The Des Moines Metropolitan Organization

Des Moines Rail Transload Feasibility Study

June 28, 2014

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Executive Summary

This feasibility study is for the design, construction, and ongoing operations of a rail transload terminal, "Railport," in Des Moines, Iowa. In January, 2014, the DMPO completed a logistical and freight movement analysis of the DMPO's region (the "Rail Market Study") which concluded that the current and expected rail market in Des Moines was sufficient to warrant the examination of the Railport.[1] The purpose of this study is to provide an investigation of the facility conceptual design to fit into City of Des Moines property based on several factors. These factors include: a desktop evaluation of the physical constraints, a review of how the site and terminal could be served by and among the serving carriers including the Union Pacific (UP), BNSF Railway, (BNSF), Norfolk Southern (NS) and the Iowa Interstate Railroad (IAIS), the estimated costs and benefits of the proposed project, a summary of the parties who may interested and available to operate Railport, and how Railport could serve to expand the transportation infrastructure of the region and support economic growth. The location of Railport has unique access to four Class 1 railroads, which, once developed, distinguishes the site by providing the market with cost-effective, direct rail access to most of the U.S. rail network, Mexico, and Canada. As a point of reference, only approximately 25% of US shippers have direct access to more than one Class 1 railroad. The benefit of having access to more than one Class 1 railroad creates competition which can afford shippers with this access to far lower rail rates than their competitors who may not have this access.

Site development, when pursued with a mindset of supporting existing needs and future growth, is about identifying the market and controlling risk and minimizing costs while developing solutions for the specific site conditions and economic requirements, current and foreseen. Once all considerations are made, we are able to solidify the business case for the related project. This report provides information that the DMPO may use to help validate the Railport project's next steps, including investment requirements.

The Project Team has completed the feasibility study for the Des Moines Railport based on a preliminary design, related estimated capital costs, operating structure, and other factors. We have concluded that the DMPO can design and build Railport which is served by multiple railroads and has broad global reach which will greatly improve Des Moines rail infrastructure. In addition, Railport will have little to no initial capital outlay for the local authorities, will be attractive to potential operators who may invest in the facility or lease it, and can generate revenue for the DMPO. Based on the study herein, the DMPO should continue the loan application process with the State of Iowa and develop a Request for Proposal to gauge interest and financial participation in Railport by potential operators.

[1] See Appendix 2 for the Rail Market Study

Findings and Background

The project team has developed this study to a level necessary to provide some clarity around the proposed Railport at the Des Moines site. The report is structured to provide a summary of our findings, followed by sections that contain a Project Overview, Assumptions, Market Analysis, Construction Analysis, Operational Analysis, ProForma Financials and Conclusions and Recommendations. This report relies on interactive and iterative discussions with the DMPO, members of the project team, discussions with existing and potential rail customers, and discussions with the serving rail carriers.

Project Overview

The objectives of the Des Moines Metropolitan Planning Organization, or "the DMPO" are to evaluate and support the development of cost-competitive logistics infrastructure projects in the community in order to meet the following four goals:

1. Improve the overall freight capacity and options in the metropolitan area,
2. Develop rail centric transportation options for existing businesses,
3. Expand existing transportation options to attract new industries to the region and support economic development, and,
4. Focus the southeast area of Des Moines to support Industrial Development, in particular its manufacturing base.

Based on the results of the DMPO's region's Rail Market Study completed in the first quarter of 2014, the Project Team was tasked to perform a feasibility study to validate the design and construction of Railport in Des Moines. The purpose of the feasibility study is to evaluate the economic costs and benefits of the proposed Railport based on a design concept and other key assumptions and requirements. These key assumptions include: 1) community requirements, including traffic patterns, 2) input from the serving rail carriers, 3) physical constraints of the proposed, city-owned, property, and 4) expected shipment volume and commodity type. In addition, the Project Team has estimated the capital required to construct Railport. This estimate has been compared to the projected related economic and other benefits of the related new freight traffic. The conversion of truck to rail traffic in reduced traffic volumes and carbon footprint are beyond the scope of this report, but are also potential and likely benefits that should be considered. There are possible ancillary benefits to the location such as removing the railroad from some existing roads and the new southeast connector and reducing traffic congestion. These benefits will require further work and coordination.

In addition, the team has performed a review of the next steps and actions necessary to move the project forward should the DMPO and the City of Des Moines decide to proceed. The proposed site conceptual plan has been developed to maximize the land location, railroad access and proximity to the Southeast Connector. The development and operation of Railport can be pursued in a variety of methods. These methods will be explored further in this Report. At this time, we are not estimating costs for site improvements such as paving, warehousing, security, etc. These are considered improvements that a private operator

(our recommendation) will perform to the site to accommodate their business demands and growth.

The Rough Order of Magnitude Cost (ROM) that follows has utilized our team's knowledge of construction costs in the region, as well as governmental published costs, where available. The estimated costs for Railport includes track, engineering, and contingency as well as a high level estimate of the fair market value of the land which includes 30 acres of City-owned property. The estimated value of the land is shown for informational purposes only as this is expected to be a non-cash outlay. This estimate is high level, and, therefore, subject to changes in the plan and other developments. The track cost estimate includes 20% in engineering costs and contingency

Rough Order of Magnitude of Cost

	Acres/ Track Feet	Estimate (in MM$)
Land	*30*	*$1.31*
Lead Track	4,500	1.35
Transload Track	6,700	2.01
Contingency	25%	0.84
Total	11,200	$4.20

There may need to be an environmental analysis performed for the site. Our team was not tasked with determining the level or scope of this assessment, so no costs or risks were identified for this potentiality. Since this is a former industrial and rail infrastructure site, the potential exists to perform a rapid environmental screening report (ESR). If an ESR cannot be used for the site, the more time consuming and costly approach is to prepare an environmental impact statement (EIS). In either case, these costs and time have not been factored into our ROM or schedule.

Market Overview

The first phase of this overall study started with a Market Analysis which was completed in the first quarter of 2014. It should be noted that the DMPO had also completed a study "Goods Movement in Central Iowa and in the Des Moines Metro Area 2006 Update Report"

as a step leading into this study. The Market Analysis included a physical survey of the shippers and commodities in the DMPO region, a survey of the existing rail transloads and their characteristics, and an assessment of Class 1 and Regional Railroad service, location and size. The Project Team also developed the following Goal, Strategy and Tactic for the Partnership to focus market assessment efforts:

Goal: Ensure economic growth for the City and Region through enhanced transportation infrastructure, if necessary,

Strategy: Develop an efficient multi-modal set of transportation options for Industries in the City and Region,

Tactic: Evaluate the feasibility and construction of a Transload Facility that supports the increased use of rail by providing competitive rail access to non-rail served Industries.

The first step in the project was to assess the existing and future market for rail logistics requirements in the region. Next, we determined whether the needs of existing and future rail-served businesses could be met with the existing infrastructure and, finally, we determined that the existing infrastructure does not meet existing or and future demands. This study, the "Rail Market Study" was completed in January, 2014 and is included in Appendix 2. This feasibility study completes the tactical step to develop recommendations for the facility design, estimate related costs and benefits of the facility and, finally, performs an economic evaluation to determine the overall cost/benefit to the DMPO and its stakeholders.

Demographics

Iowa is largely rural; the state population is 3.07 million. Des Moines, the state capital and the largest city, has a population of 203,433, while the Metropolitan Statistical Area of Des Moines – Suburbs (the Region) has a population of 590,000 or approximately 19% of the state's total population. Per capita income of $43,735 is approximately 107% of the national average and the Region's Gross Domestic product is $42.1 billion. While manufacturing represents 21% of the GDP of the State, it comprises only 5% of the Region's economy.

Des Moines' GDP is largely driven by the services sector (82%) with financial services in particular, including insurance, banking, and finance, driving the economy at 45%. Since the Des Moines economy is services driven, Des Moines is primarily a consumption point; the only significant existing manufacturing facilities are agricultural tires produced by Bridgestone/Firestone and farm implements manufactured by John Deere. Des Moines is a substantial consumption market which, in addition to consumer products, requires the basic commodities of any growing metropolitan area including Cement, Lumber, and Construction Materials. In addition, Feedstock and Agricultural supplies are required to support the regional farm economy.

Location

As shown in Figure 1 on the following page, Des Moines is at the crossroads of I-35, a primary NAFTA Corridor, and I-80 a northern tier Interstate which connects New York to San Francisco. This crossroad location is attractive for transportation companies and is a desirable terminal location. However, Des Moines is too close to challenge large national distribution centers in Kansas City, Minneapolis, Omaha and Chicago.

The Union Pacific and BNSF transcontinental mainlines run 30 miles north or south of the Des Moines area, creating a "remoteness" from the national rail network. The UP has a north-south mainline that runs through Des Moines, going to Minneapolis and Kansas City. BNSF must access the Des Moines via a running rights agreement with the NS. This is the end of the NS system.

Des Moines is prominently located within the Congressional High Priority Corridors and will benefit from future freight corridor investments as illustrated below in Figures 1 and 2.

Figure 1

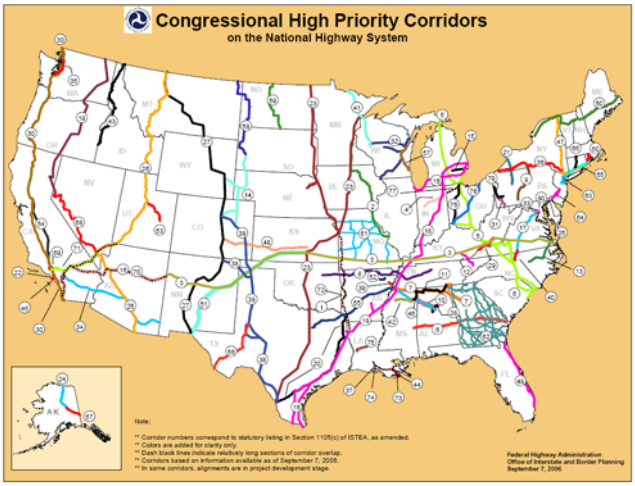


Figure 2

Business Environment

Iowa is home to a workforce that is highly educated and productive. Iowa is a Right–to–Work state which is attractive to many employers. Research and development tax credits are available along with tax increment financing. Iowa has a favorable tax structure which is especially attractive to manufacturing start-ups. There are no sales taxes or use taxes on machinery or equipment, no property tax on new industrial machinery and equipment, and no personal property (inventory) taxes. This favorable business climate will help Iowa support the burgeoning manufacturing renaissance in North America.

Transloading Overview

Transloading is a combination of marrying three disparate industries and their operational characteristics: trucking, warehousing (or storage) and rail. Each of these operations requires specific types of facilities and material handling equipment to be highly productive. Different commodities have varied material handling techniques, storage requirements, and truck loading requirements. In addition, some commodities do not mix well in one facility due to potential contamination and damage issues. In today's transportation environment the ability to load large trains quickly will translate into cost savings for the shipper. The ability to warehouse, store or stage product too quickly and efficiently load and "turn trains" is essential to economic competitiveness.

Railport is a brownfield site and is designed around the optimization of the rail service options, flexibility to accommodate the various transloading operations while working to be efficient with the capital construction costs facility. The Project Team's extensive experience in developing and operating transload facilities in other parts of the country has provided the background for developing this design. The facility concept was developed to accommodate the commodities that are identified as potential rail moves in Table 1. The facility will measure approximately 1500' by 600'. It has the potential to accommodate lay down areas for

long products such as steel I-beams and lumber bundles, room for a warehouse and rail docks, end ramps for equipment loading and unloading, and odd shaped areas for locating bulk product silos. With the addition of Railport, Des Moines and the Region will have much greater access to rail competition as well an enhanced national and global market reach.

Existing Rail Transloads.

