

Selecting rail as a mode of transportation



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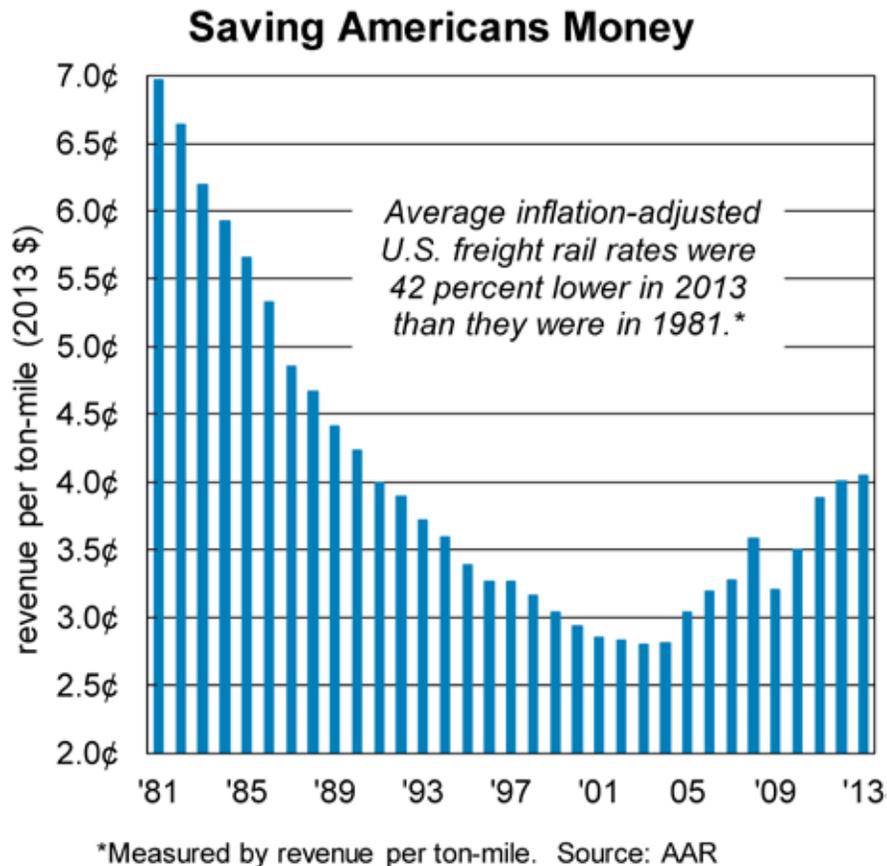
Transportation modes are selected based on several factors that include but are not limited to the following.

Economics

Rail has particular cost advantages when shipping sizable quantities or commodities in bulk where the large capacity of a rail car (or multiple cars) offers economies of scale. Shippers moving oversized or overweight truckloads may be able to use rail to avoid or reduce issues with highway clearances and permitting. Rail is often a very effective way to move large equipment, pipe, and other dimensional cargo. The serving railroad can provide details and the process to ship oversized loads by rail.

In a competitive transportation market, transportation service providers typically compete on a cost per mile basis. Total landed costs (includes the cost of the product as well as all shipping costs, tariffs, taxes, insurance, handling fees, etc.) can also be compared when making mode selections. But other factors such as inventory, damage in transit, and any special material handling requirements must also be considered. The ability of a carrier to make information available on the status and location of in-transit shipments can be important and mitigate the impact of potentially longer transit times and travel time variability that can be experienced when shipping by rail.

When adjusted for inflation, rail rates today are nearly half of what they were in 1981, according to economists at the Association of American Railroads, despite a recent upswing in rates.



Commodity characteristics

Most products can move by rail if packaged correctly. Railroad carriers have loading specialists who can help you secure your shipment to avoid damage. The matrix below illustrates a sample of products that can successfully be shipped by rail. Some products, depending on shipment quantity, can move in either rail car or intermodal service. One intermodal shipment is typically the same size as a truckload shipment. One railcar shipment can move the same amount of cargo as three or four truckloads depending on the product dimensions and rail car size. Loading bulk cargo in rail cars can often speed up the loading process given today’s high-capacity loading equipment and large-capacity rail cars.

