

3.0 Rail Haulage of Crude and Ethanol – Practices

3.1 Overview of Railroad Transportation

This section provides a general overview of the components of rail haulage of crude oil and ethanol in Iowa.

At present, ethanol transported by rail is loaded and unloaded at rail served facilities in Iowa and crude oil shipments by rail travel through Iowa between producers in Canada and the Bakken oil region of North Dakota and markets in the Southern and Eastern U.S. The loading and unloading of railcars in Iowa containing ethanol typically occurs at a privately owned, or shipper-owned, location and not on the property of or via the use of railroad-owned facilities. Railcars containing crude oil are not presently loaded or unloaded in Iowa.

Crude oil and ethanol are loaded into railroad tank cars. Each commodity is generally transported from a producer at a point of origin to a receiver at a point of destination in a homogeneous unit train pulled by locomotives and carrying 50 or more cars. An empty buffer car, not used to transport crude oil or ethanol, is placed between the lead car of the unit train and the locomotives pulling the train. Trains carrying crude oil and ethanol are typically operated by a two-person train crew consisting of a conductor and engineer that will often operate a train for between 100 and 150 miles (a crew district) before being relieved by another train crew. Railroad operations are conducted in compliance with federal regulations, which address railroad operations; maintenance of track, bridges, signals, locomotives, and equipment; safety; and labor.

Rail lines in Iowa hosting crude oil shipments include main lines with medium to heavy rail traffic density. Rail lines in Iowa hosting ethanol shipments include branch lines with light rail traffic density and main lines with medium to heavy rail traffic density. Railroad main lines in Iowa have either one main track with sidings to accommodate meet-pass events between trains or have two main tracks. Many lines in Iowa over which crude oil and ethanol are transported have a wayside signal system to increase operating efficiency, velocity, and safety and to prevent the likelihood of collisions between trains and other accidents. A Positive Train Control (PTC) system that further minimizes the likelihood of train collisions and overspeed accidents, and mandated by federal law, is under development on many lines in the Iowa railroad network. Trains carrying crude oil and ethanol in Iowa travel at speeds consistent with the method of operation, track geometry, geographical constraints, challenges of operations in urban and rail terminal areas, and other considerations on a given rail line segment. Maximum authorized speed for trains carrying crude oil and ethanol may range between 10 and 60 miles per hour (mph).

The general ownership and maintenance of railroads in Iowa is described further in Section 9.1 below.

3.2 Organization of the Rail Transportation Network

This section generally describes the organization of the Iowa railroad network as applicable to the railroads that potentially host crude oil and ethanol transportation in Iowa.

In Iowa, most railroads own and maintain the networks over which they operate or directly provide railroad transportation. Ownership and maintenance generally includes all fixed railroad infrastructure including bridges and other structures, track, wayside signal and communication systems, and administrative and maintenance facilities. Railroad equipment, including

locomotives, railcars, vehicles, and other heavy equipment, may be owned and/or leased by the railroad. Maintenance can be provided by a railroad and/or an outside entity, as appropriate.

There are instances in which a railroad may not own railroad line segments over which it operates in Iowa, as described below.

- Trackage rights are an arrangement whereby one railroad (tenant) has the authority to operate over a segment of railroad owned by another (host). For example: Union Pacific Railroad (UP) has trackage rights over the Canadian Pacific Railway (CP) between Emmetsburg and Hartley, Iowa, to access a shipper served by UP and CP at Hartley. Also, Amtrak does not own any trackage in Iowa, but its passenger trains serving Iowa operate over two lines owned by BNSF Railway (BNSF).
- Haulage rights are an arrangement whereby one railroad markets service over a route owned by another, but does not operate its own trains over the railroad. For example: Union Pacific Railroad (UP) has haulage rights over the Iowa Northern Railway (IANR) between Cedar Rapids and Waterloo, Iowa, to access isolated UP customers in the Waterloo area.
- Public ownership of a railroad line over which a railroad provides transportation exists on a limited basis in Iowa. For example, D&I Railroad (DAIR) operates over a line in Iowa and South Dakota that is owned by the State of South Dakota. The State of Iowa does not own any railroads in the state at present.
- In other cases, a railroad segment may be owned by one or more railroads and involve some level of public ownership. For example: the Fourth Street Rail Corridor in downtown Cedar Rapids, Iowa, hosts railroad operations of the Cedar Rapids & Iowa City Railway (CIC), Canadian National Railway (CN), Iowa Northern Railway (IANR), and Union Pacific Railroad (UP) over right-of-way owned by the City of Cedar Rapids, and on track owned by two of the railroads – CIC and UP.

Section 9.0, of this study, identifies and describes additional details related to the organization and the physical characteristics of each Iowa railroad segment that is potentially used for transporting crude by rail and ethanol.