Currently, there is only one rail transload located in Des Moines. This facility has certain limitations due to three key issues: 1) Limited Trackage, 2) UP Only Service, and 3) Limited Product Handling Capability. We have further described these current site limitations along with potential mitigating actions which may be taken to lift them in the table below:

	Current Site Limitations	Description	Mitigating Actions
1	Limited Trackage	The current site's lack of physical space, including rail to accommodate efficient shipments sized (e.g. unit trains or block trains)	Procure additional space and build additional track
2	UP Only Service	Lack of competition at the current site drives up rail rates.	Create competition by developing access to multiple Class 1 railroads
3	Limited Product Handling	The current location is only capable of handling one product, plastic pellets. The prospective rail traffic identified in the Rail Market Study includes other commodities	Develop the capability to handle products identified by the Rail Market Study.

For the existing transload, rail service is limited to a single Class 1 railroad (UP) which accommodates a single commodity. This limited service represents considerable constraints to the Region's shippers and create a cost disadvantage from a rail logistics perspective as further described below:

Type of Service to UP Transload: Due to the limited track space available, only block sized trains (of 20 cars) or manifest service (fewer than 20 cars) is available. In other words, no unit train service is available because unit size trains (100 cars) cannot fit into the facility. This prohibits the use of unit trains to reduce costs, in particular, for bulk commodities.

Single Serving Railroad: In order to serve the region in the most economical way, rail service provided by more than one Class 1 carrier is desirable as it can provide the shippers with leverage to reduce their rates with the railroad by creating competition as well as having direct service nationwide.

Multi Commodity: The facility is not a multi commodity transload. A general purpose transload can offer service to multiple industries and multiple commodities.

Transload Demand

Based on the rail transload facility which is currently available, the rail transload service infrastructure within Des Moines is limited and does not provide shippers with cost competitive rail transloadi

ng due to three key issues: 1) Limited Trackage, 2) UP Only Service, and 3) Limited Product Handling Capability. The two key success factors in developing Railport are capacity and competition. First, it is critical to Railport to ensure that it has sufficient capacity for shippers for the commodities and products that they would like to ship. Second, Railport must have strong rail competition which will introduce competitive rail rates and, to the extent possible, result in lower rail shipper costs. When a facility has access to only one railroad access, it is considered "closed" or "captive" and only that railroad serves the facility. When you "open" access, the serving railroad agrees to switch cars into and out of the facility for other railroads for a specific fee. A "dual" served facility is one where two or more railroads all provide service to the facility. It has been documented that a closed facility endures rail rates that are up to 100% higher than facilities that are "open" or have "dual" access. The proposed location of Railport is such that it potentially is both "open" and will be "dual" served. Shippers interviewed in the market study exhibited an interest a facility which would expand their access other Class 1 railroads (in particular, the BNSF and the IAIS/NS). In addition, shippers would require expanded material handling capabilities in addition to the existing plastic pellet capabilities of the current facility. This confirms that there is current interest for the Railport as proposed (see Rail Market Study in Appendix 2).

Construction Analysis

The proposed Railport is on property owned by the City of Des Moines. The property is approximately 30 acres and can be served by two railroads, BNSF and NS. In addition, the Iowa Interstate railroad and the Union Pacific railroad will be able to access the site through a reciprocal switch via NS. Figure 3 below shows the NS/BNSF Option for the Railport.

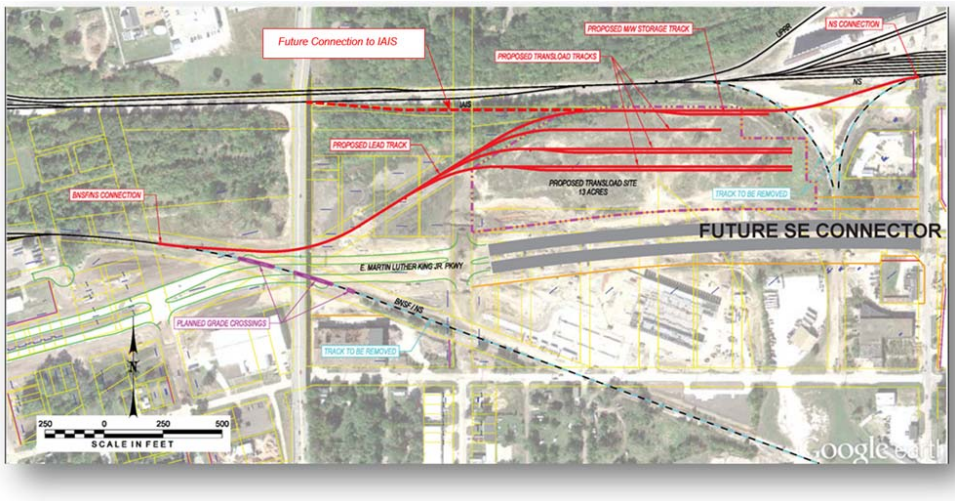


Figure 3 NS/BNSF Option for Railport

There may need to be an environmental analysis performed for the site. Our team was not tasked with determining the level or scope of this assessment, so no costs or risks were identified for this potentiality. This is a former industrial and rail infrastructure site, so the po-

tential exists to perform a rapid environmental screening report (ESR). The more time consuming and costly approach is to prepare an environmental impact statement (EIS). In either case, these costs and time have not been factored into our ROM or schedule.

The site of the facility is a level area that will require the normal site development criteria; detention ponds, setbacks, traffic studies, geotechnical evaluation, etc. The Project Team has not identified any major issues with the site at this time. These items will be required in preparation for any construction on the site. Due to the nature of the commodities identified in the Rail Market Study, and the timing of the diversion of those commodities from truck to rail transload, the Project Team is not recommending that site improvements, other than rail and entrances from existing public roads, be built at this time. This should be left to the third party transload operator that should be chosen through a competitive selection process.

Operational Analysis

The Railport facility will have the capabilities to provide enhanced service to the market through access to multiple railroads, sufficient trackage to accommodate unit and block train service, and material handling equipment to move multiple commodities. Currently, the majority of the traffic identified to move through Railport will be non-bulk traffic diverted from trucks. It is the Project Team's assumption that Railport will not be a direct competitor to the existing UP transload which is located farther north in Des Moines and is a bulk plastic pellet terminal. In addition, the new proposed transload is in an area the City has designated as future industrial development. Railport, as proposed in this Report, will be operated by an independent transload operator with service by railroads to be determined as the project is further developed.

The Project Team studied several options for the Railport location, operating plan and design. We have discussed the proposed options with representatives of the DMPO, and City of Des Moines elected officials and staff. In addition, we held discussions with local members of industry, and representatives from several railroads who serve the area including the BNSF Railway (BNSF), the Union Pacific (UP), the Norfolk Southern (NS), and the Iowa Interstate Railroad (IAIS). Railport is envisioned to be a multi-carrier served, central facility handling multiple commodities, and will be designed to expand as new business develops.

Railport is proposed for property shown below. Figure 4 is a site overview map and legend to locate the site within the greater Des Moines Region.

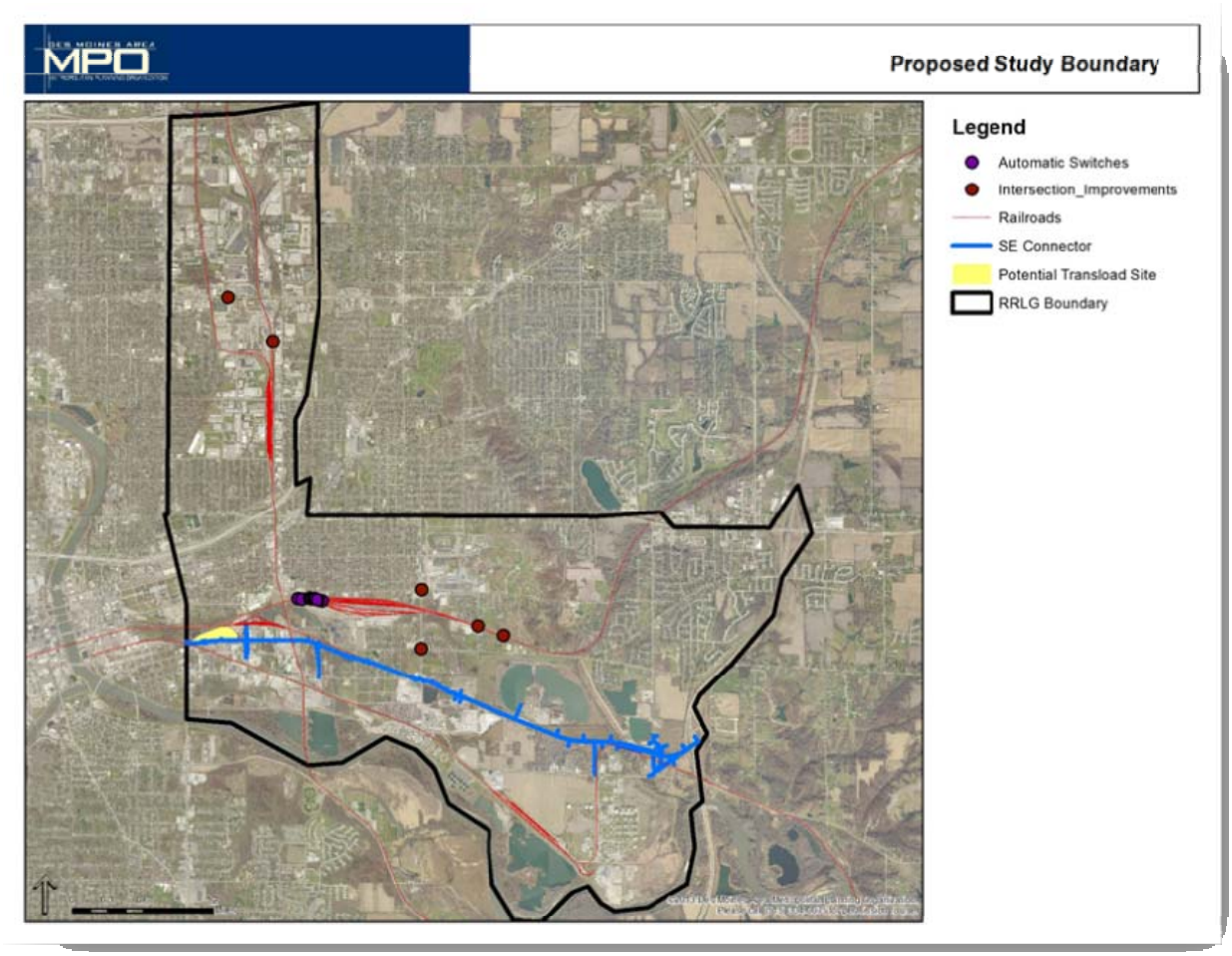


Figure 4 – Location of Proposed Railport within the greater Des Moines Region

Based on our discussions and analysis, the Project Team recommends the following conceptual Railport layout as a beginning point. The concept below is the "NS/BNSF Option and is shown in Figure 3 (which is repeated from page 10).