Industry	Automotive	Bulk products	Consumer goods	Merchandise	Dimensional cargo
Rail car types	Autorack car	Hopper rail car	Intermodal	Railcar	Flat car
Products	Finished vehicles	Grain, feed	Food, beverage	Food, beverage	Machinery
	Import or export vehicles	Sand, cement, gravel	Electronics	Building supplies	Logs
		Coal	Parts	Machinery	Lumber
		Ores	Manufactured products	Fertilizer	Wind generator blades
		Nonmetallic minerals	Mixed freight	Paper products	
		Stone	Textiles	Basic chemicals	
			Retail products	Household products	
			Scrap		
		Exports and imports			

Access

Rail-served industries can load rail cars at the point of origin and destination. For shippers or receivers without direct rail access, transload operations using public or contract facilities can load/unload railcars directly, and then trucks can support the first or last segment of transportation. Intermodal rail services involve the loading of containers or trailers that can be loaded onto the train at designated terminals. This equipment is then trucked from the rail terminal to the shipper’s or consignee’s facility.

Train operating service characteristics

Railroads often distinguish carload train service by the operational profile of the train handling the freight. A train that loads an entire train at an elevator, mine, or other facility is often called a “unit” or “shuttle” train, which is a grouping of cars that are all loaded at the same place and move to a single destination without intermediate stops. Manifest train service is typically described as several railcars moving from one customer to another. These individual shipments are grouped together at the rail terminal and move together in designated train service, which stops to make pickups and drop-offs along the way.

Train operating service characteristics

- Railcars can carry as much as three to four truckloads moving between the same origin and destination pairs. Rail service provides a benefit to any shipper who moves large quantities of freight.
- Rail service is more cost competitive the longer the length of haul; however, some shipments under the right circumstances can move short distances over a single rail-owned segment.
- While rail transit times may be longer than truck transit times, with proper planning, a longer transit time via a lower cost mode can reduce supply chain costs.
- Are your suppliers or customers located on rail or near a rail transload? If the answer is yes, rail might be an option for you to consider.
- For shippers who measure their carbon footprint, rail is a desirable mode of transportation.
- For those who pay for and designate the mode of transportation, understanding rail alternatives can provide substantial cost savings.

Mode transportation comparisons

Trucks

Trucking companies provide a variety of services. Contract fleets typically move between modes in one shipper-owned network. Less than truck load (LTL) service typically combines the freight of several customers and moves cargo between consolidation points, and delivers freight to the customers' locations. A most notable LTL shipper is United Parcel Service. Full truckload service providers move products from one customer to another using a variety of equipment, including dry van, flatbed, hopper, and refrigerated equipment. Trucks are flexible and can move small shipments of a few hundred pounds up to 48,000 pounds per shipment depending on equipment configuration.

Railroads

Railroads move on privately owned networks for the most part, and are well suited for moving large volumes of freight between two shipping points. Railroads are the workhorse of the bulk commodities and construction trades. They provide significant economies of scale due to their fuel-efficient operations. Rail access is available to many industries nationwide and is also available to users who are near transload facilities. These transload operations combine the volume of three to four truck shipments into one rail car for transportation to the final customer or supplier.

Barges

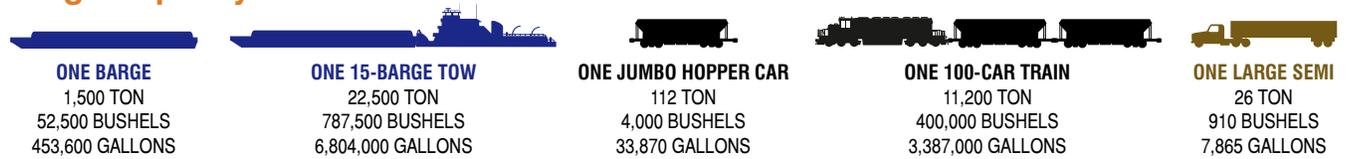
Barges are a staple of the industries moving bulk products by river or inland waterway. This mode often competes with rail but is more limited based on marine access. Barges can be loaded and unloaded much more rapidly than packaging a bulk product and putting it in a truck. The comparison below shows that one barge can handle as much as 58 trucks or more than 13 jumbo hopper rail cars. Barges are also very fuel-efficient compared to rail or truck. Barges can be delayed by ice on the waterways in the winter. Transit time may vary widely based on the direction of the current and river conditions.

Compare ...

