### **Contact:**

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