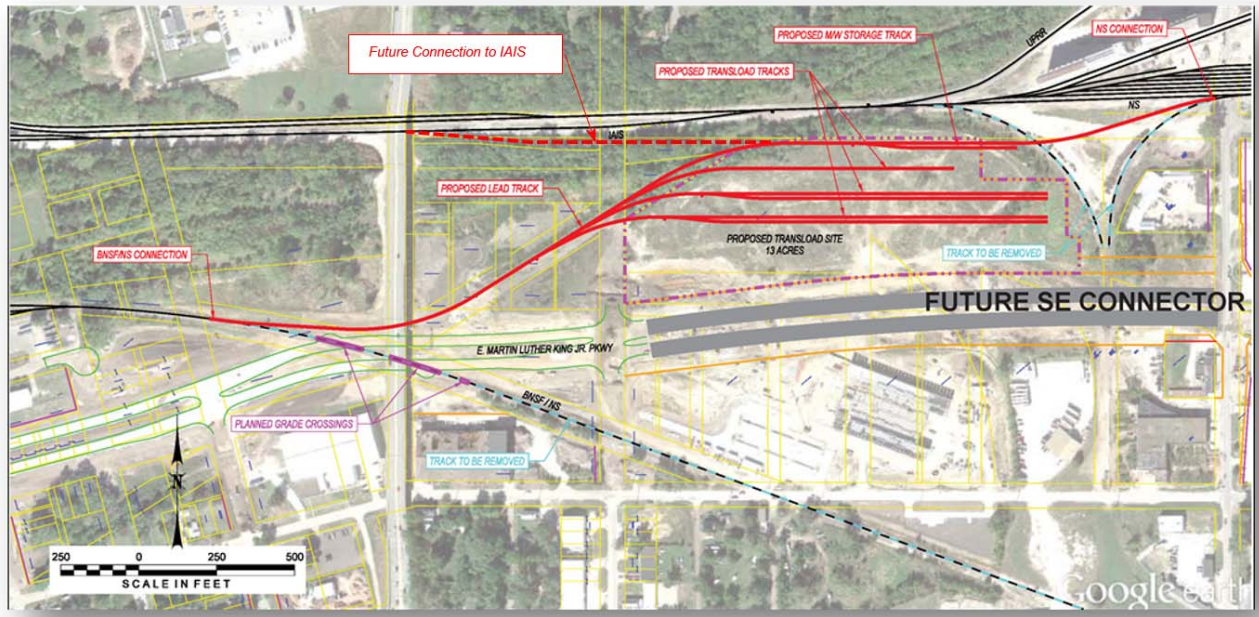


Figure 3 NS/BNSF Option for Railport (repeated from page 10)

Railport, as proposed, will receive direct service by NS and BNSF and will be able to access the IAIS and the UP via a reciprocal switch with the construction of a connection to the IAIS (further discussion and agreement between the railroads is required, but the dialogue has been opened). This will create rail competition which, as previously discussed, is highly desirable. Rail competition, where available, provides the following benefits:

1. Improves inbound and outbound reach for products for existing and future industries,
2. Increases competition, making region more attractive to shippers,
3. Lowers intercity truck traffic for products that are shipped via truck today, and
4. Reduces overall transportation carbon emissions

Of all the rail served locations in the US, only 22% have service provided by more than one Class 1 railroad. This rail service to the proposed site is unique since it has access to multiple railroads. Improving Des Moines infrastructure to include a facility which provides access to multiple Class 1 railroads makes the region more attractive to existing and potential new industries who are seeking new locations.

This site provides a logistics infrastructure option which can benefit a shipper's total delivered product costs. It is important to note that both inbound and outbound logistics costs are reduced by developing a Railport with competitive rail service and broad national and global reach. The increase in rail competition may provide other benefits as well including:

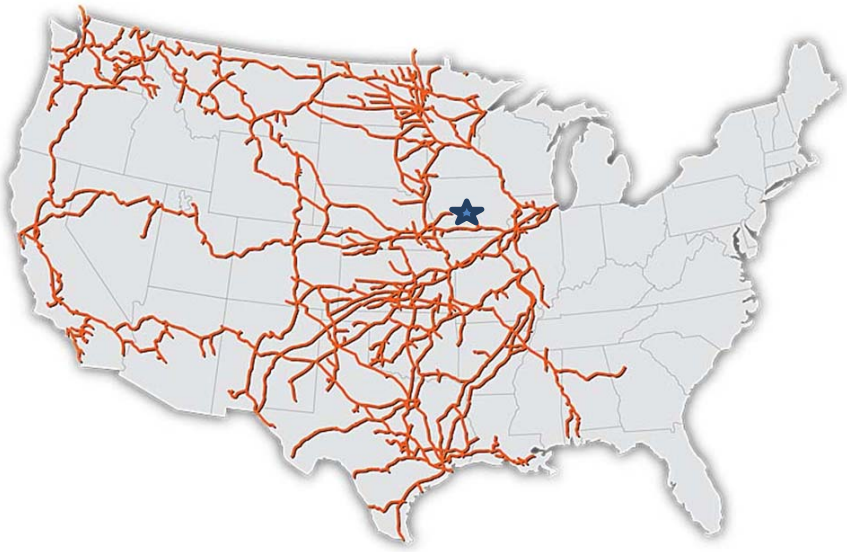
1. Making rail shipping more accessible, and, possibly, more attractive than trucking, as the origins and destinations options are greatly expanded.
2. Diverting truck traffic to rail may:
    a. Lower truck related emissions,
    b. Reduce wear and tear and related maintenance on the road and highway system,
    c. Reduce road congestion.

Railport's initial rail service will be provided by the NS and BNSF. In Des Moines, NS is the Agent for the BNSF and provides all customer switching in Des Moines and, as a result, any reference to NS in this report with respect to service by default also includes the BNSF.

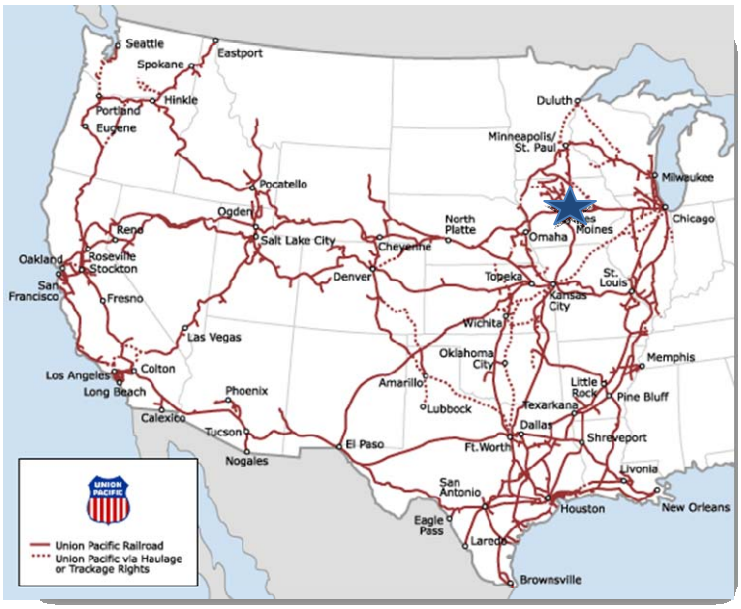
The NS will serve Railport directly up to five days per week as railcar volume requires. Cars will be delivered to the Railport based on an operating plan that is developed between NS and the future Railport Operator. The Operator will actually move cars around within Railport as required to sustain their operation. The UP and IAIS will also have access to the Terminal via a reciprocal switch agreement that is in place. As discussed, this could be enhanced later with the inclusion of a connection directly with the IAIS. Reciprocal switching is common in many terminals where a set fee is established to allow other railroads to gain competitive access to a facility. NS has indicated it will require track for its own use in the facility. There is a possibility that the existing at grade crossing of the SE connector can be eliminated, or at least not activated. Discussions with all four railroads have indicated a desire to move forward with this option, but continued work and dialogue is required.

The combination of the NS and BNSF network will provide access to the majority of the United States and East and West coast ports as well as the Gulf of Mexico. But, as indicated, even with this access, the locations where the facility may receive cars could be closed on either NS or BNSF. The inclusion of the reciprocal switch with IAIS provides competitive options for reaching the eastern US through a connection with the CSX Railroad in Chicago and the western US via interchange to the UP in Des Moines. Railport is, therefore, very well positioned with access to all four major Class 1 freight networks in the United States. This unique access will allow Railport to offer competitive service to existing Des Moines area shippers, as well as shippers within a 100 +/- radius of Des Moines. Maps of each railroad have been provided in Maps 1 - 4 as follows:

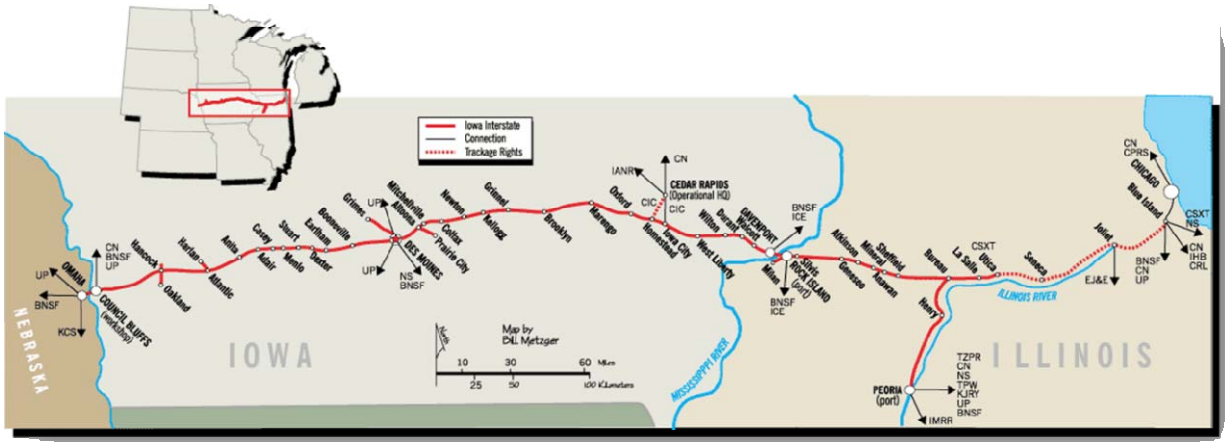
Map 1 - **Norfolk Southern Rail Network**



Map 2 - BNSF Rail Network



Map 3 - UP Rail Network



Map 4 - Iowa Interstate Rail Network

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Facility Usage Projections

Dr. John Hoegemeier, a well-respected authority on rail transportation movement analysis (See Appendix 3), developed a matrix of truck traffic that meets all the acceptable parame-

ters for truck to rail diversion. Some of the criteria utilized were; length of freight movement (the longer the better for rail), density of product (the heavier the better for rail), known capability to move commodity by rail and trucks (historically successful examples of transloading the commodity in other parts of the country), and the quantities consumed by one customer or by multiple customers in the region.

We based our estimates of Railport facility usage on our earlier Market Study completed in early 2014 (See Appendix 2). The Freight Analysis Framework (FAF) we reviewed integrates actual freight movement data from a variety of sources to create a comprehensive picture of freight movement among states and major metropolitan areas by all modes of transportation. This data is compiled from waybill samples from the trucking, rail, and maritime industries and is publicly collected by various Federal Agencies.

This data contains information from the latest year available at the time of the Commodity Flow Survey. Additional analysis has been performed on this data to produce the FAF version 3 (FAF^3), providing estimates for freight movements by tonnage and value, by commodity type, mode, origin, and destination for 2011 with forecasts through 2040. Also included are truck flows assigned to the highway network for 2011 and 2040. Because significant changes in method affect comparability of statistics, FAF and FAF^3 estimates may not be used together. The data utilized for trucking was from the State of Iowa. The best analytical data is research by market as well as having a team that has extensive experience in the Iowa freight network.

Table 1 provides a summary of the anticipated inbound diversion of long haul truck to rail that would utilize the new Railport based on the above criteria.

Table 1 - Anticipated Truck to Rail Diversion Shipments from Truck to Rail

Year of Operation	Annual Inbound	Daily Inbound	Annual Outbound	Daily Outbound	Total Trucks/Day	Total Trucks/Year
1	3,087	12	590	3	3,677	15
2	6,174	24	1,179	5	7,353	29
3	9,261	36	1,769	7	11,030	42
Total	18,522		3,538			

The inbound data is more robust than the outbound data since Iowa is a consumption area, especially for chemicals, minerals, and fertilizers. These are ideal commodities for a truck to rail conversion. Inbound volumes at the diversion rate approach 650 rail cars per year with a three year expectation of 2,000 rail cars per year. Currently, the outbound data in the region is a statistical volume which could contribute up to 250 additional cars per year. Combining

the inbound and outbound truck to rail conversions, starting with a minimum of a 5% diversion rate in Year 1, 10% in Year 2, and 15% in Year 3, we estimate the following rail cars volume for inbound, outbound and total in Years 1 – 3 as shown below in Table 2.