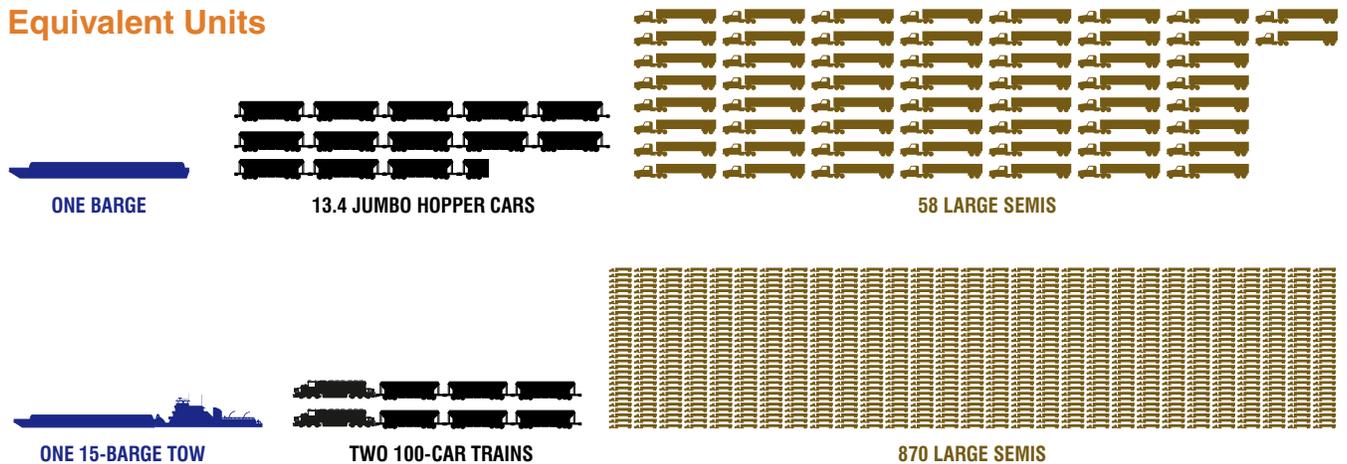


Source: Iowa Department of Transportation - 800 Lincoln Way - Ames, IA 50010 - 515-239-1520

Cargo Capacity



Equivalent Units



Equivalent Lengths



Alternate access to railroads

Transloading – a solution for shipper without direct rail access

Transloading

In its broadest definition, transloading is the process of transferring freight between two modes of transportation. This toolkit will focus on transferring freight between rail and trucking.

Transloading allows a shipper to take advantage of the cost, speed, and capabilities of more than one mode of transportation. For example, it can link the flexibility of a truck to the long-haul efficiency of rail. A larger shipment can be hauled a long distance by rail and divided at a site near the end-use market into several truck movements for deliveries to customers in the area.

Trucking coupled with long-haul rail service may offer cost savings and improve the flexibility and reliability within the supply chain. Transloading may be a viable option whenever a shipper or customer does not currently have railroad tracks into or at a facility.

Transloading works for many commodities, including finished and unfinished goods, fresh food and beverage products, lumber, paper, metals, building materials, a variety of packaged bulk commodities, as well as special shipments that cannot travel their entire route by road.

How a shipper gains access to the rail system to transload a shipment varies a great deal. A shipper may utilize high-tech container shipping (covered in the next section on intermodal shipping) or a simple rail car set out on a siding (a team track). Between those two extremes there are a variety of options with varying levels of service.

How does transloading work?

The diagram on the following page illustrates an example of a transload process.

In this example, there is a transload at both ends of the commodity's journey. The transload process can produce greater economic benefits if only one end of the transportation process uses a transload operation.

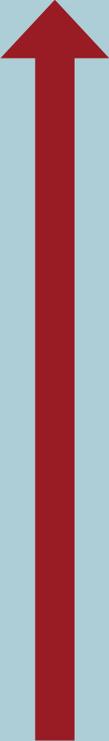
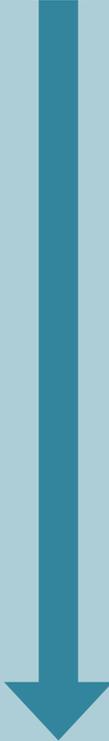
Types of transloading

Transloading facility with warehousing

A full-service transloading facility with warehousing can add value and flexibility to your supply chain. By offering short- or long-term storage and handling for goods, a shipper can position goods closer to end users. Products can be reloaded from a larger-quantity rail car, stored, and shipped direct to customers meeting their needs for speed and reliability. Each transload facility may offer a variety of services such as on-call delivery from their warehouse; merchandise consolidation and distribution; packaging, labeling, assembly, or other value-added services.

Some transloading facilities specialize in a particular product or type of product such as a cold storage transload/warehouse that deals only in refrigerated or frozen goods.

