

FHWA Freight Transportation Industry Internship

Airports, Rail, Marine Ports, Terminals, and Pipelines



These internships are designed to enable public sector participants to better understand: 1) how and why transportation related decisions are made at port (air and water), rail, and pipeline facilities; 2) who makes transportation decisions; 3) how the industry manages or contends with problems and issues; 4) what critical situations require immediate changes to modes, routes, or schedules; 5) what is the impact of transportation infrastructure conditions; 6) the importance of the on-time performance to industry's supply chains and distribution networks; and 7) the economic and policy environments that shape these networks. This may be accomplished through focused questions and discussions with responsible industry staff and through firsthand observation.

Industry Description – Airport: is a facility where aircraft (airplanes and helicopters) take off and land, are loaded and unloaded, and cargo transferred. Virtually every air-cargo facility will have an intermodal function.

Industry Description – Marine Port: is a facility for loading and unloading ships and/or barges and transferring cargo (bulk, project cargo, container etc.) between other vessels or modes (truck or rail most often but also pipelines). Freight ports often have cargo-handling equipment for use in loading/unloading. Ports which handle international traffic may have custom facilities.

Industry Description – Railroads: are fixed assets are made up of mainline track, terminals, switching yards, stations, and intermodal facilities. Stations often have locomotive and rolling stock depots (which usually have facilities for storing and refueling locomotives and rolling stock and carrying out minor repair jobs). Rail yards are designed to handle track switching, breaking down operations, and building trains to redistribute cargo coming in and going out to different destinations. Intermodal rail facilities provide for the transfer of cargo from trains to trucks or vice versa. Some facilities are dedicated to intermodal switching.

Industry Description – Pipelines: are made up of thousands of miles of 4 to 48 inch steel or plastic pipelines that may be under or above ground throughout the US used to transport products such as gas and oil to refineries, delivery stations, and/or terminals. Pipeline systems include field instrumentation such as gauges, pumps, valves, and compressor stations; and remote and other terminals that collect and transfer data. Pipeline terminals/refineries can serve as intermodal links where the product is transferred to and from trucks, rail, and water cargo vessels.

These facilities are regulated by various Federal agencies including the Federal Aviation Administration, Federal Railroad Administration, Federal Energy Regulatory Commission, Surface Transportation Board, and U.S. Army Corps of Engineers.

Prior to the Internship: Gather general information on the industry and host company; be familiar with the regulations governing them

- **Contact the host facility to identify the operations they perform**
 - Visiting the site may require special clothing, security clearances, safety training, and equipment; be sure to understand the rules and dress and act accordingly
- **Ask what type employees or work force they employ at that facility** (e.g., union/non-union; contractor)
 - Ask if this restricts who can be interviewed or observed
- **Coordinate and clear proposed activities with the host company**
 - Schedule and clear all internship activities with host company official (including participation in meetings, observations, rides with drivers, and interviews) prior to the internship

During Internship:

Meet with the Facility Manager

- What products and materials are moving into and out of the facility; from where are they originating and where are they destined
- How do the weight, size, value and just-in-time delivery needs impact the mode used
- How and why the products and materials are packaged (containers, etc.) (e.g., does weather impact the packaging)
- Why and how the containers or products are transferred between modes; who determines when and how products are loaded, unloaded, or transferred between modes
- What is the busiest shift and why
- What metrics are used to evaluate the operation; metrics may be the amount of time it takes to load or unload or transfer between modes, the numbers of transfers or pick-ups that occur throughout the day and evening; or dwell time between arriving and leaving the facility

- What transportation related issues impact their business and its operations
 - Fuel prices
 - Increase or decrease in demand for products (economy)
 - Seasonal impacts
- 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
- What types of changes could the business experience in the short term; long term
- What technological and equipment investments are being made related to:
 - Loading and unloading, transferring loads
 - Routing of shipments in inbound and outbound operations
- Are there instances when they need to change or alter the mode, route, and schedule for shipping or receiving materials and products; if so, what are the causes; what are the consequences of major weather or other delays; how is this accounted for
- What other risks or special conditions impede their shipping and receiving process
- How does the industry deal with congestion; what changes do they make in how and when they ship or receive materials and products and how they route products
 - Known bottlenecks
 - Time of day congestion
 - Incident induced congestion
- How do the conditions on the access routes (last mile) impact getting products into and out of the facility
- Is the host familiar with the role of the public sector (agencies/organizations) in 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

Observe Inbound Operations

- Observe the physical handling of the shipments as they are unloading
- Observe the equipment being used to unload and equipment used to transfer cargo
- Observe and familiarize yourself with the actual shipments being handled
- Observe staging areas — how and where they are located, their size, and how long cargo or containers stay in the staging area before they are moved
- Observe why a specific cargo is moved by a particular mode
 - Does the process change with each day; with each load; why
 - Are there specific guidelines to be met

Observe Outbound Operations

- Observe the shipments and their physical handling as they are loading
- Observe the equipment being used to load and the vehicles, vessels, airplane, or rail car
- Observe and understand how and why a shipment is loaded to a specific destination
 - Does the process change with each day; with each load; why
 - Are there specific guidelines to be met

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

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