Table 2 – Estimated Annual Rail Carloads

Year of Operation	Annual Inbound	Annual Outbound	Total
1	686	131	817
2	1,372	262	1,634
3	2,058	393	2,451
Total	4,116	786	4,902

Capital Cost Evaluation

During the Conceptual Site Design process, the Rough Order of Magnitude (ROM) costs have been developed and are shown below.This conceptual design (see Figure 4) results in a Railport which mitigates the 3 key issues which limit rail at the existing rail transloading facility. First, the Railport will increase access to Class 1 railroads from one connection (the UP) to three (the UP, the BNSF, and the NS through a regional carrier, the IAIS). Second, the trackage of Railport will accommodate additional business, including unit and block train service unlike the existing transload facility which has limited track space. In addition, Railport will. Railport will also be scalable to add additional trackage as is warranted by new business. Third, Railport will be capable of handling products in addition to the existing transload's abilitiy (plastic pellets only) and will be scalable to add other material handling requirements as business warrants. In summary, Railport, with access to four railroads including three Class 1s, as well as trackage and material handling capabilities to support unit train service and multiple commodities, will be a facility with unique rail access and capabilities unlike most others in the country.

Our team has a good understanding of the local Des Moines geotechnical conditions and regulatory requirements. Our team has recently evaluated projects in the area and has local construction cost data to draw upon. This ROM has utilized our team's knowledge of construction costs in the region, as well as used governmental published costs where available. This estimate is high level, with many processes and decisions to be made. Continual review of the ROM costs and contingencies is required during the further development of the project and will begin to remove uncertainties.

Rough Order of Magnitude of Costs

	Acres/ Track Feet	Estimate (in MM$)
Land	*30*	*$1.31*
Lead Track	4,500	1.35
Transload Track	6,700	2.01
Contingency	25%	0.84
Total	11,200	$4.20

Land costs, while included in the table above, are not included in the total costs since the City of Des Moines intends to either contribute the land to the project, lease it to the Railport Operator, or to sell it outright. As such, this expenditure is not included from a capital requirement from the DMPO's or City's perspective. In addition, this budget does not include the purchase, construction, or capital lease costs of operating equipment, including transloading equipment which may be required to operate the facility.

Costs and Benefits to DMPO and City of Des Moines

The team has evaluated various opportunities for cost sharing and revenue generation from the Railport to the DMPO and City of Des Moines ("the City"). The City owns between 30 and 40 acres of land which may be used for the project which are not on the tax rolls to the project. The value of the land is estimated above at $1.31 million. The costs to develop the rail infrastructure is estimated a $4.20 million. There are several approaches which the City can use in structuring an agreement with the Railport Operator. One important consideration is whether the local and regional government sees a benefit to the DMPO or the City to keep ownership of the Railport land to ensure that, long term, Railport Operators have interests which align with those of the regional business community and government. Rail infrastructure is relatively permanent and, should the Railport Operator, not perform the DMPO or City should have power to replace the Operator. With this in mind, there are several contractual structures which may be explored as shown in Table 4 below.

Table 4 – Options for Investing in Railport

Railport Ownership and Operator Structures						
Option	**Land Ownership**	**Operator**	**Rail Infrastructure**	**Revenue share of $25/car**	**Cash Cost**	**Annual Cash Benefit Including Property Taxes**
					In millions $	
1	Sell to Operator for $1/sq. ft.	3rd Party	Develop and Lease	Yes	3.35	$0.125+proceeds of land sale
2	Lease to Operator for $0.10/sq.ft	3rd Party	Develop and Lease	Yes	3.35	$0.25
3	Sell to Operator for $1/sq. ft.	3rd Party	Operator Develops	Yes	0	$0.075+proceeds of land sale
4	Lease to Operator	3rd Party	Operator Develops	Yes	0	$0.25

Cost/Benefit Analysis to DMPO/City of Des Moines by Option

The required net investment and annual revenue for each of Options 1 - 4 described above for investing in Railport is summarized below. Depending on the objective of the DMPO and the City, all four options generate ongoing cash flows under the structures described above. Given the excellent potential for the facility, we anticipate that each Option would be attractive to a potential Railport Operator.

	Option			
	1	2	3	4
Proceeds from Land Sale	$ 1,310,000	$ -	$ 1,310,000	$ -
Investment in Rail Infrastructure	(3,360,000)	(3,336,000)	-	-
Net Investment	$ (2,050,000)	$ (3,336,000)	$ 1,310,000	$ -
Land Lease	$ -	$ 131,000	$ -	$ 131,000
Revenue share	50,000	50,000	50,000	50,000
Property Tax	$ 79,000	$ 79,000	$ 79,000	$ 79,000
Total Annual Revenue	$ 129,000	$ 260,000	$ 129,000	$ 260,000

Potential for Loan Funding

In order to secure funding for Railport, the DMPO and the City are currently pursuing a loan from the State of Iowa under the Railroad Revolving Loan and Grant (RRLG) Program for up to $2,000,000 to decrease the costs of the investment in rail infrastructure. Up to 80% of the project may be eligible for the loan, however, a 20% local match is required. Based on the Project Team's experience and the history of awards under this program, we estimate that the project may be awarded between $1,000,000 and $2,000,000 which would reduce the initial capital outlay accordingly. The DMPO, the City, railroads and private industry are all eligible for the loan, however the DMPO and the City will complete the loan application as a placeholder and incentive for potential Railport Operators who may bid through the RFP process for the terminal. Terms and annuals repayments are discussed below based on loan levels of $1,000,000 and $2,000,000.

We also recommend that the DMPO and the City continue their efforts to secure funding through the Iowa Rail Loan & Program. The terms of a loan related to the rail infrastructure are attractive at a 10 year straight line amortization term and 0% interest. If the DMPO and the City make progress in this area, they may be able to use the revenue projections developed above to provide security for the debt service of the awarded operator. The DMPO and the City could lease the developed property to the Railport Operator to ensure that the Operator meets performance objectives. Based on market rates of dual served rail property

and revenue share for transloaders who lease developed facilities, we estimate that the DMPO and the City could generate between $250,000 and $300,000 per year. This is more than sufficient to secure debt service to the State of $100,000 and $200,000 per year on $1,000,000 and $2,000,000 loans, respectively. In addition, the property itself and related infrastructure could serve as security for the loan. It is unclear at this time whether the DMPO and City will sell or lease the facility. Regardless, the DMPO and the City should continue their efforts with the State for the following factors:

1. The availability of capital at these terms may be attractive to the operator and potentially make the bidding for Railport more competitive,
2. The Operator may be interested in leasing the property vs. outlaying significant cash at its own cost of capital,
3. The cost structure of Railport will be lower which will be accretive to the rail competition which already exists,
4. The DMPO may further incent the Operator by "forgiving" revenue share, taxes, or the land lease to cover debt service.

We believe that this project, worst case, will not require any cash outlays from the DMPO or the City of Des Moines. Best case, we believe that Railport will generate revenues for the DMPO which may be used for debt service (should the DMPO choose to own all the assets of Railport). If the Operator is responsible for debt service, we believe Railport will generate sufficient revenue to cover private debt service.

Planning and Implementation Schedule

The development of a Planning and Implementation Schedule indicates that the start of construction will require a number of decisions to initiate the development of designs and approvals. We suggest that a meeting with regulatory bodies be held as soon as possible. This meeting will help us better define what to include and what to avoid in the development of the project to allow for rapid regulatory approval by spring 2015. We would then recommend that an environmental screening report be started concurrently with development of a 10% site design that will inform the environmental screening report if necessary. Consideration of pursuing design build teams will help the DMPO be operational as suggested in the proposed schedule below:

Task	Deadline
Finalize Railport Design	6/13/14
Application for IA Rail Loan & Grant	6/26/14
Draft Feasibility Study	6/30/14
Final Feasibility Study	7/11/2014
Iowa Rail Loan & Grant Award	8/31/2014
Iowa Rail Loan & Grant Approval	10/31/2014
Publish Notice of RFP for Railport Operator	11/30/14
Receive RFP Responses for Railport Operator	2/14/15
Award for Transload Facility Operator	2/28/15
Begin Site Design	3/31/15
Site Plan Submittal to City of Des Moines	5/31/15
Site Plan Approval	6/15/15
Begin Site Construction	6/30/15
Site Construction Complete	9/30/15
Begin Railport Operations	10/31/15

Coordination between many different parties including consultants, design firms, suppliers, contractors, regulatory bodies, potential customers and the railroad is required for the completion of this project. Our team has provided this level of coordination on other similar projects and will be able to continue to assist the DMPO as it moves forward.

Conclusion and Next Steps

The Project Team has completed the feasibility study for the Des Moines Railport based on a preliminary design, related estimated capital costs, operating structure, and other factors. We have concluded that the DMPO can design and build Railport which is served by multiple railroads and has broad global reach which will greatly improve Des Moines rail infrastructure. In addition, Railport will have little to no initial capital outlay for the local authorities, will be attractive to potential operators who may invest in the facility or lease it, and can generate revenue for the DMPO. Based on our work, the DMPO should continue the loan application process with the State of Iowa and develop a Request for Proposal to gauge interest and financial participation by potential operators.

Appendices

Appendix 1

Assumptions for Capital Cost and Revenue Generation

	Low	High
Acres	30	40
ft^2 per Acre	43,560	43,560
Lease $/ft2	$ 0.10	$ 0.10
ft^2 under lease	1,306,800	1,742,400
Lease Income	$ 130,680	$ 174,240
Cars per year	1,500	2,000
Revenue share per car	$ 25.00	$ 25.00
Total Revenue Share	$ 37,500	$ 50,000
Revenue share + lease Income	$ 168,180	$ 224,240
Property Tax	$ 78,962	$ 86,333
Total Revenue	$ 247,142	$ 310,573

Appendix 2

The Des Moines Metropolitan Organization

Rail Market Analysis

January 31, 2014

Engineered Rail Solutions, LLC

McCLURE ENGINEERING Co.

VIA RAIL LOGISTICS, LLC

Project Overview

The objectives of the Des Moines Metropolitan Organization, or "the DMPO" are to evaluate and support the development of cost-competitive logistics infrastructure projects in the community in order to meet the following four goals:

5. Improve the overall freight capacity and options in the metropolitan area,
6. Develop rail centric transportation options for existing businesses,
7. Expand existing transportation options to attract new industries to the region and support economic development, and,
8. Focus the southeast area of Des Moines to support Industrial Development, in particular its manufacturing base.

More specifically, the Project team has been tasked to perform a logistical and freight movement analysis of the DMPO's region. From this study, the volume and the value of potential freight will be determined, regardless of carrier or transportation mode. In order to meet this objective, the Project Team has worked closely with the DMPO to study the existing freight flows by mode into and out of the region as well as evaluating actions to increase rail-served freight options for the manufacturing base and new industries.

Market Overview

The first phase of the Market Analysis was a physical survey of the shippers and commodities in the DMPO region, a survey of the existing rail transloads and their characteristics, and an assessment of Class 1 and Regional Railroad service, location and size. The Project Team also developed the following Goal, Strategy and Tactic for the Partnership to focus market assessment efforts:

Goal:	Ensure economic growth for the City and Region through enhanced transportation infrastructure, if necessary,
Strategy:	Develop an efficient multi-modal set of transportation options for Industries in the City and Region,
Tactic:	Evaluate the feasibility and construction of a Transload Facility that supports the increased use of rail by providing competitive rail access to non-rail served Industries.