Example of a transload process

Inbound	Process	Outbound	Description
	Load		The commodity is loaded on a short-haul truck for delivery to a transload facility.
	Transport by truck		The truck delivers the commodity to a transload facility, usually within 50 miles of origin.
	Transload		The commodity is loaded onto rail cars. This can be accomplished in many ways depending on the commodity. Transload facilities for bulk liquid commodities will have specialized bays where liquids are pumped through a pipeline to a rail tank car. Dry bulk commodities may use gravity, pneumatics, or a mechanical means to transfer from one mode to another. Forklifts, cranes, and other lifting equipment may be used for other commodities.
	Terminal handling		The loaded rail car will be spotted for pick up by a railroad carrier. Transload facilities may be served by a single railroad or multiple railroads. Multiple railroad carriers serving a transload facility offer the advantage of price competitiveness and routing options.
	Ship by rail		The loaded rail cars are routed to the transload facility near the destination, or may be delivered directly to the customer if they are rail served.
	Store (optional)		Sometimes, at the option of the customer (and when available) the transload will store the commodity on-site until the customer requests the material. Options may exist for either long- or short-term storage.
	Transport by truck		The commodity is transloaded to short-haul trucks for the final leg of the journey and the cycle is complete.

Basic transloading facility

Other transloading facilities have the ability to shift from mode to mode, but lack warehousing and have limited or no value-added services and staffing. Also, a transload facility may be dedicated to a single type of product with particular requirements such as an ethanol transloading site or a food grade product transloading site. Other facilities may have the capability for multiple types of products.

Cross dock

At a cross-dock transloading facility, cargo is unloaded from an incoming truck or rail car and is reloaded, typically within the same day, directly into outbound trucks, trailers, containers, or rail cars. Inventory is not held during the process. A cross dock typically allows level loading between modes.

Team track

A team track is the most basic type of transload facility. It is a simple siding or spur track where railcars are placed, available for public use to load or unload freight. No services or equipment are provided by the track owner. A team track may be owned by the railroad, business served by the railroad, industrial park, public agency, or freight terminal operator. It is the responsibility of the shipper or receiver to load/unload the car(s). The shipper or receiver must provide any needed equipment, as well as blocking and bracing to secure the load. Once the cars are loaded, the railroad is notified to pick them up.

Iowa's transloading facilities

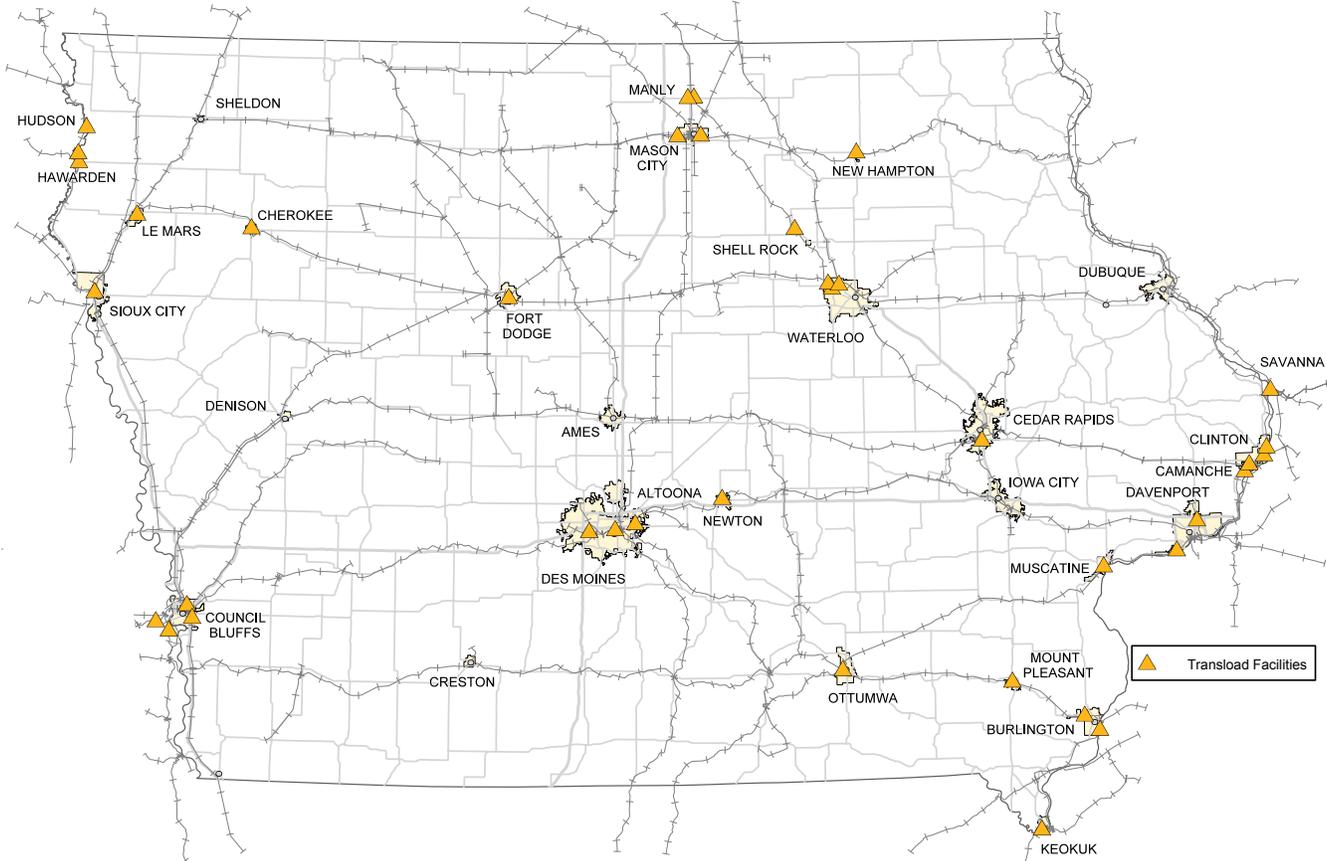
The table and map on the following pages show transloading locations that have been identified through conversations with railroad staff, along with a brief description and the name of a contact person or number. Contact the transloading location directly to find out more about the services, staffing, and capabilities of each location.

Transloading facilities and warehouses with rail service

Location	Name	Services	Railroad	Contact Information
Altoona, Iowa	Merchants Distribution Services	Warehousing facility	IAIS	Randy Worth 515-244-2123
Burlington, Iowa	Burlington Junction Railroad	Rail-to-truck and truck-to-rail transload, cross dock, warehouse space, lay-down yard, secure paved outdoor storage, unit train capable	BJRY	319-753-6157 transload@bjryrail.com
Camanche, Iowa	ADM Terminal Service	Enclosed facility with eight tracks and 100 railcar spots, can handle bulk and dimensional cargo	BNSF, CP, UP	Jim Dougherty 563-242-6073
Camanche, Iowa	Union Pacific Distribution Services	12-acre wind component distribution center	UP	Doug Graham 402-544-7940
Cedar Falls, Iowa	Standard Distribution Co.	Warehousing facility	CN	319-277-9280
Cedar Rapids, Iowa		Cross dock, team track for dry material transfer via PD truck	CRANDIC	Jeff Woods 319-786-3660
Cherokee, Iowa	Cloverleaf Cold Storage	Warehousing facility	CN	712-225-5151 cherokee@cloverleaf.com
Clear Lake, Iowa	Progressive Rail Services	Third-party logistics and transloading, 70,000 square-foot warehouse storage with 50,000 square-foot of temperature control	IATR	Michael Johns 641-529-0061
Clinton, Iowa	ADM Terminal Services		CP	Jim Dougherty 563-242-6073
Clinton, Iowa	Clausen Companies	Available food grade and nonfood grade warehouse space, including temperature control, rail/truck transfer for dry and liquid bulk, as well as packaged products; operates its own truck fleet; four tracks capable of handling eight railcars	UP	563-242-4994
Council Bluffs, Iowa		Team track accessibility	IAIS	Carrie Evans 319-298-5408
Council Bluffs, Iowa	Union Pacific Distribution Services	Team track with a four-car spot and side dock	UP	Jon Krier 402-544-7822
Davenport, Iowa	Catch-Up Logistics	Frozen, refrigerated, and dry storage	CP	412-441-9512
Davenport, Iowa	Murray Warehousing	Temperature controlled facilities; cross dock specialized equipment	CP	www.murrayswarehouse.com 563-333-4575
Des Moines, Iowa	Lucky Trucking Inc.	Three tracks with 2,520 track feet available for plastics transloading	UP	515-685-3779
Des Moines, Iowa	Merchants Distribution Services	195,000 square-foot public warehouse to handle general merchandise and paper, ISO 9000 certified, two tracks and five rail doors; operates local trucking fleet	UP	Greg Dickenson 515-244-2123
Emery, Iowa (Mason City)	IATR	Car loading and unloading facilities, a truck height dock, liquid transfer capability with track pans, crane service for heavy lifts, and flatcar loading for machinery.	IATR	Michael Johns 641-529-0061