The first step in the project was to assess the existing and future market for rail logistics requirements in the region. Next, we determined whether the needs of existing and future rail-served businesses could be met with the existing infrastructure and, finally, if determined the existing infrastructure does not meet existing or and future demands, we will develop recommendations for next steps to ensure this market need could be met, including the type of facility services which will attract the identified commodities.

Overview of Des Moines and Iowa Market

Iowa is a largely rural state; the state population is 3.07 million. Des Moines, the state capital and the largest city, has a population of 203,433, while the Metropolitan Statistical Area of Des Moines – West Des Moines (the Region) has a population of 590,000 or approximately 19% of the state's total population. Per capital income of $43,735 is approximately 107% of the national average and the Region's Gross Domestic product is $42.1 billion. While manufacturing represents 21% of the GDP of the State, it comprises only 5% of the Region's economy. Des Moines' GPD is largely driven by the services sector (82%) with financial services in particular, including insurance, banking, and finance, driving the economy at 45%. Since the Des Moines economy is services driven, Des Moines is primarily a consumption point; the only significant existing manufacturing facilities are agricultural tires produced by Bridgestone/Firestone. That said, Des Moines is a substantial consumption market which, in addition to consumer products, requires the basic commodities of any growing metropolitan area including Cement, Lumber, Construction Materials, Feedstock and Agricultural supplies to support the regional farm economy.

As shown below in Figure 1, Des Moines is at crossroads of I-35 a primary NAFTA Corridor and I-80 a northern tier Interstate which connects New York to San Francisco. This crossroad location is attractive for transportation companies and is a desirable terminal location. However Des Moines is too close to challenge large national distribution centers in Kansas City, Minneapolis, Omaha and Chicago.

Des Moines is prominently located within the Congressional High Priority Corridors and will benefit from future freight corridor investments as illustrated below in Figure 2.

Figure 4 Source: Americansov.org

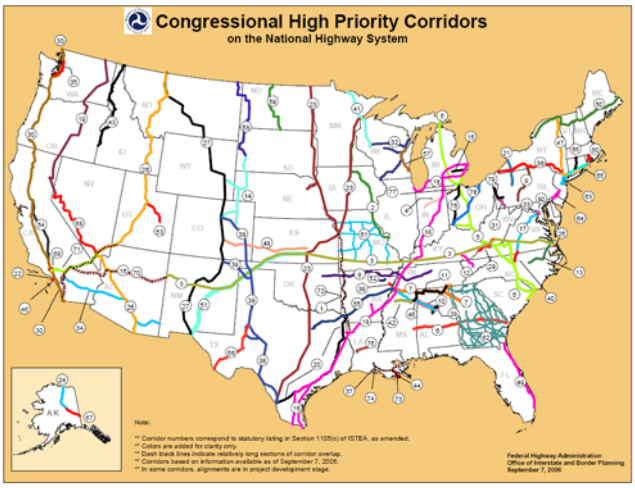


Figure 5

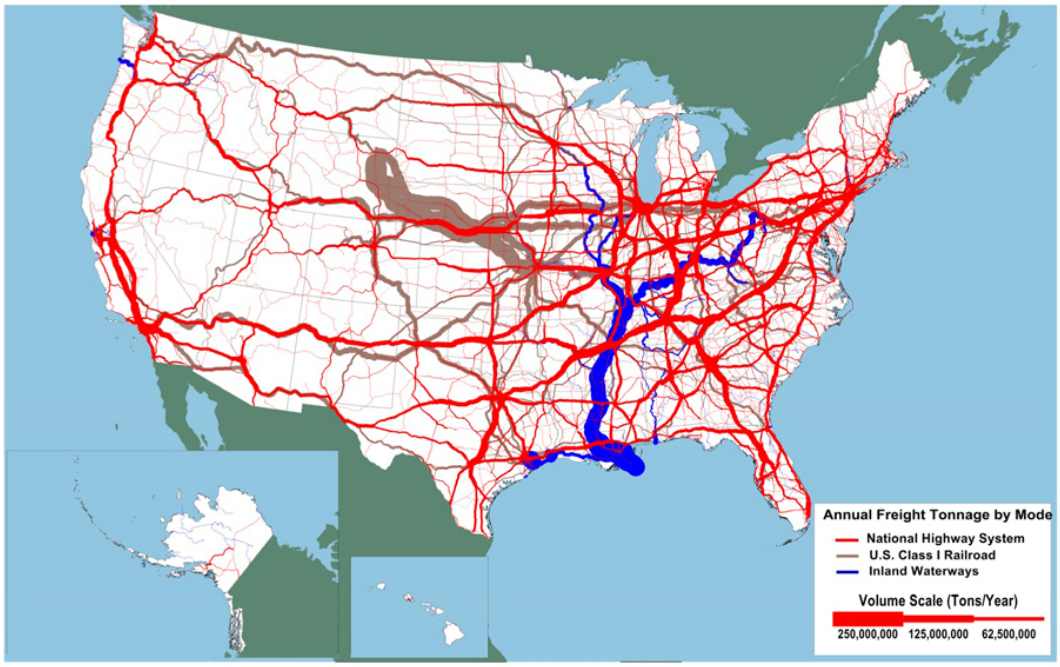
Iowa is home to America's best workforce that is highly educated and productive. Iowa is a Right–to–work state which is attractive to many employers. Research and development tax

credits are available along with tax increment financing. Iowa has a favorable tax structure which is especially attractive to manufacturing start-ups. There are no sales taxes or use taxes on machinery or equipment, no property tax on new industrial machinery and equipment and no personal property (inventory) taxes. These favorable business climate features will help Iowa support the burgeoning manufacturing renaissance in North America.

Current Infrastructure

The map on the below in Figure 3 illustrates tonnage and commodity flows along the U.S. highways, rails and waterways. Iowa is a critical state for long haul traffic, much of which passes through the state.

Tonnage on Highways, Railroads, and Inland Waterways: 2007



Sources: Highways: U.S. Department of Transportation, Federal Highway Administration, Freight Analysis Framework, Version 3.4, 2012. Rail: Based on Surface Transportation Board, Annual Carload Waybill Sample and rail freight flow assignments done by Oak Ridge National Laboratory. Inland Waterways: U.S. Army Corps of Engineers (USACE), Annual Vessel Operating Activity and Lock Performance Monitoring System data, as processed for USACE by the Tennessee Valley Authority; and USACE, Institute for Water Resources, Waterborne Foreign Trade Data, Water flow asssignments done by Oak Ridge National Laboratory.

Figure 6

Commodity movements are a response to changing economic conditions and must be supported by infrastructure which is cost competitive. Competitive infrastructure includes adequate service and capacities for the modes that are or could provide the Region's industries with transportation. Transloads rely on trucking service to connect users to the rail network.

It is important to understand how any transload location is connected to the local and state highway network. Transloads often act as a buffer allowing users to truck product to a facility where rail equipment can be loaded to maximum weight or cubic capacity loading configurations. Since most bulk commodities such as cereal grains, gravel, animal feed, coal or nonmetallic mineral products (Iowa's top commodities by tonnage) are sold by the ton, recognition of truck size and weight regulations, heavy haul and oversize dimensional load corridors are important considerations for facility location. The maps following in Figure 4 illustrates Des Moines designated truck routes and posted bridges.

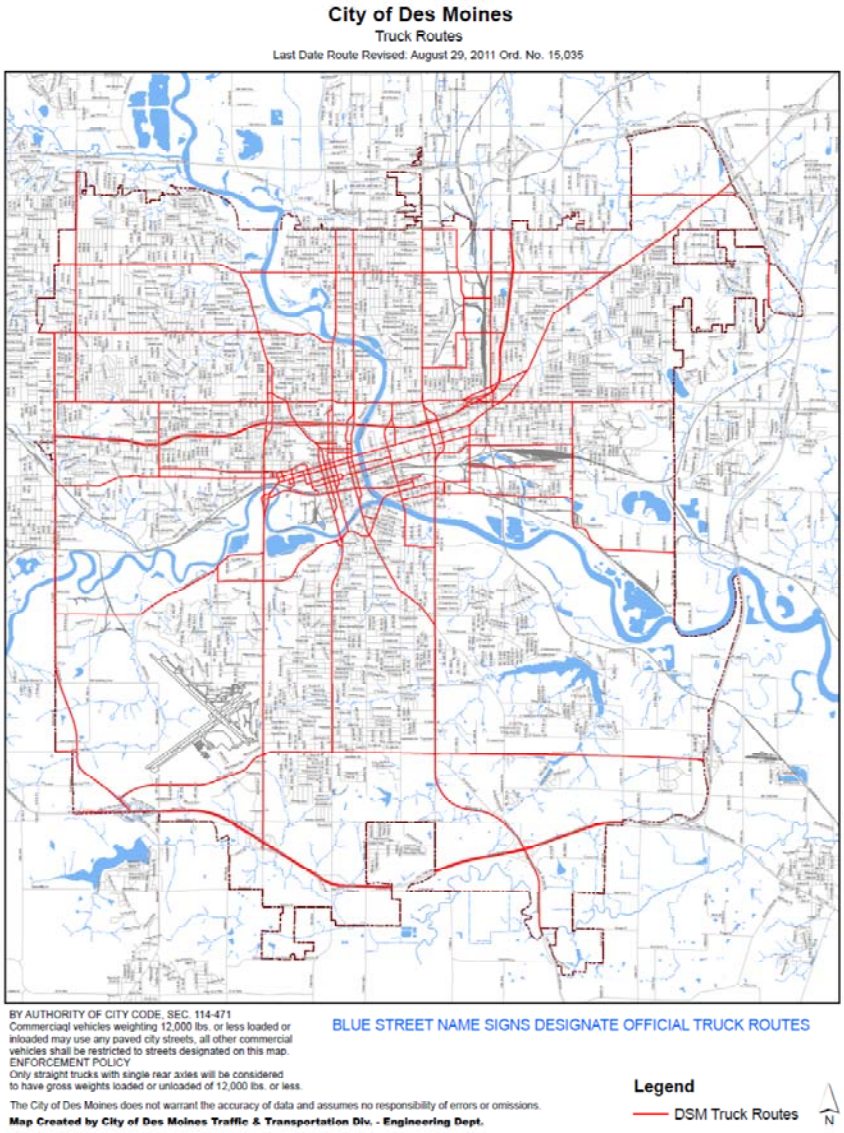


Figure 7

To understand the current rail transload infrastructure in the market, we evaluated the "As Is" state of rail to truck and truck to rail transload facilities in the Des Moines market, which

we expanded to include the entire state. Figure 5 above depicts the existing facilities throughout the state

Map of Rail Transloads – State of Iowa

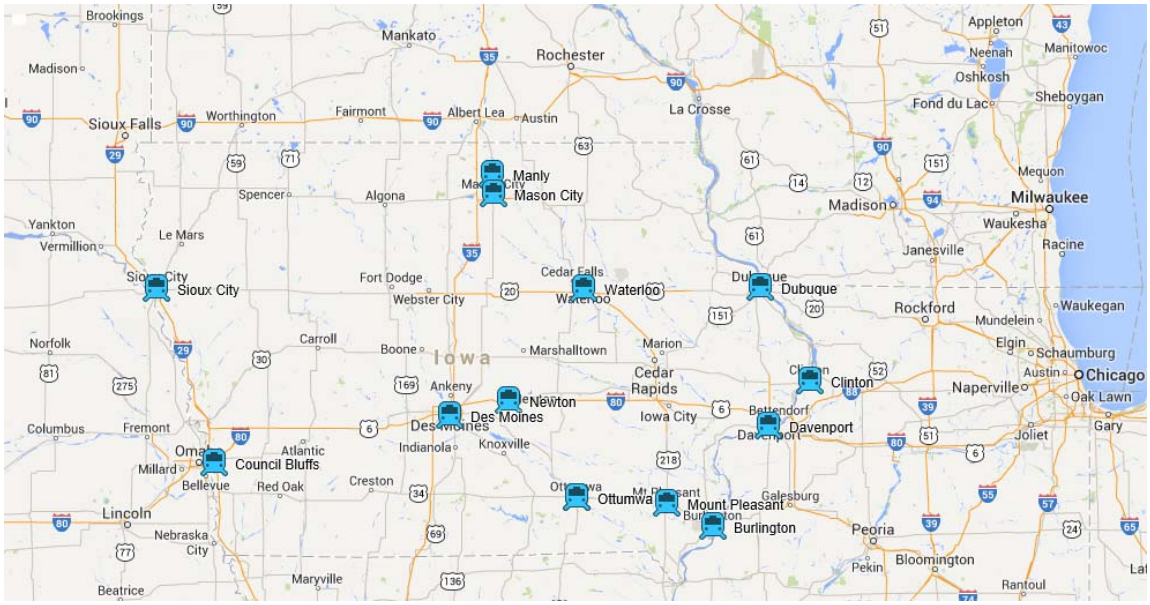


Figure 8

The characteristics of the rail transload facilities included in the map on the above are further described in Table 1 on the following page:

Summary of Iowa Rail Transload Facilities

Table 3

City	Rail Service	Distance	Car Spots	Commodity
Burlington, IA	BNSF	166 miles Southeast	N/A	N/A
Clinton, IA	Union Pacific (UP)	198 miles East	80	Bulk
Council Bluffs, IA	UP	130 miles West	N/A	N/A
Davenport, IA	Canadian Pacific (CP)	165 miles East	25	N/A
Des Moines, IA	UP	0	60	Bulk
Dubuque, IA	Canadian National (CN)	200 miles East	N/A	Bulk
Manly, IA	Iowa Northern	130 miles North	300	Bulk
Mason City, IA	UP/CP	120 miles North	N/A	Bulk
Mount Pleasant, IA	BNSF	135 miles Southeast	N/A	N/A
Newton, IA	Iowa Interstate	40 miles East	30	Bulk
Ottumwa, IA	CP	85 miles Southeast	N/A	N/A
Ottumwa, IA	BNSF	85 miles East	23	Bulk
Waterloo, IA	Iowa Northern	110 miles Northeast	15	Bulk
Sioux City, IA	BNSF/UP/CN	200 miles west	50	Food products

Currently, there is only one rail transload located in Des Moines. This facility has certain limitations due to three key issues:

1) Limited trackage is available for customers and shippers,
2) UP owns and serves the facility (no rail competition),
3) Single bulk product, plastic pellets.

These issues, the type of rail service available, the single Class 1 railroad (UP) which serves the facility and accommodation for only a single commodity all represent considerable constraints to the Region's shippers and create a cost disadvantage from a rail logistics perspective as further described below:

Type of Service to UP Transload: Due to the limited track space available, only block sized trains (of 20 cars) or manifest service (fewer than 20 cars) is available. In other words, no unit train service is available because unit size train (100 cars) cannot fit into the facility. This prohibits the use of unit trains to reduce costs, in particular, for bulk commodities.

Single Serving Railroad: In order to serve the region in the most economical way, rail service provided by more than one Class 1 carrier is desirable as it can provide the shippers with leverage to reduce their rates with the railroad by creating competition as well as having direct service nationwide.

Multi Commodity: The facility is not a multi commodity transload. A general purpose transload can offer service to multiple industries and multiple commodities.

Based on the rail transload facilities which are currently available, the rail transload service infrastructure within Des Moines is limited and does not provided shippers with cost competitive rail transloading.

Rail Service Fundamentals.

The next step in our study evaluated the "as is" traffic flows by mode into and out of the market. Consideration of the type of commodities that will use and be attracted to a multi carrier served transload facility is critical to develop a design and operating plan. In parallel, it is important to know the commodity volumes to design the correct layout with adequate storage and switching capacity. Too little capability to handle a certain commodity might cause delays in unloading railcars and service degradation for the shipper and the serving Carrier. Long term service degradation and capacity constraints will reduce the attractiveness of the facility to potential shippers. This study, completed in early 2014, summarizes current commodity distribution patterns and facilities in Des Moines and develops potential options for the Partnership to consider to meet its objectives.

When a facility has only one railroad service and access, it is "closed" or "captive" and only that railroad will provide rates and service. When you "open" access, this allows multiple railroads the ability to offer service to a facility and generate a broader market reach and the possibility of competitive rail pricing. Although railroads freely interchange traffic amongst themselves nationwide, when multiple rail carriers are involved in the "line" movement of a railcar, the overall rail shipping charges are historically higher and service levels are historically reduced due to extra handling of the railcar. This combination results in higher costs to the shipper, both for the rail charges and additional inventory carrying costs while the rail car is in transit. With a fixed fee to switch railcars into an "open" facility, railroads can offer much quicker pricing and competitive service for their customers.

Transloading Design Fundamentals

The New Transload Facility (NTF) is a greenfield site. We recommended that its design optimize the three operations of three different industries, rail, trucking, and warehousing and considers the overall capital and operating costs of the facility. Discussions with the four serving carriers in Des Moines on a reciprocal switch arrangement must be conducted to determine interest in serving a multi carrier served facility and how the service will be performed, i.e., who will do the actual switching of the facility and where will railcars be interchanged and for what Fee. The Project Team's extensive experience in developing and operating transload facilities in other parts of the country provides the background for developing a successful design. Ultimately, the design proposed to the Partnership will be guided by the research contained in this report, identifying the commodities and their volumes most likely to use the facility.

This report is to provide an overview of the market conditions. There are also additional considerations in combination with the market analysis which drive the facility's design. Some of these additional items are:

- Integrating the objectives of the DMPO,
- Developing an understanding of criteria and tradeoffs in commodity handling and facility design,
- Reviewing commodity shipping patterns for industries in DMPO region,
- Identification of user support, seasonal shipping patterns and total expected volume throughput.
- Potential funding partnerships
- Identifying the critical physical constraints and infrastructure (including surrounding highway capacity, weight limited bridges and bridge condition, height and turning radius requirements and signaling for highway access) requirements of the facility,
- Assessing the integration of the different rail layouts onto the site,
- Developing agreement with the rail carriers serving the Region on allowing open access to the facility
- Reaching agreements on service and pricing for switching
- Reviewing Railroad switching criteria,
- Reviewing support facility needs.

One of the key elements of a successful rail transload facility is that, where possible, it is not captive to a single railroad. A well known study "Regulatory and Legislative Developments and Opportunities Involving Shippers, Railroads, Surface Transportation Board, and Other Federal Agencies," completed by CURE and presented to the Southeast Association of Rail Shippers in Savannah, GA in March 2011 shows that the cost of being captive on one railroad in many cases doubles the rail freight rate, creating significant competitive disadvantages to converting truck to rail-truck through a transload. The Project Team's experience suggested that a multi carrier served transload facility is the optimal option if the Des Moines Rail Transload facility is to grow and prosper. This is shown in Figure 10 below.

Figure 9

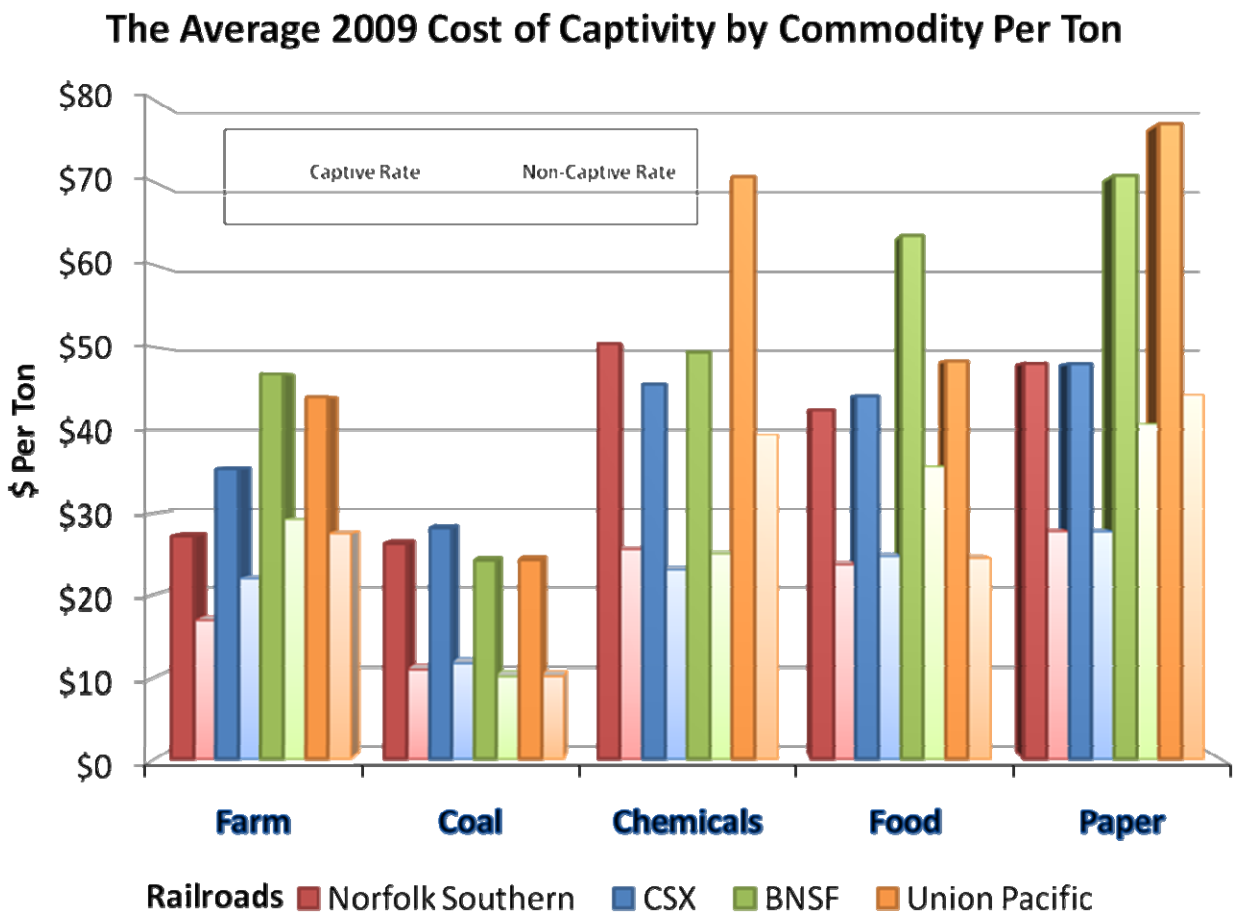


Figure 10

Source: CURE

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To the extent possible, Railport should encourage rail competition into the facility among the railroads in the region in order to ensure the broadest reach between potential markets and to encourage competitive rail rates by the serving carriers.

Rail Market Evaluation

A variety of processes to determine potential rail movements that may use Railport were utilized to develop this report. Identifiable traffic volumes were quantified through use of truck movement data obtained from the Department of Highways. Checks and balances on various forecasts were included to provide a report that anticipates market conditions as they exist at the time the report was developed.

The processes used to develop the market analysis in this report include:

- Visual Inspections
  - Visually inspecting distribution facilities
  - Review other available transload facilities in the region

- Interviews and Surveys
  - Interview distribution businesses for potential truck to rail diversion
    - Farm implements
    - Lumber yards
    - Concrete consumption
    - Steel products
  - Interview manufacturers with serving railroads to determine local needs for additional transportation
  - Interview local transportation experts

- Historical Freight Movement Analysis
  - Utilize Freight Analysis Framework data to analyze market data on the potential market shift from truck to rail

Visual Inspections

The first phase of the review, often referred to as "just driving around," provides a good starting point for this study. Although the majority of data regarding what has been shipped in the past and by what transportation mode can be found in various databases, this step allows for a better understanding of the local economy and its industrial network. Computer data cannot show the interconnectivity of industries, such as steel distribution centers supplying steel to local fabricators that use the raw steel to create sub-assemblies for use by local manufacturing firms. The Des Moines region has largely a service economy. In order to support the diversification of the economy, the DMPO is interested in addition of a new transportation option for existing and future shippers. The City of Des Moines is also very interested in adding a new transportation option for existing and future industrial companies.