Hawarden, Iowa	GCC Dakotah Cement (raw cement)	3,000 feet of track leased for a cement terminal with additional track space as needed for storage	DAIR	724-552-3818
Hawarden, Iowa	Poet Nutrition (corn oil)	1,800 feet of track leased for a truck-to-rail transload with additional track space as needed for storage	DAIR	605-330-6588
Hudson, South Dakota	Siouxland Energy Transload (SELC)	Nearly 7000 feet of private track constructed by SELC for their ethanol transloading operation	DAIR	712-722-4904
Keokuk, Iowa	KJRY	Team track	KJRY	Cathy Busch 309-697-1400
Le Mars, Iowa	City of Le Mars	Team track	CN	City of Le Mars
Le Mars, Iowa	Le Mars Public Storage	Warehousing facility	CN	712-546-1644
Manly, Iowa	Manly Logistics Park	2-mile loop track and cross-dock facility	IANR	319-297-6000
Manly, Iowa	Manly Terminal/ Yard	800-car rail classification yard, 100-acre site for liquid storage and transload, wind turbine component distribution center	IANR	641-822-4500
Manly, Iowa	Union Pacific Distribution Services	Wind component distribution center, 25 acres	IANR	Doug Graham 402-544-7940
Mason City, Iowa	Cartersville Elevator Inc.	Warehouse rail-to-truck and truck-to-rail transload	CP	Larry Rooney 641-421-1124
Mount Pleasant, Iowa	BJRY	Rail-to-truck and truck-to-rail transload, 40 acre greenfield site suitable for manufacturing and transloading operations	BJRY	319-753-6157 transload@bjryrail.com
Muscatine, Iowa	Cam II Warehouse Inc.	Warehousing facility	CP	563-263-0061
New Hampton, Iowa	New Hampton Transfer and Storage	Secure outdoor and climate controlled indoor facilities	CP	641-394-3191
Newton, Iowa	IAIS	Team track accessibility	IAIS	
Ottumwa, Iowa	BJRY	Rail-to-truck and truck-to-rail transload, secure lay-down yard, end-ramp	BJRY	319-753-6157 transload@bjryrail.com
Omaha, Nebraska	Geo Transload LLC	Rail/Truck transload facility with 65,000 square feet of warehouse space with inside rail for boxcars, six acres of outside storage for one-dimensional products, 32 car spots	UP	Steve Fitzpatrick 402-896-2816
Omaha, Nebraska	Omaha Transloading	Covered and enclosed facilities with 15 tracks and spots for 240 railcars, can handle bulk and dimensional cargo, has warehouse available	BNSF	402-341-2233 steven2@omahatransloading.com
Savanna, Illinois	Riverport Railroad LLC	Enclosed and uncovered facilities with three tracks and spots for 999 cars, bulk and dimensional cargo capability, and warehouse available	BNSF	815-273-3200
Shell Rock, Iowa	Butler Logistics Park	Railcar storage, industrial development space available	IANR	319-297-6000
Sioux City, Iowa	Big Soo Terminal	Multicommodity, multidimensional rail/truck and rail/barge transload terminal, two tracks, 65 car spots, 100,000-square-foot warehouse storage, 6 million gallons of liquid tank storage capacity, 125,000 tons of dry bulk storage capacity, 15 acres outside storage, river dock for transferring products to barges	UP	Kevin Knepper 712-258-0537 www.bigsoo.com
Various locations in northwest Iowa	DAIR	Single or low-volume transloading of an assortment of various products	DAIR	Jack Parliament 605-330-6588
Waterloo, Iowa	Waterloo Terminal/ Bryant Yard	Self-serve, cross dock, and direct rail-to-truck transload facility	IANR	319-297-6000

Rail transload locations in Iowa



These transload locations are shown by city. For more information on each, refer to the table on page 20 and 21.

Intermodal

What is intermodal?

Intermodal freight transport involves an intermodal container or trailer, using multiple modes of transportation (rail, ship, and/or truck), without handling of the freight itself when changing modes. The method reduces cargo handling, improving security, reducing damage and loss, and can allow freight to be transported faster. For this toolkit, the focus will be intermodal service using rail. Intermodal rail service typically combines truck pickup and delivery with rail line haul service. Trucks transport containers and trailers to rail terminals often within 100 miles of the loading/unloading point. Intermodal trains typically are not mixed with rail manifest or unit trains and move in dedicated rail service between designated terminals.

Intermodal service is not sold directly to shippers, but instead it is coordinated by truckload carriers, intermodal marketing companies, or third-party logistics (3PL) providers. These providers bundle the terminal-to-terminal train service with trucking services (often called drayage) between customer locations. Container and trailer equipment is provided by the intermodal marketing company and/or trucking company.

What are the types of intermodal service?

Domestic intermodal service typically moves across the rail network in 48’ or 53’ long containers between terminals located on the Class I rail network in North America. While technically terminals in Mexico and Canada are international locations, the North American surface transportation system connects these markets using the same railroad service standards and similar equipment. Equipment specifications are shown below in Figure 1.

48’ high cube x 102” Usable cube capacity 3,470 cu. ft.				53’ high cube x 102” Usable cube capacity 3,830 cu. ft.			
Inside dimensions	Door opening	Palletized loads	Tare weight	Inside dimensions	Door opening	Palletized loads	Tare weight
L 48’6”				L 52’6”			
W 98”	W 98”	48” X 40” (units) 28	Container only 9,600 lbs.	W 98”	W 98”	48” X 40” (units) 30	Container only 10,750 lbs.
H 106.5”	H 206.5”	48” X 42” (units) 26	Container with chassis 18,000 lbs	H 106.5”	H 106.5”	48” X 42” (units) 30	Container w/ chassis 19,340 lbs.

Figure 1: Domestic container specifications source: PNW Equipment Inc.

International intermodal import service typically enters the rail network at or near a deep-water port. Export products are loaded in empty containers and typically shipped by rail to a deep-water port. International containers are provided by the ocean carrier and are typically 20 or 40 feet in length. International containers are mounted to chassis at the final terminal for local delivery. These services are typically coordinated by a freight forwarder or are specified in the ocean transportation contract. Equipment specifications are listed on the next page in Figure 2.

Container size/ type	Material	Outside height (in.)	Tare weight (lbs.)	Max. cargo capacity (lbs.)	Door opening		Interior dimensions		
					Width (in.)	Height (in.)	Length (in.)	Width (in.)	Height (in.)
20 ft.	Aluminum	102	3,594	41,204	92	90	233	92	94
20 ft.	Steel	102	5,071	47,840	92	90	232	92	94
40 ft.	Aluminum	102	5,820	61,377	92	90	475	92	94
40 ft.	Steel	102	8,510	58,687	92	90	474	93	94
40 ft. high cube	Aluminum	114	6,636	60,561	92	104	475	92	105
40 ft. high cube	Steel	114	8,796	58,400	92	102	474	93	106
20 ft. refrigerated	Aluminum	102	6,217	46,694	89	87	218	89	89
40 ft. refrigerated	Aluminum	102	9,039	58,158	90	85	460	90	87
20 ft. open top	Steel	96	5,401	47,510	92	88	232	93	92
40 ft. open top	Steel	102	9,149	58,048	92	88	473	93	92
20 ft. flat rack	Steel	102	5,732	47,179	-	-	234	93	89
40 ft. flat rack	Steel	102	11,244	55,953	-	-	475	93	89
40 ft. platform	Steel	-	13,580	110,231	-	-	480	96	-

Figure 2: International Container Dimensions Source: Redhawkglobal.com/resources/intermodal-container-specs



Figure 3: North American Intermodal train network and terminals:

Source: Oak Ridge National Laboratory. BTS. Containerization International

Credit: Dr. Jean-Paul Rodrigue, Department of Global Studies and Geography, Hofstra University

The map in Figure 3 shows the North American intermodal train network and terminal locations. There is one intermodal terminal in Iowa, located in Council Bluffs on the Iowa Interstate Railroad. Other Midwest intermodal facilities are in Minneapolis/Saint Paul, Minnesota; Chicago and Rochelle, Illinois; Kansas City, Missouri; and Omaha, Nebraska.

Carload

Rail carload shipping has been a viable form of transportation since the 1800s. Freight can be transported in a dedicated (unit) train or as part of a broad mix of freight types (manifest service). Solids, liquids, and gases can be moved with a variety of car types. Some of the common options for freight transportation by rail are described below.

Manifest train service

Manifest trains are made up of rail car shipments from multiple shippers. The train might contain boxcars, hopper cars, and flatcars carrying a broad variety of products. Individual rail cars are loaded at a customer facility and move to a regional switching yard. From that yard they are added to a train, moved to the final train terminal where individual cars are switched out of the train, and then are delivered to local customers. Manifest trains may have 100 different shipper and receiver combinations within a single train. The diagram below illustrates how cargo moves in a Class I manifest rail network. While transit times can be predictable, when train volumes vary, transit times can often be widely variable.