Interviews and Surveys

The Project Team performed a statistical analysis of truck shipments in the region. In addition, we interviewed a variety of experts in the region including members of the regional Economic Development Corporation, members of Industrial Development firms, representatives from Consulting Engineer firms and members of the local Chamber(s) of Commerce. Based on these interviews, we were pointed toward certain shippers. We interviewed these shippers regarding the materials they shipped, their satisfaction with their existing rail service and, what changes, if any, they would request to the regional rail infrastructure, in particular, a rail to truck transload facility.

The DMPO provided the Project Team with a summary of the top 100 employers in the region. Using the list as a starting point, the Project Team performed telephone surveys with the employers who are either existing or potential rail shippers. Of the several discussions we had, only one employer, John Deere, showed significant interest in a facility (as described below). Two other employers, Titan and Bridgestone, indicated to us that they are not a good candidate for rail transloading because their process is too labor intensive. Several calls and contacts are still open and the Project Team will continue to evaluate the market for interested candidates for the facility.

The result of these personal interviews was an excited interest in the ability to utilize a rail to truck transload facility by John Deere, especially one that will be served by competing railroads. The results of our interviews are summarized in the table below.

Customer-Specific Research

Shipper	Materials	Status	Requires New Rail?
Bridgestone/Firestone	Outbound tires/Inbound Feedstock	Pleased with existing service	No
John Deere/Des Moines Works	Finished goods for domestics and export via Galveston/Baltimore	Interested in BNSF Service or IAIS/NS	Strong Possibility
Inbound	None Noted	N/A	N/A

Historical Freight Movement Analysis

The Freight Analysis Framework (FAF) integrates actual freight movement data from a variety of sources to create a comprehensive picture of freight movement among states and major metropolitan areas by all modes of transportation. This data is compiled from waybill samples from the trucking, rail and maritime industries and is publicly collected by various Federal Agencies. See appendix for further details.

This data contains information from the latest year available at the time of this report, the Commodity Flow Survey. Additional analysis has been performed on this data to produce the FAF version 3 (FAF^3), providing estimates for freight movements by tonnage and value, by commodity type, mode, origin, and destination for 2007 with forecasts through 2040. Also included are truck flows assigned to the highway network for 2007 and 2040. Because significant changes in method affect comparability of statistics, FAF^3 and FAF^2 estimates may not be used together. The data utilized for trucking was from the State of Iowa so the level of granularity is difficult statistically. As such, the best analytical data is research by market as well as having a team that has extensive experience in the Iowa freight network.

Dr. John Hoegemeier, a well-respected authority on rail transportation movement analysis, developed a matrix of truck traffic that meets all the acceptable parameters for truck to rail diversion. Some of the criteria utilized were; length of freight movement (the longer the better for rail), density of product (the heavier the better for rail), known capability to move commodity by rail and trucks (historically successful examples of transloading the commodity in other parts of the country), and the quantities consumed by one customer or by multiple customers in the region. Currently, the outbound data in the region is a statistically minimum volume which could contribute up to 250 additional cars per year. The inbound data is more robust than the outbound data since Iowa is a consumption area, especially for chemicals, minerals, and fertilizers. These are ideal commodities for a truck to rail conversion. Volumes at the minimum diversion rate approach 650 rail cars per year with a three year expectation of 2,000 rail cars per year. Combining the inbound and outbound conversions, starting with a minimum of a 5% diversion rate in Year 1, 10% in Year 2, and 15% in Year 3, we estimate the following rail cars volume for inbound, outbound and total in Years 1 – 3 as shown below in Table 2.

Table 4

Annual Rail Cars	Inbound	Outbound	Total
Year 1	686	131	817
Year 2	1,372	262	1,634
Year 3	2,058	393	2,451

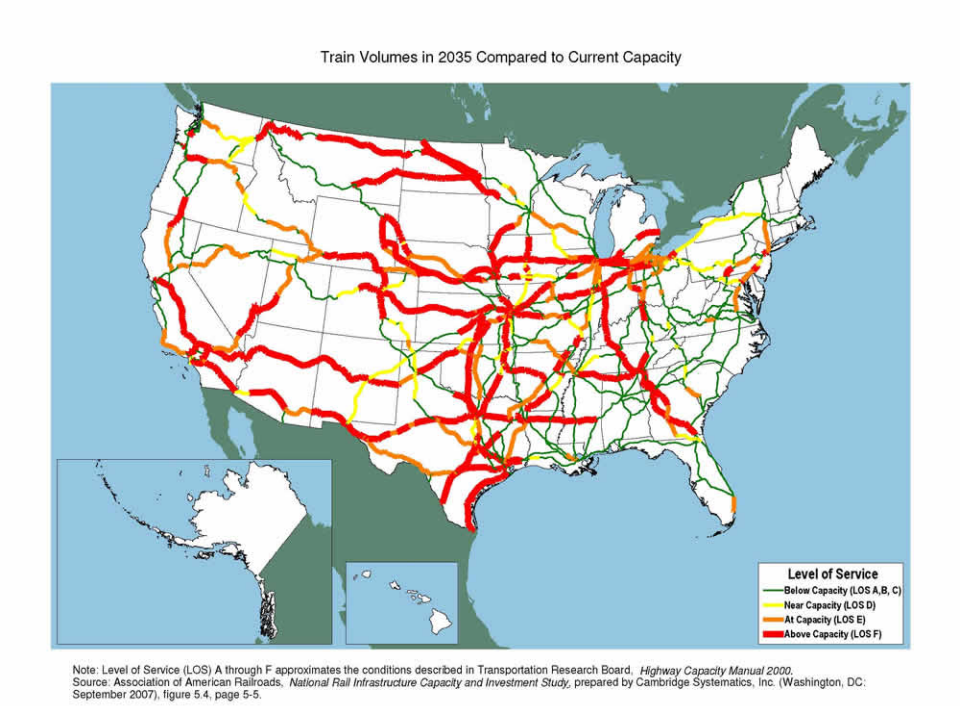
In addition, there have been significant inquiries into the movement of containers direct to Des Moines instead of being trucked from Chicago, Kansas City or Omaha. The US Freight Railroad Intermodal/Container network is a series of large terminals on the West coast op-

erating trains from Los Angeles, Oakland and Tacoma to distribution centers in Omaha, Kansas City, Dallas/Fort Worth, Chicagoland and Minneapolis/St Paul. These trains are up to 10,000 feet in length. At destination distribution centers, the containers are normally trucked out up to a 250250 mile radius*(per Vann Cunningham BNSF). However this catchment areas can vary based on size and weight of container, chassie ownership and availablity and new hours of service laws. The greatest rail efficiencies are the ability to run point to point without stopping en route at small terminals. Also, the containers are loaded to a destination market on five-pack cars that have 10 containers per car. This efficient design allows for the best utilization of equipment, assuming all containers are loaded to conforming interstate weight levels. When ag backhauls are loaded to 57,000 lbs per container this weight can cause rail carriers to match up empties with overweight loads in each well of the stack train car. .

Even if there were equipment and capacity at a Transload Terminal in Des Moines for containers, it would be very inefficient and, therefore, expensive, to try and stop one of the large trains to set out one car for local delivery. This is due to the fact Des Moines is not on either the UP or BNSF mainlines from the west coast to the Midwest. An "out of route" movement would have to be made to stop in Des Moines. Another option is to move a container from a terminal such as Chicago or Kansas City via local train service to an area like Des Moines instead of trucking it. This would take several days to move and be much more costly than the existing truck drayage rates. The railroad's intermodal model is designed to move a large train to a destination distribution terminal and have containers trucked to local destinations. This is the most efficient mode as well as the lowest cost. In this analysis, containers being unloaded in the proposed facility are not being considered as it is not in either the Union Pacific or the BNSF Railways operating plan.

The map on the following page (Figure 7) represents a forecast of 2035 projected rail volumes and the current rail capacity. By 2035, the forecast for available Class 1 rail capacity in Iowa will be extremely constrained in all but the southeastern portions of the state. This means that any switching activities or train movements which would slow, delay or stop through train movements would have a very negative impact on the railroad operations. During these constrained conditions most rail carriers will require unit train assembly and movement to access the rail market.

Short lines can help Class 1 carriers increase efficiency by gathering freight and aggregating individual carload shipments into more efficient blocks of traffic, which reduces Class 1 carriers time switching individual freight industries.



Note: Level of Service (LOS) A through F approximates the conditions described in Transportation Research Board, *Highway Capacity Manual 2000*.
Source: Association of American Railroads, *National Rail Infrastructure Capacity and Investment Study*, prepared by Cambridge Systematics, Inc. (Washington, DC: September 2007), figure 5.4, page 5-5.

Figure 11

The rail network has relied on the lessons learned from the airline industry, a few large central hubs that then have feeder airlines serving the smaller markets. In the case of rail intermodal, the railroads serve the large intermodal hubs and trucks serve the smaller markets. Each industry is then utilized to its maximum efficiency. Direct intermodal service to Des Moines would more expensive than the current intermodal/drayage combination due to the reduced volumes and higher rail service costs. While not the answer desired, the free market has developed the most cost effective solution for moving containers into Des Moines.

In order to gain an understanding of the types of product which have moved via rail into the Des Moines region, the Project Team reviewed historical rail moves by car type to gain an understanding of the rail equipment that rail movements have utilized. The results of this review are summarized in the table below:

Rail Shipments by Equipment Type
Des Moines Metropolitan Area

Box Car	13%
Bulk	66%
Flat Car	21%

Rail movements have largely been bulk commodities, such as cement and fertilizer and excludes many of the smaller, high value consumer goods. This is consistent with what we would expect for Des Moines service based economy.

Facility Design Parameters

One of the key success factors in developing the DMPO NTF is to ensure that it has sufficient capacity for shippers for the commodities and product that they would like to ship. must have strong rail competition which will reduce rail rates and, to the extent possible, keep shipper rail costs competitive. When a facility is built and has access to only one railroad access, it is “closed” or “captive” and only that railroad serves the facility. When you “open” access, the serving railroad agrees to switch cars into and out of the facility for other railroads for a specific fee. This allows one railroad to ship it on its own rail lines to the interchange yard of the serving railroad. With a fixed fee to switch into the facility, railroads can offer much quicker pricing and service for their customers.

The proposed NTF is on property owned by the City of Des Moines. The property is approximately 28 acres and can be served by four railroads, UP, BNSF, NS, and the Iowa Interstate railroad. The existing UP facility is primarily a bulk plastic pellet terminal that is not a direct competitor with the new proposed terminal. In addition, the new proposed transload is in an area the city has designated as future industrial development. The new transload will be operated by an independent transload operator with service by railroads to be determined. The site could be direct served by all railroads or by one that agrees to provide equal access to the other railroads. The Iowa Interstate is very interested in being the primary serving railroad.

Transloading is a combination of marrying three disparate industries and their operational characteristics: trucking, warehousing(or storage) and rail. Each of these operations requires specific types of facilities and material handling equipment to be highly productive. Different commodities have varied material handling techniques, storage requirements, and truck loading requirements. In addition, some commodities do not mix well in one facility

due to potential contamination and damage issues. In today's transportation environment the ability to load large trains quickly will translate into cost savings for the shipper. The ability to warehouse, store or stage product to quickly and efficiently load and "turn trains" is essential to economic competitiveness.