Figure 1: Class I manifest train movement

Unit train service

Unit trains are often blocks of 100 to 130 rail cars, all traveling at the same time between two point pairs. Shuttle trains typically move 50 to 55 cars between two point pairs. When possible, shuttle trains are combined to gain operational efficiency. Cars in unit train or shuttle train service are loaded at one origin and all the cars move together to the final destination. There are efficiencies in this type of service because there is less car switching required. However, the shipper must be able to load a full train in the space of 24 hours or within a time specified by the railroad. Unit train service is very efficient and among the lowest cost trains for shippers. Unit train service is often used for coal, crude oil, grain, and other bulk commodities.



Figure 2: Class I unit train movement

Rail cars

There are many rail car types in use in the rail industry. Several standard car types are provided by many railroads. Shippers with special needs have designed and purchased their own rail cars. Equipment leasing companies also offer lease agreements for certain types of equipment. In 2013, the American Association of Railroads reported that 364,025 rail cars were owned by Class I railroads, 90,502 were owned by short line and regional railroads, and shippers and leasing companies owned 792,100 cars for transportation purposes.

Boxcars

Boxcars are general purpose vehicles that carry products like packaged foods, paper, machinery, and just about anything you might load in a dry van truck. Some boxcars are refrigerated and carry fresh and frozen foods or any products requiring temperature control. The specifications below illustrate rail car cubic and weight carrying capacity.

	50' standard	50' high-roof	60' standard	60' high-roof	86' auto
Inside length	50' 7"	50' 6"	60' 9"	60' 9"	86' 6"
Inside width	9' 6"	9' 6"	9' 4"	9' 6"	9' 6"
Inside height	10' 11"	13'	10' 10"	13'	13'
Door type	Slide and/or plug	Plug	Slide and/or plug	Plug	Slide and/or plug
Door width	10'	10' - 12'	10'	10' - 12'	20'
Door height	10'	12'	10'	12'	12'
Exterior length	55' 5"	58' 2"	67' 11"	67' 7"	93' 6"
Exterior width	10' 7"	10' 8"	10' 6"	10' 8"	10' 8"
Cube capacity	5,238 cu. ft.	6,269 cu. ft.	6,085 cu. ft.	6,646 cu. ft.	9,999 cu. ft.
Freight capacity	70 to 100 tons	100 tons	70 to 100 tons	100 tons	70 tons

Flatcars

Flatcars are often used for finished machinery, transformers, tractors, steel plate, steel coils, logs, pipe, and other products that may not be able to be loaded easily within a boxcar. Flatcars can have a center beam for strapping finished lumber, wall board, or building products. Bulkhead flatcars often carry pulp logs cut into 5-foot lengths that move to paper mills, and can also be used to move pipe or other products that might shift if a bulkhead was not available to stabilize the load. General purpose flatcars often carry machinery that is tied down to stabilize the load. Flatcars come in a wide variety of lengths and configurations.

Hopper cars

These bulk utility cars come in several sizes and configurations. Some have covers to keep cargo dry in transit. Most hopper cars have two to four compartments and are typically loaded from the top. Many hopper cars have a bottom gate allowing them to dump product using gravity to unload the product. Open hopper cars move bulk products that are not affected by weather such as scrap, coal, stone, slag, gravel, and sand.

	Small cube	Jumbo
Size	2,700 to 3,599 cubic feet	3,600 to 5,324 cubic feet
Freight capacity	70 to 100 tons	100 to 110 tons
Car length	39' to 50'	55' to 65'
Car height	13' to 15.5'	15' to 15.5'
Compartments	Two to three	Three to four
Loading hatches	Three to six centered 30" diameter, or Eight to twelve off-centered 30" diameter	20" to 40" wide center trough running the length of the car
Outlet gates	One to two 13" by 42" gates per compartment	Two 13" by 42" gates per compartment
Number of gates per car	Two to six	Three to six
Gate spacing	12'	12' to 15'
Gate types	Gravity	Gravity

Gondola cars

Gondola cars are an open top car with a flat bottom. Cars can reach up to 65-feet long and sides range between four to eight feet high. Commodities that typically move in gondola cars include sand, ore, gravel, and scrap.

	52' Gondola	65' Gondola
Freight capacity	70 - 100 tons	100 - 110 tons
Car length (standard)	52' 6"	65' 6"
Car height (standard)	9' 13/16"	9' 13/16"
Inside height (standard)	5' 6"	5' 6"
Inside width (standard)	9' 6"	9'
Cubic capacity	2,743 cubic feet	3,242 cubic feet

Tank cars

Tank cars are highly specialized to carry bulk liquids. Primary types of tank cars include general service, heat coil and insulated cars, high-pressure tank cars, acid and liquid sulfur cars, and crude oil cars.

These cars are typically privately owned, and carry a wide range of chemicals, gases, fertilizer, and food products such as syrups, juices, and other beverage products.