NTF is a greenfield site and should be designed around the optimization of the three operations and in consideration of the overall cost of the facility. The Project Team's extensive experience in developing and operating transload facilities in other parts of the country, has provided the background for developing this design. Ultimately, the design which will be proposed to the DMPO will, among other things, be guided by the research contained in this report including identifying the commodities and their volumes most likely to use the facility. An initial, high level facility design shown on the following page as Figure 8, is based on the results of the market analysis. The facility is designed to accommodate the commodities that are identified as potential rail moves in Table 1. The facility will measure approximately 1500' by 600' in size. It will include infrastructure including side ramps and an end ramp for both box car and flat car loading. Any required bulk commodity loading may be performed on an open track alongside the railcar.

Figure 12 – Site Design

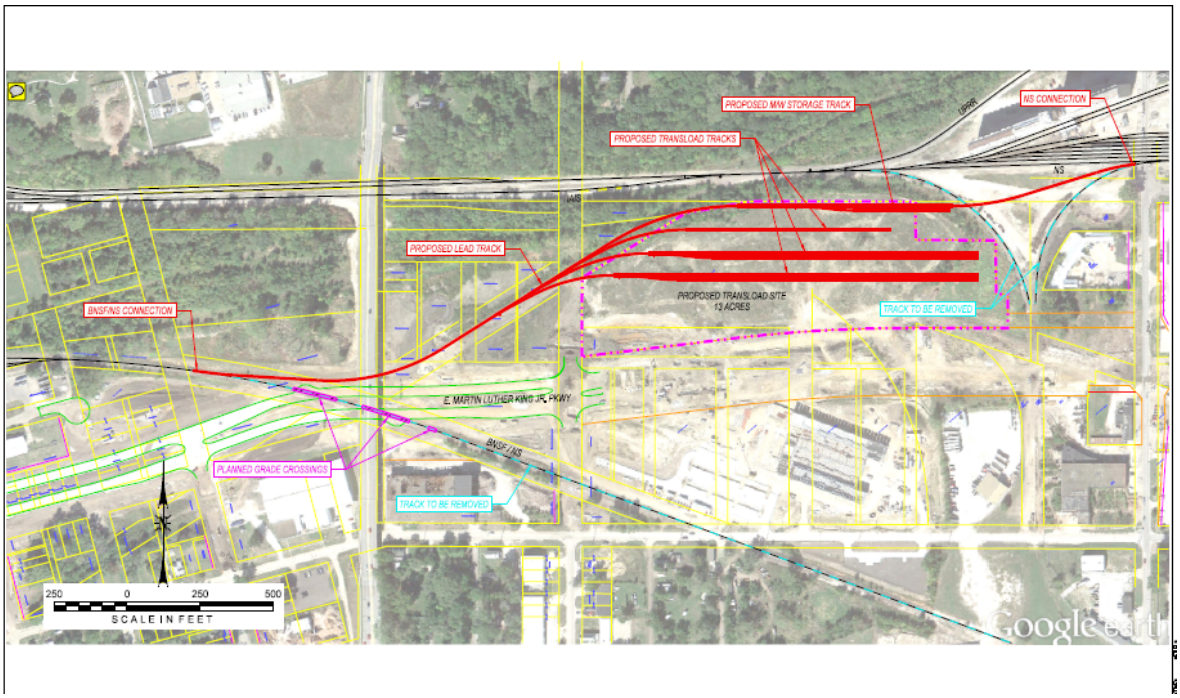


Figure 13

Pre Market Analysis Conceptual Design for Des Moines, for exhibit purposes only

The proposed facility design will be revised in the next phase of the project. Potential neighborhood impacts and suggested mitigation options will also be discussed.

Conclusion and Next Steps

The Project Team has completed a logistical and freight movement analysis of the DMPO's region. In the study, the volume and the value of potential rail freight has been determined, freight flows by mode into and out of the region were studied, and existing rail transloading facilities were surveyed in order to evaluate actions which could increase rail-served freight options for the existing manufacturing base as well as new industries. Based on our analysis, we believe there is a potential market for expanded rail transloading options in the region. This "new" rail market includes truck to rail diversions, including significant rail-served business with John Deere. In order to develop a cost competitive "long term" solution, we conclude that the Des Moines region should move ahead with defining the type of facility that best suits the potential traffic mix in the development of a cost-competitive transloading facility (NTF).

Appendices

Freight Analysis Framework Data

The table below illustrates that rail has approximately 14% of the 2010 total freight tonnage and anticipated an 11.2% growth in tonnage by 2040. Truck is still the dominant mode in Iowa and handles about five times the tonnage which is moved by rail. Iowa's top five outbound domestic trading partners are Minnesota, Illinois, Louisiana, Texas and Nebraska. The top five states which send tonnage to Iowa include Wyoming, Illinois, Minnesota, Nebraska and Wisconsin.

The current highway network will not be able to handle the truck growth over the next thirty years given present levels of investment. Establishment of more rail access points will help rail transportation increase market share over the next thirty year period.

Iowa freight flows, 2010 vs. 2040 (millions of tons)

Mode	2010	2040	Percent change
Truck	360.1	514.2	42.6
Rail	65.2	72.5	11.2
Water	6.9	9.7	40.5
Air (including air-truck)	0.02	0.03	50.0
Multiple modes and mail	13.2	16.4	25.0
Pipeline	5.9	5.9	0.5
Other	1.5	1.7	14.0
Total	**453.2**	**620.4**	**36.9**

Source: Freight Analysis Framework, FHWA

Table 5

Appendix III

John J. Hoegemeier, PhD.
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www.sdfreightrail.com
Principal John Hoegemeier
BS Chemical Engineering – Illinois Institute of Technology
MBA – Cal State Long Beach
PhD Transportation Economics – UC Irvine

General Background
Areas of expertise and experience include economic assessment and cost-benefit analysis, petroleum industry supply chain analysis, transportation costing analysis, grant and loan applications, engineering assessments and capacity studies, operating plans, risk analysis for freight operations, land use planning issues related to rail transportation, community impacts from transportation projects and environmental assessment, strategic transportation planning, and local agency and government interaction.

Specific Areas of Expertise and Experience

Economic assessment and cost-benefit analysis.
Wrote a detailed paper on the benefits of Port and rail infrastructure in diverting truck traffic from San Diego area freeways. Designed and interactive spreadsheet with associated documentation to determine the impacts to regional highways of short line railroad abandonment, or the failure to upgrade short lines to support 286k rail cars.

Petroleum pipeline netback analysis
Wrote a detailed report with an accompanying model on crude oil pipeline netbacks for determining competitive routings for crude by rail in a dynamic pricing environment.

LPG supply chain costing analysis
Provided detailed pricing and capacity analysis for LPG exports into Mexico for multiple clients. Work included detailed strategic plans and an interactive supply chain model to evaluate export options in a changing pricing market.

Rail cost analysis.
Rail costing experience using the Surface Transportation Board's Uniform Rail Costing System. Data and inputs for short lines were added to the program database for greater accuracy in determining relative costs. Analysis for specific moves using marginal and allocated costs has also been performed.

Risk analysis.
Performed grade crossing risk analysis for short line railroads using FRA data and software, designed interactive spreadsheets to determine relative benefit of track improvements in preventing derailments, and evaluated the relative risk of hazardous material movements using different truck and rail routings.

Engineering assessments, operating plans, and capacity analysis.
Provided preliminary evaluations of capability to handle 286,000 lb. rail cars using accepted research by the American Short Line and Regional Railroad Association, and using track software used by the US Army Corps of Engineers.
Conducted preliminary capacity analysis using parametric analysis of mainline capacity using interactive spreadsheets to determine incremental capacity from specific projects.

Assisted in developing operating plan to support daily 7 hour closure of LOSSAN Corridor during Del Mar Bluffs project, while maintaining full freight service.
Wrote feasibility study for unit vehicle train moves into the Port of Grays Harbor, WA.

Land use planning, community impacts, and environmental assessment.
Provided input to regional general plans and community plan updates. Conducted train noises assessments for projects in San Diego and National City.
Conducted a health risk assessment for a proposed project adjacent to a short line rail yard using accepted guidelines and software from the California Air Resources Board.

Strategic planning
Conducted a detailed study on existing conditions for freight rail in San Diego and California. Recommended specific projects to expand capacity based upon existing markets and projected growth.

Provided inputs to the regional freight planning process in conjunction with other rail stakeholders to provide a list of prioritized projects for freight rail improvements on publicly owned track.

Analyzed regional rail lines and impacts of traffic growth using GIS software, and providing graphic outputs and data to regional transportation planners.
Performed a detailed analysis of freight rail grade crossing impacts in the region to assist in evaluating the most suitable candidates for grade separation projects.
Subcontractor in developing the SANDAG Freight Gateway Study in conjunction with HDR and Cambridge Systematics.

Subcontractor in designing and developing improvements on the San Diego Metropolitan Transit System SD&AE South Line

Local agency and government Interaction
Appeared before the Port of San Diego Board of Port Commissioners, the San Diego City Council Land Use and Housing Committee, and the National City Planning Commission on freight rail issues.

Member of the SANDAG Regional Freight Working Group and the Transportation Priority Evaluation Committee for the regional Metropolitan Planning Organization.

Grant and loan applications.
Co-wrote application, analyzed public benefits, and assembled application package for a State grant of $7 million dollars for a rail yard project in Oregon.

Assisted in the preparation of four applications for the California Proposition 1B Freight Improvement Bond. Those project applications totaled over $450 million. Wrote cost benefit analysis for rail improvements for the Port of Corpus Christi as part of a TIGER IV application.

Wrote cost narrative and benefit analysis for rail terminal improvements for the Port of San Diego Tenth Avenue Marine Terminal as part of a TIGER IV application.
Authored Papers and Studies:

- Analysis of East Cost Propane Export Facilities – 2014
- LPG Marine Transportation – Comparative Cost Analysis – 2013
- NGL Pipeline Network Tariff And Netback Study - 2013
- US LPG Rail Transportation Analysis 2012 – 2013
- US Crude by Rail Transportation Analysis 2012 – 2013
- Northern Baja California LPG Market - 2012
- Crude by Rail: Options for California – 2012
- Northern Baja Freight Rail Market - 2011
- A History of Short Line Holding Company Consolidation - 2010
- San Diego Auto Terminal Capacity Analysis – 2010
- San Joaquin Valley Railroad; History & Operations - 2009
- San Diego & Imperial Counties Freight Rail Information Book – 2009
- Grays Harbor Vehicle Unit Train Feasibility Study - 2008
- Allocation of Maintenance Costs On Joint Use Rail Corridors - 2007
- Freight Rail Capacity Outlook, San Diego Subdivision, 2020 - 2007
- Evaluating the Public Benefit of California Short Line Railroads (draft) – 2007
- Evaluating Public Benefit and Cost Effectiveness of Freight Rail Projects - 2007
- San Diego Rail Capacity Issues: 2006-2025 - 2006
- San Diego Freight Rail Market Report - 2006

- Field Observation and Preliminary Assessment: Tijuana & Tecate Line, Tijuana to Garcia – 2006.
- Health Risk Assessment San Diego & Imperial Valley Railroad San Diego Yard:
- Impact to Ballpark Village Project - 2005
- A Proposal for Allocating Track Maintenance Costs for Joint Operations of the San Diego Trolley Light Rail Transit and the San Diego & Imperial Valley Freight Railroad -2005
- Prospects for the Freight Rail Market from the Port of San Diego - 2005
- Mexican Rail Market: Rail-to-Truck Modal Diversion Potential – 2004
- Rail Freight Carload Growth by Commodity, Export to Mexico, 1999-2003 - 2004
- Economic Benefit of Diverting Truck Traffic: San Diego Freight Facilities – 2004
- Methodology for Determining Marginal Costs of Additional Truck Traffic - 2004
- San Diego Freight Rail: Options for Sustained Growth – 2003
- Evaluating Short Line Railroad Traffic Growth Rates, and Applications for Carload Pricing (Dissertation) - 2003

Professional Affiliations
American Society of Transportation & Logistics
American Railway Engineering and Maintenance-of-Way Association
Committee 16 – Economics of Railway Engineering and Operations